



International Society for
Maxillofacial Rehabilitation

11th Biennial Meeting of the ISMR | May 4 - 7, 2016 | Belgrade, Serbia

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FROM DIAGNOSIS TO PALLIATION



2016 CONFERENCE PROGRAM

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**May 4-7, 2016
Belgrade, Serbia**





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Table of Contents

	<u>Page</u>
Supporting Organizations	5
Exhibitors	6
Committees	8
Invited Speakers.....	10
Social Events	22
Conference Program Schedule	23
Poster Presentations	27
Pre-Conference Workshops	29
Abstracts	30
Oral Presentations	
Wednesday	31
Thursday	35
Friday	46
Saturday.....	62
Poster Presentations	68
Notes.....	90

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We wish to thank our Supporting Organizations and Exhibitors for their generous support. This meeting would not be possible without their contributions. We encourage all delegates to visit exhibit booths to review the latest advancements in products and services.

Committees

ISMR Conference Organizing Committee

Prof. Dr. Dale Howes, Prosthodontist, Johannesburg, South Africa
Dr. Betsy Davis, Prosthodontist, Charleston, USA
Dr. Harry Reintsema, Maxillofacial Prosthodontist, Groningen, The Netherlands
Dr. Dennis Rohner, Oral Maxillofacial Surgeon, Aarau, Switzerland
Dr. Max Witjes, Oral Maxillofacial Surgeon, Groningen, The Netherlands

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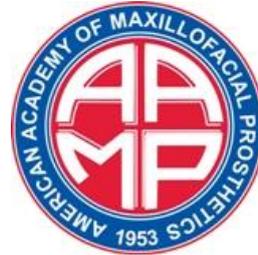
Dr. Claudio Brenner, Surgeon-Prosthodontist, Santiago, Chile
Dr. Daniel 'O Connell, Otolaryngology Head and Neck Surgeon, Edmonton, Canada
Dr. Trevor Coward, Maxillofacial Prosthodontist, UK
Prof Vitomir Konstantinovic, Oral Maxillofacial Surgeon, Belgrade, Serbia
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Prof. Dr. Jana Rieger, Speech Pathologist, Director of Research, Edmonton, Canada
Ms. Rosemarie Seelaus, Senior Anaplastologist, Chicago, USA
Dr. Hadi Seikaly, Otolaryngology Head and Neck Surgeon, Edmonton, Canada
Dr. Christine Wallace, Maxillofacial Prosthodontist, Sydney, Australia
Dr. Alvin Wee, Prosthodontist, Omaha, USA
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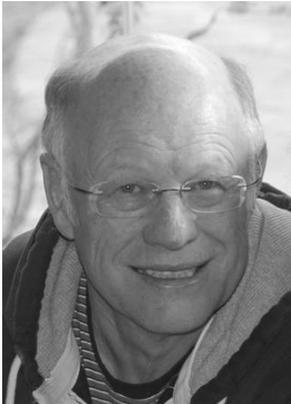
www.ismr-org.com



www.maxillofacialprosthetics.org



Invited Speakers



Greg Boyes-Varley

Craniofacial Implantology- The Journey from Resection to Rehabilitation

Greg Boyes-Varley is in full time private practice as a Maxillo-Facial and Oral Surgeon at the Morningside MediClinic in Johannesburg, South Africa. He has been in specialist private practice since 1987 and covers the Oral and Maxillofacial Surgery discipline to the Morningside MediClinic and the advanced applied surgical services to the Multidisciplinary Head and Neck Oncology Reconstruction Unit at the Morningside MediClinic. Dr Boyes-Varley spent 2 years at King's College School of Medicine and Dentistry in London in the academic department of Oral and Maxillofacial Surgery, where he learnt head and neck oncology and related reconstructive surgery, craniofacial implantology and cleft lip and palate reconstructive surgery. He is a part time Senior Consultant/ Senior Lecturer within the Department of Maxillo-Facial and Oral Surgery at the University of the Witwatersrand, Faculty of Health Sciences in Johannesburg and is an examiner for the College Maxillofacial Surgery for the College of Medicine of South Africa, a past committee member of this faculty. Dr Boyes-Varley sits on the Executive Committee of the Society of Maxillofacial and Oral Surgeons of South Africa and is the current President. Professor Brånemark invited him present his work to the 40th anniversary World Celebration of Osseointegration in Sao Paulo in 2005 and is now involved in multicenter collaboration studies with other P-I Brånemark international centers. Dr Boyes-Varley has written 2 chapters in international Maxillofacial Surgery textbooks on facial reconstruction following facial oncology resection. His other research interests have included the almost completion of a doctorate in low level laser induced healing, and has lectured extensively in South Africa, Australia, Zimbabwe, Sweden, Ireland, Holland, United Kingdom, Canada and the USA. Spare time is spent with his children and family and golf, gym, reading and IT distance based learning.



Mark Chambers

Pre Radiation Dental Decisions

Dr. Mark S. Chambers is a tenured Professor and Chair of the Section of Oral Oncology and Maxillofacial Prosthodontics at the University of Texas MD Anderson Cancer Center (UTMDACC).” He is a departmental Vice Chair of Compliance and Regulatory Affairs in the Department of Head and Neck Surgery. Dr. Chambers has an active research program as well as clinical practice. His clinical focus is on the oral morbidities of cancer patients and maxillofacial prosthetic rehabilitation. He serves as 1 of 5 Institutional Review Board “IRB” Chairmen and is active in leading the e-Research transition at UTMDACC. Dr. Chambers has funded research through NIH, NCI, NIDCR, and industry for multiple oral oncology outcomes assessments and novel therapeutic interventions in “supportive care industry-sponsored Phase I-III studies.” Dr. Chambers is the Immediate Past-President of the American Academy of Maxillofacial Prosthetics and serves on numerous Boards of supportive care foundations. He is a member of national-international medical and dental organizations. His second passion is in equine sports. Along with his wife, Rose Marie, he leads a breeding, training, and competition equine business specific to American Saddlebreds located at their Circle C Ranch in Montgomery, Texas.



Gabriella Constantinescu

Motivating Patients in Home-based Swallowing Therapy using Mobile Health Applications

Gabi Constantinescu is a Ph.D. student in the department of Communication Sciences and Disorders at the University of Alberta, Edmonton, Canada. After completing her MSc. in Speech-Language Pathology in 2007, Gabi joined the team at the Institute for Reconstructive Sciences in Medicine (iRSM) where she worked closely with patients following head and neck cancer. This experience afforded her the opportunity to understand the exceptionally high functional needs of this population and shaped her support for patient care innovation and clinically relevant research. Since starting her PhD, Gabi has been the recipient of several awards, including the Clinician Fellowship from Alberta Innovates Health Solutions, the Rising Star Award from the Graduate Students Association, and the Dr. Alice E. Wilson Award from the Canadian Federation of University Women. Gabi's doctoral work explores the potential of mobile health technology in assisting patients with dysphagia following head and neck cancer.



Trevor Coward

Development of Direct Printing of 2-Component Silicones for Facial & Body Prostheses

Trevor Coward is *Reader and Consultant in Prosthetic Facial Rehabilitation and has recently formed the "Academic Centre of Reconstructive Science" which comes under the Division of Tissue Engineering and Biophotonics, and has over 30 years of experience with rehabilitating patients with facial/body prostheses. The focus of his research is to rebuild faces using innovative prostheses based on novel technologies. The patients rehabilitated include children, young adults who have congenital malformations of the face, adults who have been treated for oral cancer, those following trauma to the face and neck or suffering from war wounds. TC's research interests fall into two main areas much of which is translational research that has been adapted for use in the NHS in the UK. The main focus of TC's research is based upon the use of digital technology in the planning and provision of facial prostheses. This includes CT, MRI, Laser scan data and more recently stereophotogrammetry used in conjunction with CAD/CAM techniques to produce anatomical facial /body parts in silicone. A second area of interest is Computerised Colour Formulation & Spectrophotometry. A spectrophotometer used in conjunction with a computerised colour formulation software permitted the intrinsic pigments and quantity of each pigment to be identified in natural skin and provide a range of basic shades in silicone to simulate the colour of various ethnic skin colours. Recent funding by DSTL and a commercial company has afforded the opportunity to develop 3D printing of prostheses in silicone and colour matched to the missing part of the face/body. He has published 40 papers in peer-reviewed journals and in 2013 was made a Honorary Clinical Professor at Hong Kong University Prince Philip Dental hospital for his research in maxillofacial prostheses.*



Neal Futran

Reducing Surgical Morbidity Utilizing Commercially Available 3D Medical Modelling Techniques

Neal D. Futran, MD, DMD joined the University of Washington faculty in 1995. He is currently the Allison T. Wanamaker Professor and Chair of the Department of Otolaryngology – Head and Neck Surgery. He is also the Director of Head and Neck Surgery as well as an adjunct professor in the departments of Plastic Surgery and Neurological Surgery. Dr. Futran earned his dentistry degree at the University of Pennsylvania and completed training in oral and maxillofacial surgery as well as an MD degree at the Health Science Center at Brooklyn, New York. He then trained in Otolaryngology – Head & Neck Surgery at the University of Rochester followed by a Head and Neck Oncology and Microvascular Surgery fellowship at Mount Sinai Hospital in New York with Dr. Mark Urken. Dr. Futran became an assistant professor in the Department of Otolaryngology at the University of South Florida in 1993 specializing in head and neck oncologic and reconstructive surgery and subsequently relocated to Seattle. Dr. Futran is board certified in Otolaryngology and has outstanding expertise and an active practice in head and neck oncology and microvascular reconstruction and rehabilitation of complex, oncology and trauma cases. He also specializes in skull base surgery utilizing both endoscopic and open approaches. His major research activities center on microvascular reconstruction of the head and neck and he also participates in grants studying molecular profiles and gene analysis in oral carcinogenesis. He enjoys teaching on the topics of head and neck reconstruction, craniofacial trauma, skull base surgery, and head and neck oncology worldwide. He is on the board of directors for the AO Foundation, a trustee of the UW Physicians, and the Virginia Bloedel Hearing Research Institute. Dr. Futran is on the editorial boards of several scientific journals and holds the position of deputy editor of *JAMA-Otolaryngology*. He is listed in the *Best Doctor's in America*.



Beat Hammer

Interconnected Navigation for Skull Base and Maxillary Tumor Surgery

Beat Hammer qualified in both, dentistry and medicine in Zurich between 1970 and 1980. He achieved a Special Degree in Maxillofacial Surgery in 1980 and in Plastic Surgery in 1987. He achieved his Habilitation in 1996. Currently he is a Senior Consultant at the Cranio Facial Center Hirslanden Aarau, Switzerland. He is a member of numerous national and international organizations. He was awarded with the AO Award for the monography: *Orbital Fractures - Diagnosis, Operative Treatment, Secondary Corrections* (Huber & Högrevé 1995). He has had a number of special fellowships and an extensive postgraduate education and experience in reconstructive maxillofacial surgery. He has published numerous articles on maxillofacial and reconstructive surgery.

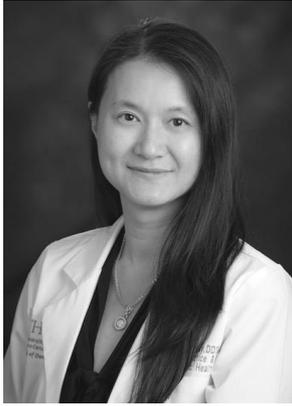


Andrej Kansky

Dental Rehabilitation of the Oral Cancer Patients

From 1992 working as maxillofacial surgery specialist at the Department of Maxillofacial and Oral Surgery, University Medical Center, Ljubljana, Slovenia. From 1993 working as assistant on Medical faculty Ljubljana, from 2002 Head of Maxillofacial and Oral Surgery Department University Medical Center, Ljubljana. PHD thesis: »The Role of Human Papilloma Viruses infection in Oral Squamous Cell carcinoma Etiopathogenesis«

Faculty of Medicine in Ljubljana University 2003.
Field of professional interest is Onkology, Reconstruction, Trauma, Orthognatic surgery, Dental implantology. Professional contribution is in the management, profesional and pedagogic field.



Sudarat Kiat-amnuay

Extraoral Maxillofacial Prostheses: From Research to Clinical Applications: Part 2

Dr. Sudarat Kiat-amnuay holds academic appointments as a tenured Professor and a section head, Maxillofacial Prosthodontics, Houston Center for Biomaterials and Biomimetics, University of Texas School of Dentistry at Houston, Texas, USA. She also has a joint appointment as an adjunct Professor, Department of Head and Neck Surgery, Section of Oncologic Dentistry and Maxillofacial Prosthetics, University of Texas M. D. Anderson Cancer Center in Houston.

She is a Diplomate of the American Board of Prosthodontics (2001) and the American Board of Clinical Anaplastology (2006). She graduated Doctor of Dental Surgery with Honors (1988-1994) from Khon Kaen University, Thailand. She completed a 3-year Advanced Education in Prosthodontic residency training program (1996-1999) and earned a Master's Degree in Oral biology from the University of Louisville, Kentucky. She also completed a 1.5-year program in Maxillofacial Prosthetics and Dental Oncology (1999-2000) from the University of Texas M. D. Anderson Cancer Center in Houston. She is currently a fellow of the International Congress of Oral Implantologist (1999), the American College of Prosthodontists (2001), the American Academy of Maxillofacial Prosthetics (2003), and International Academy of Oral Oncology (2007) and the American Dental Education Association Leadership Institute (2010). She has received over 40 teaching and research awards. She published over 60 abstracts, over 30 peer-reviewed journal articles, and contributed to 2 book chapters. She is a principal investigator and co-principal investigator of 27 grants including two funded from the National Institute of Health (U01 grant, 2003-2008) and HSRA (training grant, 2010-2015). She has also served as a reviewer of 5 peer-review journals. She is currently a member and/or committee of 15 dental and medical professional organizations.



Reha Kisnisci

Cleft Lip/Palate: A Paradigm Shift for Improved Surgical Management

Reha Kisnisci is currently a Professor in Ankara University, Turkey. He has an education and working experience at Ankara University, Royal Infirmary of Edinburgh, Scotland, John Peter Smith Hospital, Texas, USA. He also held visiting professorships at the Departments of Oral and Maxillofacial Surgery of Royal London Hospital, London, Aintree Hospitals, Liverpool and Manchester Royal Infirmary, Manchester, UK. He has served as president, chairman and member on several specialty related committees and boards nationally and internationally. He has been nominated and received several scientific awards where recently awarded "Honorary Fellowship" by British Association of Oral and Maxillofacial Surgeons. He has published 76 articles on peer reviewed journals and 5 chapters on textbooks. He has 119 scientific abstract presentations and 163 invited lectures nationally and internationally. He serves as an external examiner in various universities abroad. He is the cleft/craniofacial section editor of International Journal of Oral and Maxillofacial Surgery. He is also a member of several professional societies and a member of editorial board on several journals including American Journal of Oral and Maxillofacial Surgery, and Oral Surgery Oral Pathology Oral Medicine Oral Radiology. Main field of interests include orthognathic surgery, cleft deformities, temporomandibular disorders, sleep apnea and surgical implantology. In addition, he has devoted considerable time and actively involved for training and education in Oral and Maxillofacial Surgery nationally and internationally. He as well strongly believes and strives for collaborative efforts to raise the standards of education, clinical practice and patient welfare worldwide.



Christos Kolotas

Radiation Therapy and Brachytherapy in Head and Neck Cancer Treatment

PD Dr. Christos Kolotas was born in Limassol in 1960 where he finished school. He studied medicines at the University of Tübingen and received his degree in 1988. From 1988–1993 he was resident at the Department of Radiotherapy at the University of Düsseldorf, and from 1993- 2006 he was senior attending physician at the Department of Radiation Oncology in Offenbach and Bern. In 2002 he completed his university instruction license (venia legendi) in radiation therapy” and he is Associate Professor (Priv. Doz.) of Radiation Oncology at the University of Frankfurt. As a Senior Consultant he is Co-director of institute of radiotherapy at the Hirslanden clinic in Aarau where he has practiced since 2006. Over the past years, Dr Kolotas and his research team have been able to expand the spectrum of treatment indications for interventional radiotherapy. The capacity of advanced image guidance and individualized dose shaping, enabled the effective application of interstitial brachytherapy for the treatment of prostate, head & neck and breast cancer, sarcomas as well as brain tumors and soft tissue recurrences. Christos Kolotas has been presented 1998 with the Herman- Holthusen Award of the German Society for Radiation Oncology for the development of the innovative method of the CT based brachytherapy and 2002 with the Müller-Osten Award of the German society of Surgery for the development of a navigation system for intraoperative radiotherapy. Dr. Kolotas has contributed over 70 publications and books in renowned German and international scientific journals with approximately 1000 citations.



Vitomir Konstantinovic

Anchorage of Maxillofacial Epitheses

EDUCATION: University of Belgrade - 1984, Faculty of Stomatology, 1992, Faculty of Medicine, 1991, June, Master of Science (MSc) Thesis; 1993, November, Specialist in Maxillofacial Surgery; 1996, Doctorate Thesis (PhD)

TEACHING AND PROFESSIONAL EXPERIENCE: Professor in Maxillofacial surgery (2001–); Professor in Implantology (2002-); Associate member of Serbian Medical Academy (2006-); Councillor for Serbia in EACMFS (2006-2012), currently in IAOMS (2012-) European AO faculty (2006–) ; Chief of the Cathedra of Surgery (2006 -), Director of Serbian Dental Chamber (2013 -)

RESEARCH PROJECTS: from 1991 – collaborator or principal investigator in 7 scientific projects; currently - Periodontal medicine concept of active regeneration in periodontology and implantology; “Saliva test for oral cancer”, Clinical trial, Multicenter Academic research...

MEMBERSHIPS OF ASSOCIATIONS: European Association for Cranio - Maxillo - Facial Surgery; International Association of Oral and Maxillofacial Surgeons; Balkan Stomatological Society; Worldwide Forensic Odontology Contacts; Serbian medical Society; Serbian Association for Maxillofacial Surgery; Balkan Society of Maxillofacial Surgeons, President of Balkan Association of Maxillofacial Surgeons (2008-2011).

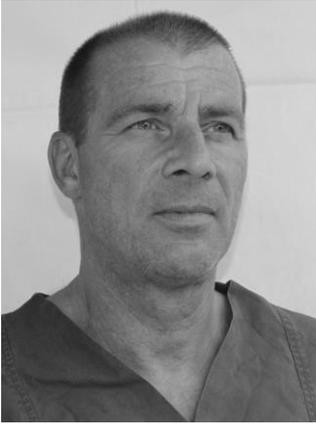
PUBLICATIONS & PRESENTATIONS: presented more than 200 scientific papers and reports; 10 Textbooks for undergraduate and postgraduate studies; published more than 40 articles in international journals and 9 in domestic; more than 100 lectures by invitation; articles published in ISI publications were cited more than 230 times (WoS, Scopus).



Dušan Mileusnić

Prevention and Treatment of Acute and Late Complications of Radiation Therapy in Head and Neck Cancers

Dr Dušan Mileusnić was born on April 21st 1957 in Osijek (Croatia). He completed the Faculty of Medicine at the University of Belgrade in 1981 and finalised his internship at the Clinical Hospital – Osijek. He started specialisation in radiation oncology at the beginning of 1985 in the Department of Oncology and Radiotherapy, Clinical Hospital Osijek, and passed the specialist exam on November 15, 1988 at Clinical Hospital "Dr Mladen Stojanovic" in Zagreb, Croatia. He completed his Postgraduate studies in oncology in 1987 at the Faculty of Medicine, University of Zagreb, where in 1991, he defended his master's thesis "The correlation value of steroid receptors, histopathological diagnosis and mammography findings in breast cancer." In the period from 1988 to 1991 he was employed at the Department for Oncology and Radiotherapy, Clinical Hospital Osijek. In 1991 he joined the Institute for Oncology and Radiology of Serbia where he worked at the Department for radiotherapy of solid tumours and the Department for Radiotherapy of gynaecological tumours. Since 1999 he worked as a radiation oncologist at the Department for Radiotherapy of Institute for radiology, Military Medical Academy (MMA) in Belgrade, where in 2002 he defended his PhD thesis on the subject of "The choice of optimal radiotherapy technique of head and neck tumours using the system for three-dimensional radiotherapy planning." After professional training at the Department of Functional and Stereotaxic Neurosurgery of the University Clinic in Cologne and the Clinic for Radiotherapy at the University Clinic in Innsbruck, he was in charge of leading the team from the MMA to introduce 3D planning, conformal radiotherapy (2000) and stereotaxic radiotherapy (2003) in clinical practice. During 2004/2005 he was employed as a consultant radiation oncologist at the Al Amal Cancer Hospital in Doha (Qatar). At the end of 2005, he returned to the Institute for Oncology and Radiology of Serbia, where he served as the Director of the Clinic for radiotherapy until February 2010, after which he was Advisor to the Director of Clinical Oncology (radiotherapy). In 2011 he returned to the Military Medical Academy as a radiation oncologist at the Department for Radiotherapy of Institute for Radiology. As of 2013 he works at Affidea Bosnia as a Medical director of IMC - Centre for radiotherapy in Banja Luka. By the decision of the Educational and Research Council of MMA, he was nominated to be an assistant professor of Radiology/Radiotherapy on two occasions (2003: VMA and 2012: School of Medicine, University of Defence in Belgrade). In 2006, by the decision of the Academic Council of the Medical College in Belgrade – he was elected to be a Professor at the Section for RTTs. By the decision of the Educational and Research Council of the Medical Faculty in Banja Luka and the Senate of the University of Banja Luka, he was appointed to the position of an assistant professor of oncology and radiotherapy in 2014. Dr Dušan Mileusnić is co-author of 62 published studies in journals and monographs, chapters on the subject of radiotherapy and oncology in several textbooks and monographs, and textbooks "Radiation Oncology" (in 2012). He actively participated in the work of a large number of professional radiotherapy/oncology meetings at home and abroad. He is a member of the European Society of radiation Oncology (ESTRO) and a member of the Presidency of Radiotherapy Section of the Serbian Medical Society.



Jörg Mudrak

Tumors in CBCT Imaging: Prospects in Diagnosis and Operative Planning

1987 Journeyman's certificate as dental technician
1987-1988 Education as dental ceramics technician at dental construction agency S. Schmid, in Oetwil an der Limmat / Switzerland.
1988-1993 Dentistry degree course at FREE UNIVERSITY BERLIN, first preclinical examination
Dentistry degree course at BAVARIAN JULIUS MAXIMILIAN UNIVERSITY WÜRZBURG
Dentistry degree course at JUSTUS LIEBIG UNIVERSITY GIESSEN, intermediary preclinical examination 1991
1993 State examination (first degree)
1994 - 1997 Further education and training as dentist for oral surgery in the general practice for oral maxillofacial surgery Dr. med. G. Heieis
1997 Recognition for area of specialization: ORAL SURGERY
1997 - Established as oral surgeon
Main area of practice: implantology, CBCT imaging
2003 -2004 Clinical consultant of SOREDEX OY, spiral tomography
2004 - 2006 Specialist consultant for implantology, DENTAL RATIO SYSTEMS
2007 Specialist consultant for digital radiology, PLANMECA2008- Clinical consultant SOREDEX and INSTRUMENTARIUM OY, (PaloDExGroup) digital radiology, CBCT imaging, research and developing
2008 - 2010 Established as radiologic assistant at the Department of Dento-
Maxilla - Facial Radiology, PD Dr. D. Schulze, University of Freiburg,
2010 - CBCT image editing, research and development
2012 Doctoral dissertation, "Development of a Patient Motion Simulating Device to induce and evaluate reproducible motion artefacts in CBCT Imaging" University Freiburg
Member of the BDO, DGZMK, DGP, ADA, AKFOS (Association of Forensic Odontostomatology in the DGZMK), IDKO (Disaster Victim Identity Commission, Germany), with missions in Thailand 2005



Rade D. Paravina

Extraoral Maxillofacial Prosthesis: From Research to Clinical Applications: Part 1

Rade D. Paravina, DDS, MS, PhD is a tenured Professor at the University of Texas School of Dentistry at Houston and Director of Houston Center for Biomaterials and Biomimetics (HCBB). He also holds the Ralph C. Cooley, DDS Distinguished Professorship in Biomaterials. Dr. Paravina has authored/co-edited three books, two software programs, one educational CD, and more than 200 other peer-reviewed publications. Dr. Paravina designed/developed several dental products and tests, including Linearguide 3D Master and Bleachedguide 3D Master shade guides, and scientific protocol for evaluating "chameleon effect" of dental materials. Dr. Paravina is Founder and Past President of the Society for Color and Appearance in Dentistry (SCAD). He is a recipient of the 2011 E. B. Clark Award, SCAD award for lifetime achievement, and the 2014 Jerome M. and Dorothy Schweitzer Research Award of the Greater New York Academy of Prosthodontics. He serves as editor of the permanent bi-annual issues of the *Journal of Esthetic and Restorative Dentistry* on Color and Appearance in Dentistry, and editorial board member for the *Journal of Dentistry*, *Clinical Oral Investigations*, *Journal of Prosthodontics*, *Journal of Esthetic and Restorative Dentistry*, and the *American Journal of Dentistry*.



Vladimir Popovski

Surgical Management of Malignant Salivary Gland Neoplasms: Requests and Quandaries

Professor Vladimir Popovski, age 58, is experienced Maxillofacial and Head and Neck surgeon on the University Clinic for Maxillofacial Surgery, in Skopje, and University Professor on the University "St. Cyril and Methodius", in Skopje, Macedonia. Formerly he was Head of the University Clinic for Maxillofacial Surgery in Skopje-Macedonia from 2006-2008 and Deputy Minister of health for the period 2008-2011. Presently he is President of Balkan Association of Maxillofacial Surgery and Councilor in European Association for Cranio-Maxillofacial Surgery. A well renowned expert in the field of maxillofacial surgery, with his principal works involving oncological surgery of maxillofacial region, clefts, oro-facial deformities, trauma, and especially surgical pathology of salivary glands. He has been committed to this surgical entity during the past 25 years, during which he has been an invited speaker, oral exponent or chairman on many international meetings in Vienna, Kyoto, Antalya, Washington DC, Athens, Tours-France, Varna, Belgrade, Barcelona, Bologna, Zagreb, Bruges, Prague, including two in Ankara, under the auspices of the American Academy of Otolaryngology Head and Neck Surgery. He is an author of extensive opus of scientific articles in different regional and international journals. Awarded for his Educational activities for EACMFS on the XX-th jubilee Congress in Bruges. On the latest XXII-th European Congress on EACMFS in Prague 2014 on the proposal of the Executive Committee of Association he was honored for outstanding contribution for European Association with the prestigious Recognition Award of European Association for Cranio-Maxillofacial Surgery.



Igor Reshetov

Head and Neck Cancer- Global Problem and International Solution

29.05.1964 / Russia

Education:

N.I.Pirogov State Medical University, Moscow – 1981-1987 yy.

Postgraduated studies

P.A.Hertzen Cancer Research Institute, Moscow. 1987-1991. Certificate of oncologist.

B.V.Petrovsky National Center of Surgery, Moscow.- 1988. Specialization in Plastic Microsurgery.

Dissertation of candidate of medical sciences "Venous shunt in esophagoplastic by gastric tube" – 1992.

Dissertation of doctor of medical sciences "Methodical aspects of microsurgical autotransplantation of tissues in oncology" 1998

Second Highest Education- Russian Academy Governmental Management

2005-2009. Diploma Manager of Governmental and Municipal Management

IFHNOS Global Continuing Education Programm October 2008. Moscow. Russia}

IFHNOS Global Continuing Education Programm October 2010.

S.Peterburg. Russia

IFHNOS Global Continuing Education Programm October 2012. Kiev. Ukrain

Carreer:

Senior researcher – P.A.Hertzen Cancer Research Institute, dept. of microsurgery 1992-2001

Chief department of Head & Neck Tumours P.A.Hertzen Cancer Research Institute, Moscow. 2001 - 2014.

Deputy director of P.A.Hertzen Cancer Research Institute, 2002-2005.

Head Faculty Oncology Institute Postgraduate Education Federal Medico-Biological Agency Russia. 2003 till today

Director Scientific, Educational and Clinical Center of Reconstructive and Plastic Surgery 1st Medical University named I.M.Sechenov, Moscow , 2014 – today.



Jana Rieger

Capturing Meaningful Patient Data for Translation into Improved Health Outcomes

Jana Rieger is the Director of Research at the Institute for Reconstructive Sciences in Medicine and a Professor in the Faculty of Rehabilitation Medicine at the University of Alberta. Since 1999, her research has focused on understanding functional outcomes, including speech, swallowing, chewing and quality of life in patients with defects of the head and neck secondary to cancer and trauma. From 2004 – 2011, she was funded by the Alberta Heritage Foundation for Medical Research as a Population Health Clinician Researcher. Dr. Jana Rieger was one of four successful researchers to receive funding from the Alberta Cancer Foundation's Transformative Program Competition in April 2014. Dr. Rieger and her team are studying technological interfaces for dysphagia rehabilitation in patients with head and neck cancer. Dr. Rieger has lectured internationally by invitation on functional outcomes related to defects of the head and neck and has published over 50 articles on research in this area.



Dennis Rohner

Zygomatic Implants in Maxillectomies

Dennis Rohner completed the Dental and Medical Board examinations in 1985 and 1990, respectively. He has been trained in Handsurgery, General Surgery and Orthopedic Surgery before entering the Dept. for Reconstructive Surgery. He spent 1 year as Research/Clinical Fellow in Singapore (Plastic Surgery, Singapore General Hospital). He completed his training in Maxillofacial and Reconstructive Surgery at the University hospital of Basel (Prof. J.Prein) in 1999. In 2005 he has written a master thesis ("Prefabrication of free vascular flaps") and was subsequently appointed as an Associate Professor at the University of Basel. He is one of the founders of the Cranio Facial Center, where he practices since 2003. Dennis Rohner is a Faculty Member of AO International. He has lectured and published internationally. His research interests include tissue engineering, prototyping of resorbable scaffolds, prefabricated free flap reconstruction and application of 3D manufacturing technology.



Hadi Seikaly

The ART in Maxillary Reconstruction

Dr. Hadi Seikaly is a Professor of Surgery and Oncology at the University of Alberta. He is the Divisional Director and the Zone Section Head for Otolaryngology – Head and Neck Surgery. Dr. Seikaly graduated from the University of Toronto medical school and completed his residency training at the University of Alberta in Otolaryngology Head and Neck Surgery. He then obtained fellowship training at the University of Texas Medical Branch in advanced head and neck oncology, and microvascular reconstruction. Dr. Seikaly returned to the University of Alberta as an attending in the division of Otolaryngology Head and Neck Surgery, department of surgery in 1996. Dr. Seikaly has a large practice dedicated to head, neck, and skull base oncology and reconstruction. His research interests include functional surgical and reconstructive outcomes, microvascular head and neck reconstruction, submandibular gland transfer medical modeling and digital surgical planning as it applies to the head and neck region. Dr. Seikaly is the Director of Head and Neck Surgery Functional Assessment Laboratory (HNSFAL) at the Institute of Reconstructive Sciences in Medicine and is the director of the Head and neck Research Network. He has been a PI or collaborator on numerous research grants receiving funding from various agencies, including CIHR and Terry Fox Foundation. He has published over 130 peer reviewed papers and book chapters. Dr. Seikaly is the recipient of the prestigious Top 10 teacher award in the department of surgery for the past 12 years. He is a member of numerous surgical societies, nationally/internationally and has been invited as a visiting professor to over 50 institutions lecturing on all aspects of Head and Neck Oncology and reconstruction. Dr. Seikaly is the Co-editor of the Journal of Otolaryngology Head and Neck Surgery.



Srboľjub Stošić

Reconstruction of the Mandible in Rehabilitation of Oral Function

EDUCATION:

1977-1982 – Medical faculty, University of Belgrad, average rating 8,5.

1983-1984 - Sword cavalry officer's school, 59th class, mark: excellent

1985-1989 - specialisation on maxillofacial surgery, mark: excellent

1993. - professional development: London, St. Mary Hospital, Kings College Hospital

1998. – PhD degree, Military Medical Academy, Belgrade

TEACHING DEGREES:

1999 – Associate Professor on MAXILLOFACIAL SURGERY

2003 – Professor on MAXILLOFACIAL SURGERY

AWARDS:

- Letter of Thanks of Serbian Physicians' Society

- Medal for virtue in the field of defense and security 1999.



Verdran Uglešić
Midfacial Surgery Digital Planning



Sue Walter
Ethics and End of Life Care

Dr. Sue Walter is a specialist palliative physician in private practice in Johannesburg, South Africa. She also holds a Masters degree in Psychology and Palliative Medicine and is currently completing her PhD in bioethics and Health Law. Dr. Sue Walter is a founder of the palliative charity 11 Angels foundation which assists those who cannot afford palliative care. She is also the head of the clinical ethical committee at the Medi group hospitals. She has published numerous papers and a book. She is the palliative specialist for the Morningside/Sandton head and neck team.



Johan Wolfaardt

Advanced Jaw Reconstruction: The Digital Revolution and Evolution

Professor, Division of Otolaryngology-Head and Neck Surgery, Department of Surgery, Faculty of Medicine and Dentistry, University of Alberta / Director of Clinics and International Relations, Institute for Reconstructive Sciences in Medicine, University of Alberta/Covenant Health/Alberta Health Services, Edmonton, Alberta, Canada. Dr. Wolfaardt is a Full Professor, Division of Otolaryngology-Head and Neck Surgery, Department of Surgery, Faculty of Medicine and Dentistry, University of Alberta. He is also Director of Clinics and International Relations, the Institute for Reconstructive Sciences in Medicine (iRSM), Edmonton, Alberta, Canada. Dr. Wolfaardt is a co-founder of iRSM. His clinical interests are in the area of Maxillofacial Prosthodontics with particular emphasis in the area of head and neck reconstruction, osseointegration and treatment outcomes. His research interests involve treatment outcomes and digital technologies in head and neck reconstruction. Dr. Wolfaardt has a special interest in quality management and he led the quality initiative that enabled iRSM to register an ISO9000 quality system for the clinical and research aspects of osseointegration care. Dr Wolfaardt has published over 100 papers in refereed journals and contributed to a variety of texts. He has lectured both nationally and internationally on Maxillofacial Prosthodontics, head and neck reconstruction, osseointegration, functional outcomes in head and neck reconstruction, and advanced digital technology. Dr. Wolfaardt has served on Boards of the International College of Prosthodontists, the American Academy of Maxillofacial Prosthetics, the International Society for Maxillofacial Rehabilitation, and the Advanced Digital Technology Foundation (ADT) for Head and Neck Reconstruction. Dr. Wolfaardt is past President of the International Society for Maxillofacial Rehabilitation and the ADT Foundation. Dr. Wolfaardt was awarded Honorary Membership by the Canadian Dental Association in 2011. The Alberta Dental Association and College presented the Award of Excellence to Dr. Wolfaardt in 2013. In 2014, the American Academy of Maxillofacial Prosthetics honored Dr. Wolfaardt with the Andrew J. Ackerman Memorial Award.



Klaus-Dietrich Wolff

Limitations of Ablative Tumor Surgery in the Head and Neck

Professor Wolff (b. 1959) researches in the area of plastic reconstructive facial surgery. The aim of his research work is to improve the microsurgical transfer of tissue through a better understanding of the construction, physiology and healing of tissue transplants. His main focus is on the development of an extracorporeal oxygenation and perfusion system and the clinical establishment of perforator flaps to replace soft tissue. After studying medicine and dentistry at FU Berlin, Professor Wolff completed his PhD in both subjects in 1987 and acquired his postdoctoral teaching qualification (habilitation) in 1994. Subsequently he was appointed adjunct professor at FU Berlin in 1999. This was followed by a position at Ruhr University Bochum where he held the Chair of Oral Surgery and Plastic Facial Surgery from 2000 to 2007 and the post of medical director from 2004 to 2007. In 2007 he accepted an appointment at TUM where he has since been a professor at Klinikum rechts der Isar and a member of a number of professional associations. Professor Wolff was elected President of the European Association for Cranio-Maxillo-Facial Surgery 2016-2018. Professor Wolff has published more than 200 Medline-listed papers and is author of a textbook for reconstructive surgery using free flaps.

The views and opinions expressed in this activity are those of the presenter and do not necessarily reflect the views of the International Symposium or supporting institutions.

Social Events

Wednesday, May 4th

Welcome Reception: Atlantic Foyer

Time: 18:15-19:15



We encourage all conference delegates to arrive early to pick-up your conference credentials and familiarize yourselves with the conference venue. Beverages and hors d'oeuvres will be provided.

Fee: No fee required for delegates & paid accompanying guest(s)

Dress: Business Casual

Thursday, May 5th

Poster Session & Exhibit Reception: Atlantic Foyer

Time: 16:30-18:30

The Program Committee considers posters an important contribution to the success of this conference. Many of the presentations will provide information that is thought to be better suited to the higher level of exposure and interaction that a poster presentation affords. Poster presentations are seen as an extremely important venue for information exchange.

The ISMR encourages all delegates to visit each exhibitor to discuss the latest products and services provided by our corporate partners. The ISMR would like to thank our industry partners who made this conference possible through their generous contributions.

Fee: No fee required for delegates & paid accompanying guest(s)

Dress: Business Casual

Friday, May 6th

ISMR Reception & Banquet: Top of the Hub - meet in hotel lobby for transportation

Time: 18:45-22:00

Delegates and guests are invited to attend this gala event for the recognition of participating countries and their representatives, presentation of awards and installation of new officers. Entertainment, light appetizers, dinner and wine are included in this banquet event.

On-Site Fee: \$100.00 USD / person

Dress: Semi-Formal

Saturday, May 7th

Social Outing: Cruise Along the Danube- meet in hotel lobby for transportation

Time: 14:00-17:30



Join your colleagues for a post-conference cruise along the beautiful Danube River.

On-Site Fee: \$65.00 USD / person

Dress: Casual

Conference Program Schedule

TUESDAY, MAY 3		
<u>Time</u>		
08:00-17:00	ISMR Board Meeting <i>(Invitation Only)</i>	
WEDNESDAY, MAY 4		
<u>Time</u>	<u>Presenters</u>	
09:00-15:30 Baltic / Aegean	Pre-Conference All Day Workshop (Lunch to start at 11:00) Workshop 1: <i>Facial Prosthetics & Colour: Navigating the Spectrum of Possibilities</i>	
	Ms. Rosemary Seelaus Prof. Vojkan Lazic Prof. Mark Waters Dr. Sudarat Kiat-Amnuay Dr. Alan Bocca Dr. Tomomi Baba	
10:30-15:30	Exhibit Set-Up	
11:00-12:30	Osseointegration in Malignancy Luncheon <i>(Invitation Only)</i>	
13:00-15:30 Mediterranean	Pre-Conference Half Day Workshop / Corporate Session I Workshop 2: <i>Implant Supported Craniofacial Rehabilitation - Southern Implants</i>	
	Prof. Dale Howes Prof. Martin Osswald Prof. Hadi Seikaly Dr. Greg Boyes-Varley	
15:30-15:45	Coffee Break & Exhibit Review	
15:45-18:15 Adriatic	Pre-Conference Half Day Workshops / Corporate Session II Workshop 3: 3d Reconstruction Workshop - 3d Lab UMCG	
	Dr. Max Witjes Dr. Joep Kraiema	
Graduate Student Session - Management of Head & Neck Location: Atlantic Room Moderator: Harry Reintsema		
15:45-16:00	1. <i>The Role of the Prosthodontist in Multidisciplinary Maxillofacial Rehabilitation</i>	Michael Michael South Africa
16:00-16:15	2. <i>Implant Installation in Maxillofacial Reconstruction Using Surgical Design and Simulation</i>	Sherif Irdis Canada
16:15-16:30	3. <i>Predictors of Delayed Decannulation After Head and Neck Cancer Surgery</i>	Andre Issac Canada
16:30-16:45	4. <i>Maxillofacial Prosthetic Literature in Prosthodontic Journals: A 10-Year Observation</i>	Mahmoud Elbashti Japan
16:45-17:00	5. <i>Implant Retained Prosthetic Rehabilitation and Soft Tissue Management 5</i>	Nathalie Vosselman The Netherlands
18:15-19:30	Welcome Reception	

THURSDAY, MAY 5

Location: Pacific Room

Time		Presenter
8:00-9:00	Registration / Coffee & Exhibit Review	
9:00-9:10	Opening Ceremony	Dr. Harry Reintsema ISMR President
Diagnosis Moderators: David Reisberg & Milan Petrović		
9:10-9:35	6. <i>Advanced Jaw Reconstruction: The Digital Revolution and Evolution</i>	Prof. John Wolfaardt* Canada
9:35-10:00	7. <i>Head and Neck Cancer- Global Problem and International Solution</i>	Dr. Igor Reshetov* Russia
10:00-10:15	8. <i>Importance of Oral Cancer Screening by Primary Care Providers</i>	Dr. Alvin Wee United States
10:15-10:30	9. <i>Informed Consent Unmasked: Pathways in Obtaining Consent in Head-Neck Oncology</i>	Dr. Enne Feenstra The Netherlands
10:30-10:45	10. <i>Patient Centered Outcomes in Head and Neck Cancer</i>	Dr. Adrian Mendez Canada
10:45-11:00	11. <i>Head and Neck Cancer Management: A Hazardous Profession?</i>	Dr. Meriting Thokoane South Africa
11:00-11:15	12. <i>Campaign to Promote Awareness of MHN Cancer in Ireland</i>	Dr. Denise MacCarthy Ireland
11:15-11:40	13. <i>Pre-radiation Oral Intervention Decision-making</i>	Dr. Mark Chambers* United States
11:40-13:00	Brunch & Exhibit Review	
TX Planning Moderators: John Wolfaardt & Srboj Stojčić		
13:00-13:25	14. <i>Dental Rehabilitation of the Oral Cancer Patients</i>	Dr. Andrej Kansky* Slovenia
13:25-13:50	15. <i>3D Digital Planning in Midfacial Surgery</i>	Prof. Vedran Uglešić* Croatia
13:50-14:15	16. <i>Tumors in CBCT Imaging: Prospects in Diagnosis and Operative Planning</i>	Dr Jörg Mudrak* Germany
14:15-14:40	17. <i>Capturing Meaningful Patient Data for Translation into Improved Health Outcomes</i>	Dr. Jana Rieger* Canada
14:40-14:55	18. <i>Quality of Life of Maxillectomy Patients Restored with Obturator Prosthesis</i>	Dr. Ioli Ioanna Artopoulou Greece
14:55-15:10	19. <i>Prosthetic Rehabilitation and Quality of Life: A Prospective Study</i>	Dr. Didier Maurice France
15:10-15:25	20. <i>Costs of Two Strategies for Implant Placement in Oral Oncology</i>	Dr. Caroline Speksnijder The Netherlands
15:25-15:40	21. <i>Metabolic Tumor Volume Prognosticates Oral Cavity Cancer</i>	Dr. Han Zhang Canada
15:40-16:05	22. <i>Prevention and Treatment of Acute and Late Complications of Radiation Therapy in Head and Neck Cancers</i>	Dr. Dušan Mileusnić* Bosnia and Herzegovina
16:05-16:30	23. <i>Ethics and End of Life Care</i>	Dr. Sue Walter* South Africa
16:30-18:30	Poster Session & Exhibit Reception	

FRIDAY, MAY 6

Location: Pacific Room

<u>Time</u>		<u>Presenter</u>
8:00-8:30	Registration / Coffee & Exhibit Review	
Curative Care Surgery Moderators: Hadi Seikaly & Vitomir Konstantinovic		
8:30-8:55	24. <i>Cleft Lip/Palate: A Paradigm Shift for Improved Surgical Management</i>	Prof. Reha Kisnisci* Russia
8:55-9:20	25. <i>Surgical Management of Malignant Salivary Gland Neoplasms: Requests and Quandaries</i>	Dr. Vladimir Popovski* Macedonia
9:20-9:45	26. <i>Interconnected Navigation for Skull Base and Maxillary Tumor Surgery</i>	Dr. Beat Hammer* Switzerland
9:45-10:10	27. <i>Reducing Morbidity in Head and Neck Cancer Treatment- Utilization of Templates for Head and Neck Reconstruction</i>	Dr. Neal Futran* United States
10:10-10:35	28. <i>Limitations of Ablative Tumor Surgery in the Head and Neck</i>	Prof. Klaus-Dietrich Wolff* Germany
10:35-11:00	29. <i>New Method for Reconstruction of Maxillofacial Defects using Embryonic Processes</i>	Dr. Martin Chin United States
11:00-11:25	30. <i>Radiation Therapy and Brachytherapy in Head and Neck Cancer Treatment</i>	Dr. Christos Kolotas* Germany
11:25-11:30	Panel Discussion	
11:30-13:00	Brunch & Exhibit Review	
11:30-13:00	ISMR Constituent Lunch (Members Meeting)	

Head & Neck Rehab (A) Location: Pacific Room Moderator: Mark Chambers & Betsy Davis			Head & Neck Rehab (B) Location: Atlantic Room Moderators: Franco Bassi & Bob Taft		
<u>Time</u>		<u>Presenter</u>	<u>Time</u>		<u>Presenter</u>
13:00-13:25	31. <i>Motivating Patients in Home-based Swallowing Therapy using Mobile Health Applications</i>	Dr. Gabriela Constantinescu* Canada	13:00-13:25	42. <i>Reconstruction of the Mandible in Rehabilitation of Oral Function</i>	Prof. Srboljub Stosic* Serbia
13:25-13:50	32. <i>Anchorage of Maxillofacial Epitheses</i>	Prof. Vitomir Konstantinovic* Serbia	13:25-13:50	43. <i>Ultrasensitive Detection of Oncogenic HPV in Oropharyngeal Squamous Cell Carcinoma Using Droplet Digital PCR</i>	Dr. Vincent Biron Canada
13:50-14:05	33. <i>Electrical Stimulation for Prevention of Shoulder Dysfunction After Neck Dissection</i>	Dr. Brittany Barber Canada	13:50-14:05	44. <i>Osseointegrated Implants as a Predictable Outcome for Craniofacial Rehabilitation</i>	Dr. Margaret Price United Kingdom
14:05-14:20	34. <i>Reconstruction of Orofacial Defects of Different Etiology using Dental Implants</i>	Dr. Marija Bubalo Serbia	14:05-14:20	45. <i>Modification of the Submandibular Gland Transfer Procedure</i>	Dr. Jeffson Chung Canada
14:20-14:35	35. <i>Primary Implants in Head and Neck Cancer Patients</i>	Dr. Anke Korfage The Netherlands	14:20-14:35	46. <i>Oncolytic Reovirus and HPV Status in Head and Neck Cancer</i>	Dr. Timothy Cooper Canada

14:35-14:50	36. <i>How to Optimize Implants Stability in Low to Optimize Implant Stability in Low-Density Bone?</i>	Dr. Tijana Misic Serbia	14:35-14:50	47. <i>Zygoma-Magnet Based Silicone Prosthetic Reconstruction of Nasal Defects</i>	Dr. Artavazd Kharazyan Russian Federation
14:50-15:05	37. <i>Ocular and Orbital Defect Rehabilitation – The Unconventional Prosthetic Approach</i>	Dr. Neeraj Kumar Chandraker India	14:50-15:05	48. <i>Rehabilitation After Failed Bone Augmentation: Immediately Loaded Quad Zygoma Implants</i>	Dr. Zoran Lazic Serbia
15:05-16:00	Coffee Break & Exhibit Review		15:05-16:00	Coffee Break & Exhibit Review	
16:00-16:15	38. <i>Volumetric Analysis of Bone Grafting Techniques in Patients with Clefts</i>	Dr. David Reisberg United States	16:00-16:15	49. <i>The UCSF Experience with Zygomatic Implants for Maxillary Defects</i>	Dr. Arun Sharma United States
16:15-16:30	39. <i>A Study on the Mechanism of Radiation-Induced Trismus</i>	Dr. Weihong Ren China	16:15-16:30	50. <i>Intraoral and Facial Prosthetics Combined Rehabilitation with and without Implants</i>	Dr. Vicente Gonzalez Mexico
16:30-16:45	40. <i>Prosthetic Rehabilitation Difficulties in Radiation Induced Xerostomia Combined with Microstomia</i>	Dr. Begüm Yerci Kosor Turkey	16:30-16:45	51. <i>Obturator Supported Facial Prosthesis</i>	Dr. Banu Karayazgan Saracoglu Turkey
16:45-17:00	41. <i>Revitalizing Lives by Maxillary Obturator</i>	Dr. Smriti Narayan Thakur Nepal	16:45-17:00	52. <i>Biohpp Telescopic Obturator Prosthesis</i>	Dr. Radivoje Radosavljevic Serbia
18:45-22:30	Congress Banquet (Elective- Reservation Required)				

SATURDAY, MAY 7

Location: Pacific Room

Time	Presenter
8:00-9:00	Registration / Coffee & Exhibit Review
Rehabilitation Moderators: John Beumer & Arun Sharma	
9:00-9:25	53. <i>The ART in Maxillary Reconstruction</i> Prof. Hadi Seikaly* Canada
9:25-9:50	54. <i>Zygomatic Implants in Maxillectomies</i> Prof. Dennis Rohner* Switzerland
9:50-10:15	55. <i>Craniofacial Implantology- The Journey from Resection to Rehabilitation</i> Dr. Greg Boyes-Varley* South Africa
10:15-10:40	56. <i>Development of Direct Printing of 2-Component Silicones for Facial & Body Prostheses</i> Dr. Trevor Coward* United Kingdom
10:40-11:05	57. <i>Extraoral Maxillofacial Prostheses: From Research to Clinical Applications: Parts 1 & 2</i> Dr. Sudarat Kiat-Amnuay* Dr. Rade Paravina* United States
11:05-11:30	58. <i>Dental Implants in Complex Maxillofacial Rehabilitations</i> Prof. Bilal Al Nawas Germany
11:30-11:55	Panel Discussion
11:55-12:30	Poster Awards & 2017 San Francisco, 2018 Australia Announcements
12:30	Congress Adjourns
14:00-17:30	Social Outing - Boat Cruise (Elective- Reservation Required)

Poster Presentations

Poster #	Poster Presenter	Presentation Title
1	Ariani, Nina Indonesia	<i>Current Status of International (Non-United States) Maxillofacial Prosthodontics</i>
2	Bertolino, Davide Italy	<i>The Oral Conservation of the Radio-Treated Patient</i>
3	Bocca, Norma Italy	<i>Conventional Methods of Retention for Facial Epithesis</i>
4	Celebic, Asja Croatia	<i>OHRQoL and Chewing Function in Three Different Removable Denture Options</i>
5	Dholam, Kanchan India	<i>Quality of Life in Defects Restored with Obturators or Reconstructed...</i>
6	Djordjevic, Igor Serbia	<i>Maxillofacial Prosthetic Rehabilitation with Implant-Retained Auricular Prosthesis: A Case Report</i>
7	Elbashti, Mahmoud Japan	<i>Evaluating the Feasibility and Accuracy of Digitizing Edentulous Maxillectomy Defects</i>
8	Elbashti, Mahmoud Japan	<i>The Role of Digital Technologies in Maxillofacial Prosthetic 3D Presentations</i>
9	Feng, Hailan China	<i>Implants Supported Overdenture for a Maxillofacial Defects Patient</i>
10	Filipovic-Zore, Irina Croatia	<i>Cerebral Palsy Disabled Patient Complex Implanto-Prosthodontic Rehabilitation</i>
11	Gassino, Gianfranco Italy	<i>Implant-Retained Facial Prostheses: Auricular Defects</i>
12	Hatab, Nur Serbia	<i>CBET Planning of Orbit Implants and Postoperative Stability</i>
13	Huang, I-Hsuan Taiwan	<i>Fracture Risk Assessment of Mandible with Different Defect Patterns</i>
14	Ivanjac, Filip Serbia	<i>Craniofacial Implant Stability Measurement by Means of Resonance Frequency Analysis</i>
15	Jelovac, Drago Serbia	<i>CBCT Characteristics of Patient with Bilateral Simultaneous Bronj of Maxilla</i>
16	Karayazgan Saracoglu, Banu Turkey	<i>Assessment of Hybrid and Removable Prosthesis in Mandibulectomy Patients</i>
17	Koren, Matic Slovenia	<i>Dental Rehabilitation after Mandibular Defect Reconstruction with Free Flap</i>
18	Kovačič, Žiga Taiwan	<i>Orthognatic Surgery in a Patient with Pfeifer Syndrome - Case Report</i>
19	Kwon, Hobeom South Korea	<i>Preoperative Prediction of Implant-Prosthetics Treatment for Maxillofacial Prosthetics using FEA</i>

Poster Presentations Continued

Poster #	Poster Presenter	Presentation Title
20	Lazic, Vojkan Serbia	<i>Acrylic Resin Facial Prosthesis</i>
21	Mandić, Bojan Serbia	<i>Primary Reconstruction of the Mouth Floor Defects</i>
22	Maurice, Didier France	<i>Prosthetic Rehabilitation of an Adenocarcinoma of the Maxilla</i>
23	Miletic, Ana Serbia	<i>Implant Retained Overlay Prosthesis in Mandible with Bony Defect</i>
24	Mindruta, Rodica Moldova	<i>Ocular and Orbital Prosthetic Rehabilitation in the OMF Prosthetic Service, 5-years Experience, Republic of Moldova</i>
25	Missinne, Karel Belgium	<i>Prosthetic Rehabilitation after Hemi-Maxillectomy with Short Implants in the Zygoma</i>
26	Mothopi-Peri, Matshediso South Africa	<i>Osteoradionecrosis: A Minor Problem or a Major Concern?</i>
27	Nacher-Garcia, Cristina United Kingdom	<i>Colour-Difference Thresholds in Silicone Maxillofacial Prosthesis: Spectromatch Digital System</i>
28	Pawar, Jyoti India	<i>Orbital Prosthesis: A Nobel Reconstructive Approach</i>
29	Reintsema, Harry The Netherlands	<i>Caries After Radiation Therapy in Head and Neck Region</i>
30	Ren, Weihong China	<i>Trismus in 160 Patients Radiation-Treated for Head and Neck Cancer</i>
31	Tabaković, Saša Serbia	<i>Computer-Aided Design and Rapid Prototyping Technology in Bone Defect Reconstruction</i>
32	Thokoane, Meriting South Africa	<i>The Effect of too Much Caring: A Preliminary Study</i>
33	Todorovic, Ana Serbia	<i>Prosthetic Rehabilitation of a Patient with Bilateral Maxillectomy: A Case Report</i>
34	Xi, Zhang China	<i>A Prosthesis Treatment for a Cancer Patient</i>
35	Yoda, Nobuhiro Japan	<i>Biomechanical Bone Responses by Mandibular Reconstruction with Fibula Free Flap</i>

The Program Committee reserves the right to modify the program schedule as circumstances might dictate. Views expressed by speakers at this meeting are solely their own and do not necessarily reflect the positions or policies of the conference program committee.

Pre-Conference Workshops

Full Day Workshop

Workshop #1

Wednesday, May 24 09:00-15:30 **Facial Prosthetics & Colour: Navigating the Spectrum of Possibilities**
*With generous support from our Gold Sponsor, Bredent.
Additional support by Charlie Carroll, Spectromatch*

Location: Baltic/Aegean Room **Instructors:** Ms. Rosemary Seelaus, Prof. Vojkan Ladic, Prof. Mark Waters, Dr. Sudarat Kiat-Amnuay, Dr. Alan Bocca, Dr. Tomomi Baba

Description: The Special Interest Group for Facial Prosthetic Rehabilitation (SIG-FPR) is hosting the first ever ISMR on-site workshop in Facial Prosthetic Rehabilitation. SIG-FPR Co-Chair, Rosemary "Rosie" Seelaus will host a workshop specific to techniques in facial prosthetic fabrication for ISMR members and workshop attendees of the Belgrade ISMR conference. Colour science and application, silicone technology and retention techniques are among the topics that will be addressed during this combination session of lectures and hands-on demonstrations of the latest in fabrication techniques in facial prosthetic rehabilitation. Don't miss out on this opportunity to polish your fabrication techniques so that you may better serve your patients in their rehabilitation.

Half Day Workshops

Workshop #2

Wednesday, May 24 13:00-15:30 **Implant Supported Craniofacial Rehabilitation**
With generous support from our Gold Sponsor, Southern Implants

Location: Mediterranean Room **Instructors:** Prof. Dale Howes, Prof. Martin Osswald, Prof. Hadi Seikaly and Dr. Greg Boyes- Varley

Description: The anatomic constraints of the craniofacial skeleton are a challenge for finding adequate bone for sustained osseointegration particularly in the ablated maxilla, the resected mandible and the rehabilitated facial bones using the grafted fibula. Regular implant fixtures seldom satisfy both the surgeon and the Prosthodontist for sustained osseous and prosthetic retention of the rehabilitation. A range of specific fixtures have been developed and researched with world leaders in maxillofacial rehabilitation to overcome the challenges of boney and prosthetic rehabilitation. The research, development, surgical planning and applications of the Oncology implant, the Co-Axis, the MAX and extraoral implants as well as the FIRST® fibula reconstruction kit developed for maxillofacial rehabilitation will be highlighted and demonstrated on prototyped models of the facial skeleton. A comprehensive workshop presented by world leaders in implant supported maxillofacial rehabilitation not to be missed!

Workshop #3

Wednesday, May 24 15:45-18:15 **3D Reconstruction Workshop -3D Lab UMCG**

Location: Adriatic Room **Instructors:** Dr. Max Witjes & Dr. Joep Kraiema

Description: Reconstructive planning in the head & neck area has evolved from basic anatomical reconstruction of a defect towards obtaining an optimal functional reconstruction. Now is an exciting era of new possibilities for optimizing outcome of combined reconstructive surgery and rehabilitation. This virtual planning workshop will focus on new techniques that aim for maximizing functional reconstruction of the jaws, including 3D virtual planning. Participants will learn how to plan and treat patients from (CT) imaging to a final surgical planning. Concepts of data acquisition, processing and segmentation to a 3D model are introduced. The participants will learn how to use a virtual planning environment for pre-operative surgical decision making. In the workshop both a mandibular and a maxillary case example will be practiced, including dental implant planning.

* Workshops are offered at an additional cost

Oral Presentation Abstracts



1

THE ROLE OF THE PROSTHODONTIST IN MULTIDISCIPLINARY MAXILLOFACIAL REHABILITATION

Michael, Michael *, Howes, Dale
Department of Oral Rehabilitation
Johannesburg, South Africa

Purpose: A presentation of two cases with free fibular flap grafting to rehabilitate mandibular defects is used to highlight the difference in treatment outcomes.

Introduction: The objective of any treatment for a disorder must be the elimination of the disease and the restoration of function. This is particularly true of the management of tumours and trauma of the head and neck where the challenge is greatest owing to the co-existence of all five senses that need to be maintained for maximum quality of life.

Clinical Report: Two cases with rehabilitated mandibular defects are presented:

A 37-year-old female who had a “angle-to-angle” mandibular resection due to an ameloblastoma was rehabilitated with a digitally pre-planned free fibula flap accommodating an implant-supported-prosthesis.

A 56-year-old female who sustained a gun-shot wound who was surgically rehabilitated with a free fibular flap ten years prior to prosthodontic presentation requiring dental rehabilitation.

Results: There are considerable differences in patient-centred outcomes when a multidisciplinary approach to therapy is undertaken. Rehabilitative complications encountered with unplanned microvascular surgery require ingenuity and compromise to aid in the aim of achieving a satisfactory outcome.

Conclusions: While treating a disease or wound is of paramount importance, a prosthodontic outcome must be visualized before embarking on surgery that may potentially compromise the patient’s quality of life.

2

IMPLANT INSTALLATION IN MAXILLOFACIAL RECONSTRUCTION USING SURGICAL DESIGN AND SIMULATION

Idris, Sherif *, Logan, Heather(1), Barber, Brittany*, Murphy, Russell*, Wolfaardt, Johan*(1), Osswald, Martin*(1), Nayar, Suresh*(1), Biron, Vincent*, Côté, David*, Ansari, Kal*, Harris, Jeffrey*, O'connell, Daniel*(1), Seikaly, Hadi*(1)

*University of Alberta, Edmonton, Alberta, Canada (1)Misericordia Community Hospital, Edmonton, Alberta, Canada

*Division of Otolaryngology – Head and Neck Surgery, Department of Surgery (1) Institute for Reconstructive Sciences In Medicine
Edmonton, Alberta, Canada

Keywords: maxillofacial reconstruction, fibula free flap, surgical design and simulation

Purpose/Aim: Surgical design and simulation (SDS) involves utilizing patient imaging to perform preoperative virtual planning through the use of advanced digital technologies. With SDS, anticipated surgical

defects can be preoperatively planned in a virtual environment. Additive design and manufacturing (ADM) models and intraoperative surgical guides are then produced to guide the installation of osseointegrated dental implants in a staged reconstruction. The purpose of this study was to evaluate the accuracy of planned versus actual dental implant spatial positioning in prefabricated vascularized fibula free flap (PVFFF – Rohrer Technique) maxillofacial reconstruction using SDS.

Materials and Methods: A prospective review of 9 patients who underwent PVFFF maxillofacial reconstruction using SDS were evaluated. The surgical procedure was divided into three stages. The first stage involved the installation of dental implants in the fibula to allow for osseointegration. During this stage, the preoperative virtual plan was used to produce ADM drilling guides that were used to spatially position the dental implants in the fibula. At the second stage, patient-specific ADM cutting guides were used to prepare the resection site in the jaw and to osteotomize the fibula. The fibula segment(s) were then connected to the dental prosthesis by way of the implants. The 3-D construct of the fibular segments and dental prosthesis were, with an ADM transfer template, spatially positioned in the planned jaw resection site. Each patient's postoperative CT scan was registered to their preoperative SDS plan. The accuracy of spatial positioning of the osseointegrated dental implants was measured by calculating the deviation of the planned implant positions from the actual implant positions in the X (medial/lateral), Y (anterior/posterior), and Z-axes (superior/inferior).

Results: Nine patients requiring secondary maxillomandibular reconstruction met inclusion criteria and agreed to undergo the procedures. Six of the nine patients in the study have completed treatment at the time of reporting. Five patients had maxillectomies and 1 had a mandibulectomy. An average of 4 implants were installed in the fibula during the first stage of the procedure and a total of 23 implants were assessed and compared to the preoperative SDS plan. The average deviation between the preoperatively planned and the postoperative implant positions was 1.5 mm in the X, 2.0 mm in the Y, and 1.8 mm in the Z-axes.

Conclusions: This study shows that it is possible to achieve clinically valuable spatial positioning using SDS and ADM devices in the installation of osseointegrated dental implants in PVFFF maxillofacial reconstruction for select patients. This work is directed at improved functional outcomes.

3

PREDICTORS OF DELAYED DECANNUATION AFTER HEAD AND NECK CANCER SURGERY

Isaac, Andre *, Zhang, Han; O'connell, Daniel; Harris, Jeffrey; Biron, Vincent; Seikaly, Hadi
University of Alberta
Division of Otolaryngology-Head and Neck Surgery, Department of Surgery
Edmonton, Alberta, Canada

Purpose/Aim: Tracheostomy is commonly required at the time of head and neck cancer resection (HNC-R) as a temporary airway solution. A significant number of patients however will fail to decannulate after the surgery, delaying recovery as well as speech and swallowing rehabilitation. Despite the frequent and significant nature of this complication, no study has examined the variables that are predictive of failed decannulation in HNC-R patients. The purpose of this study was to determine the variables that are predictive of failed and delayed decannulation in patients who underwent HNC-R

Materials and Methods: Design: Retrospective cohort study

Setting: Tertiary care Otolaryngology-Head and Neck Surgery referral centre

Patients: All patients who underwent HNC-R with immediate free tissue transfer reconstruction and tracheostomy at the time of surgery who had failed or delayed decannulation between 2011 and December 2015 were included. Failed decannulation was defined as persistent tracheostomy at the time of discharge, or persistent tracheostomy at 60 days post-surgery. Delayed decannulation was defined as persistent tracheostomy at 10 days post-surgery. Controls were matched for age, sex, time of surgery, surgeon, and TNM stage. Patients were excluded if they underwent surgery for a non-malignant indication, had previous HNC-R, underwent a laryngectomy, died before 60 days after surgery, or had a tracheostomy prior to head and neck resection.

Main Outcome Measures: Variables were analyzed to determine predictors of failed and delayed decannulation. Pre-operative variables included Charlson Co-morbidity Index, ECOG Score, pre-albumin level, obesity, p16 status, smoking status, and pack years. Intra-operative variables included extent and site of resection, and type of reconstruction. Individual odds ratios for risk of failed decannulation were calculated for each variable. Multivariable Cox Regression Analysis was used to determine predictors of days to decannulation.

Results: 21 consecutive patients with failed decannulation and 41 patients with delayed decannulation were included, along with 96 controls. Univariate analysis demonstrated that total glossectomy (OR=56.315 [8.402-180.126]), total base of tongue resection (OR=32.035 [3.410-99.980]), anterolateral thigh flap (ALTF) reconstruction (OR=2.139 [1.296-9.633]), smoking at time of surgery (OR=4.166 [1.362-12.739]), and pack years (OR=1.061 [1.022-1.116]) were associated with failed decannulation. Cox Regression Analysis showed that total glossectomy (Exp(B)=15.837 [1.949-128.679]), ALTF reconstruction (Exp(B)=8.439 [2.435-29.620]), and smoking status (Exp(B)=2.970 [1.617-5.456]) were independent predictors of days to decannulation.

Conclusions: Patients with total glossectomy defects after HNC-R, and those that continue to smoke to the time of surgery are at increased risk for delayed and failed decannulation. Patients should be appropriately counseled about these risks, and effort should be made to address the modifiable risk factors.

4

MAXILLOFACIAL PROSTHETIC LITERATURE IN PROSTHODONTIC JOURNALS: A 10-YEAR OBSERVATION

Elbashti, Mahmoud *, Said, Mohamed, Aswehlee, Amel , Hattori, Mariko , Sumita, Yuka, Taniguchi, Hisashi
Tokyo Medical and Dental University
Maxillofacial Prosthetics
Tokyo, Japan

Purpose/Aim: Although the prosthodontic literature in general has been well reviewed in many previous studies, yet maxillofacial prosthetic literature has not been investigated. The purpose of this study was to investigate trends of recently published maxillofacial prosthetic literature in term of published articles productivity, classification, collaboration, and the geographic distribution.

Materials and Methods: Articles published in the five top impact factor prosthodontic journals; The Journal of Prosthetic Dentistry (JPD), Journal of Prosthodontic Research (JPR), International Journal of Prosthodontics (IJP), Journal of Prosthodontics (JP), and Journal of Advanced Prosthodontics (JAP) were hand-searched and reviewed from January 2006 to December 2015. Editorial, letter to the editor, book reviews, and abstracts were excluded from the search. For each published article, productivity, classification, collaboration, and the geographic distribution were recorded. Descriptive analysis was used to present the data.

Results: Among 4034 articles screened, a total of 355 (8.80%) maxillofacial prosthetic articles were included. The highest published articles were in JPD (43.09%) followed by JP (30.14%). Clinical reports were the most published articles in the last 10-year (51.89%) followed by original research (29.29%) and technique (16.90%). More than three quarter of articles were published by single country (78.88%) while 12.11% by multi-countries collaboration. The USA, India, Turkey, and Japan were found to be the most productive countries in number of publications (26.19%, 18.87%, 8.16%, and 6.47%, respectively).

Conclusions: Across the five prosthodontic journals, clinical report articles were the main publication in the maxillofacial prosthetic literature. This observation has highlighted that more productivity and collaboration in original research articles are needed.

5

IMPLANT RETAINED PROSTHETIC REHABILITATION AND SOFT TISSUE MANAGEMENT

Vosselman, Nathalie *, Reintsema, Harry

University Medical Center Groningen, the Netherlands

Dept. Oral and Maxillofacial Surgery and Center for Special Dental Care Groningen
Groningen, Netherlands

Keywords: soft tissue management, implant, free flap reconstruction

Purpose: To address soft tissue management issues in patients treated for tumors of the floor of the mouth, including implant placement in combination with free flap reconstruction.

Introduction: Free flap reconstruction after tumor resection in the mandible region sometimes results in challenging soft tissue configurations, especially for implant retained prostheses. When a marginal mandibular resection area needs to be covered with flap tissue, the discrepancies in implant level and tissue thickness can be very unfavorable and makes it hard or even impossible to fabricate functional prostheses. Soft tissue contouring (creating vestibules) in combination with debulking of the flap in a second stage surgery can be of help. However, second stage surgical management of flaps, in particular after radiotherapy, brings risks of flap loss.

Clinical Report: A 54-year-old male underwent a local resection including a marginal mandibulectomy and soft tissue reconstruction with a radial forearm flap (RFF) of a pT1N1 squamous cell carcinoma in the floor of the mouth in 2013, including placement of 2 implants in the lateral part of the undisturbed mandible. No radiotherapy was needed. Initial prosthetics were unsuccessful due to lack of neutral zone based on soft tissue bulk and fibrosis. Tongue function was severely impaired. Careful soft tissue reduction of the RFF in combination with added implant placement in the resected mandible area followed. Secondary prosthetic treatment needed individual designed posts and healing abutments of 12 mm length. Impression taking was possible and overdentures were made. Meanwhile using the new healing abutments helped us to manage the soft tissue and prevent overgrowth of the implants.

Result: The use of custom-made elongated posts and abutments enabled us in this case to manufacture a two-piece superstructure and an implant-retained overdenture. Wearing the prosthesis gave a positive influence on the volume of the flap which results in less tissue height. Tongue function over time improved. Although full rehabilitation is established, it is uncertain how the peri-implant tissues will behave in time.

Conclusion: Soft tissue management can be a great challenge for the prosthodontist, when dealing with bulky reconstruction tissues. Loss of buccal and lingual vestibules cause reduction of the neutral zone, diminishing prosthetic possibilities and interfere with tongue function. Prosthetics driven flap reduction is more often needed, but cannot be guaranteed in many cases. Implant planning before oncology treatment should take this into account.

6

Invited Speaker

ADVANCED JAW RECONSTRUCTION: THE DIGITAL REVOLUTION AND EVOLUTION

Wolfaardt, Johan *

Division of Otolaryngology Head and Neck Surgery, Department of Surgery, Faculty of Medicine and Dentistry, University of Alberta/ Institute for Reconstructive Sciences in Medicine (iRSM), Caritas Health Group/Alberta Health Services/University of Alberta Edmonton, Alberta, Canada

Jaw reconstruction has been transformed by the introduction of microvascular reconstruction followed by advanced jaw reconstruction techniques such as the Rohner approach with prefabricated vascularized flaps. The introduction of digital technologies for surgical design and simulation (SDS) as well as for additive manufacture (AM) of models, guides and other tools has revolutionized jaw reconstruction. The digital technology used in jaw reconstruction has much of its origins in industrial rapid prototyping software applications and additive manufacturing. Digital technologies have become subject to clinical drivers but continue to be influenced by industrial drivers. The use of digital technologies in surgery has impact on cost of care structures that are not well understood in terms of health technology assessment or health economics. Digital technologies have also had profound influence on clinical team structure and team behaviours as well as the workflow and patient care path. The presentation will consider the factors that digital technologies have brought to affect care delivery in advanced jaw reconstruction.

7

Invited Speaker

HEAD AND NECK CANCER- GLOBAL PROBLEM AND INTERNATIONAL SOLUTION

Reshetov, Igor *

**Professor, Executive Council IFHNOS
Moscow, Russia**

Head and neck cancer is actually problem in all the World. Every year's statistics show nearly 1 million primary patients with this diagnosis. Geography of diseases covered all regions, included rich and development countries. Main task in Head & Neck cancer is early detection. Because more of cases in time of first visit already had 3-d and 4-th stages. This is main reason for scientific and professional activity in specialists of Head & Neck pathology. International Federation of Head & Neck Oncology Societies (IFHNOS) is unique platform for realization of Global projects in scientific, educational and professional activity. IFHNOS associated more than hundred organizations from all parts of the World. Main topics in IFHNOS activity are:

In Scientific field – every 5 –years International Congress. The last, 5-th had in New York in 2014 y. Attended near 3 thousand specialists. IFHYNOS to support National Conferences of H&N in associated organizations.

In Educational field – IFHNOS created the World Educational Course. Already performed 4-th school. The main idea included in cover of 8-9 countries by International team of best opinion leaders in short time – one month with program of lectures and master classes. Science 2015 y. started permanent on line fellowship in H&N surgery and oncology

In Professional activity – Open window for all questions in practice of H&N by web site – www.ifhnos.org. The idea early diagnostic and treatment of cancer of the H&N realized in form of screening action named as Day of H&N Cancer or Week of early diagnostic of H&N cancer. In last company main activity showed European Society of Head & Neck.

IFHNOS is perspective project for evolution all directions in H&N pathology and open for collaboration.

8

IMPORTANCE OF ORAL CANCER SCREENING BY PRIMARY CARE PROVIDERS

Wee, Alvin *

**Va Nebraska Western Iowa Health Care System
Surgery – Dental Service
Omaha, Nebraska, United States**

Keywords: Oral cancer, screening, medical education

Purpose/Aim: To compare the percentage of patients who had an oral cancer examination (OCE) by their primary care provider (PCP) in medical clinics participating in a web-based education with poster reminder intervention to that of patients in control clinics. To also determine the effects for PCPs in medical clinics participating in the web-based education with poster reminder intervention as compared to those in control clinics regarding: (a) Index of knowledge of oral cancer risk factors (DiagOC) and (b) Index of knowledge of oral cancer diagnostic procedures (RiskOC).

Materials and Methods: Six medical clinics were recruited to participate in this study and randomly assigned to an intervention group or a control group. PCPs (physicians, physician assistant and advanced practice registered nurse) took a pretest; two weeks later, they participated in the web-based educational program, including a posttest (intervention group) or took a posttest only (control group). In each clinic, one week following completion of the PCPs' posttests, 94 patients were recruited to complete a one-page survey.

Results: The intervention clinics were found to be a significant factor for the PCPs to perform patient OCEs, after controlling for significant covariates, i.e., age, main reason for clinic visit, OCE for patient in the past year, clinic's mean DiagOC score and clinic's mean RiskOC score. The intervention also resulted in the PCPs increasing their pretest to posttest RiskOC scores.

Conclusions: The use of intervention has the potential to increase PCPs' short-term knowledge and to increase the frequency of PCPs' routine, nonsymptomatic opportunistic OCE on patients.

9

INFORMED CONSENT UNMASKED: PATHWAYS IN OBTAINING CONSENT IN HEAD-NECK ONCOLOGY

**Feenstra, Enne *, Linden Van Den Heuvel, Chiquit
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Centre for Dentistry and Oral Hygiene / Dept. Oral Maxillofacial Surgery
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Keywords: Informed consent; communication; head neck cancer

Purpose/Aim: This study is part of a larger study that investigates the way patients with a tumour in the head neck region consent to curative treatment and how this decision is valued through time. The aim of the sub study is to give a detailed analysis of the way the initial consent to treatment is established.

Materials and Methods: Intake visits and the discussion of the initial treatment proposal were videotaped. Six patients were included in the sub study. Ad verbatim transcripts combined with video were coded using qualitative content analysis. Extra attention was given to the conversational interaction between patient and caregiver.

Results: The initial analysis yielded 21 codes. These codes could be combined into three thematic groups. These thematic groups show pathways that guide the choice of the patient to consent to a proposal for treatment. The first pathway consists of subtle technics that affirm the patients' dependence of the caregiver. The second pathway consists of gradually reducing the treatment options to the patient. This pathway also seems to be shaped by the unquestioned assumption that medical treatment aimed at curation is what patients want. The choice of what treatment should be given then depends largely on medical parameters. The third pathway comprises subtle technics that induce the patient into consent. A formal (shared) decision moment was lacking in the process. Both patients and caregiver though believed that the decision to treatment met the conditions of an informed consent. Discussion of the findings with the physicians that were involved showed that treatment protocols have a directional influence on the options offered to the patients and also shape the way the treatment proposal is offered.

Conclusions: The analysis gives a deeper understanding into how the process of consent to treatment in a protocol treatment environment works. The choice of the patient seems to be influenced by the way the conversation is held and the emphasis onto certain aspects by the caregiver. The results can be used to focus attention on to the implicit driving forces that influence and possible corrupt the informed consent process. By discussing the pathways caregivers could be trained to raise awareness of these caveats in their communication with patients.

10

PATIENT CENTERED OUTCOMES IN HEAD AND NECK CANCER

Mendez, Adrian *, Eurich, Dean; O'connell, Daniel; Cote, David; El-Hakim, Hamdy; Rieger, Jana; Seikaly, Hadi
University of Alberta, Dept. of Surgery
Edmonton, Alberta, Canada

Keywords: patient centered outcomes, functional outcomes, patient reported outcomes

Purpose/Aim: The objective of this study is to create and validate the first instrument to measure the main functional areas of concern of the head and neck oncology patient.

Materials and Methods: This is a three phase qualitative study. In phase I, ten head and neck cancer patients were interviewed. Function domains of importance were identified using open ended questioning and grounded theory. During phase II, head and neck cancer patients were presented with the findings of phase I and asked to rank the functional domains in terms of importance. A modified Delphi technique was employed to achieve consensus of the four most important functional domains. Finally, the itemized PRO was created (Edmonton-33) in phase III with expert and patient input. Included items were identified from the literature. Cognitive interviewing with head and neck cancer patients was completed to ensure comprehension.

Results: 25 head and neck oncology patients participated in the study. Three head and neck surgeons, one speech-language pathologist, and one clinical epidemiologist were involved in the development of the Edmonton-33 during phase III. The final version of the Edmonton-33 was a 33-item, Likert-type scale containing the domains of swallowing, speech, chewing, and xerostomia. Included items were sourced from the literature, patient generated, and expert stakeholder generated. Cognitive interviewing resulted in the modification of five items to ensure comprehension.

Conclusions: The Edmonton-33 is the first patient-reported outcome instrument designed to assess functional outcomes in head and neck oncology patients and could serve as a single comprehensive measure for functional outcomes. A phase IV validation study is currently underway.

11

HEAD AND NECK CANCER MANAGEMENT: A HAZARDOUS PROFESSION?

Thokoane, Meriting *, Owen, Peter
University of the Witwatersrand
Department of Oral Rehabilitation
Johannesburg, Gauteng, South Africa

Purpose/Aim: To establish whether there is a difference in the level psychiatric difficulties among prosthodontists who provide care for head and neck cancer patients, and those who do not.

Materials and Methods: The number of registered prosthodontists in South Africa at the end of 2015 was 83, while the South African population was estimated to be 54,9 million. Of the 83 specialists few are involved with providing care for cancer patients, and this care is mainly reserved for those in academic institutions. All prosthodontists at all South African dental schools will be asked to complete self-report questionnaires, this group of specialists will comprise of those who do not treat cancer patients and those who do. The non-cancer clinicians will be used as a control group for stresses generic to the profession.

The two questionnaires include the Maslach Burnout Inventory (MBI) and the General Health Questionnaire (GHQ-12), and have been used in similar studies to determine the mental health of cancer clinicians (Ramirez et al, 1995; Asia et al, 2007; Shanafelt et al, 2014). MBI assesses the three components of burnout (emotional exhaustion, depersonalization, and personal accomplishment) and GHQ-12 was designed to screen for non- psychotic psychiatric morbidity.

Results: The presence of burnout and psychiatric morbidity is said to be higher among cancer clinicians (Asia et al, 2007; Shanafelt et al, 2014) because of the necessary prolonged interaction with patients who are suffering psychically and emotionally. The results will be compared to that in the medical literature, and depending on the severity of the condition consider debriefing sessions and counselling as routine for all cancer clinicians.

Conclusions: Work-related stress is present among the general working population at a rate of 18%, and for medical professionals the stress rates are 28% (Govender, 2012); yet for cancer clinicians the reported stress rates are reported to be above 40% (Shanafelt et al, 2014). The differences are significant and warrant intervention, as this condition inadvertently impacts on patient treatment and patient care.

12

CAMPAIGN TO PROMOTE AWARENESS OF MHN CANCER IN IRELAND

MacCarthy, Denise *, McAlister, Conor; O'Sullivan, Eleanor
Dublin, Ireland

Keywords: MHN Cancer, awareness, early detection

Purpose/Aim: A campaign to promote awareness of mouth, head and neck cancer in Ireland began in 2010. This campaign was initiated primarily by a group of cancer survivors, the Irish Dental Health Foundation, Irish Cancer Society and the university dental schools in Cork and Dublin. The first Mouth Cancer Awareness Day (MCAD) was held at the Cork and Dublin Dental University Hospitals in September 2010. In order to make the free examinations more accessible throughout the country, the Irish Dental Association became a partner in the campaign in September 2011. The objective was to further increase awareness in the general public and the dental profession.

Materials and Methods: On Mouth Cancer Awareness Day, mouth cancer check-ups and information are provided free of charge in dental practices around Ireland. The two Dental Hospitals, as well as providing check-ups, have provided support and immediate follow-up for any cases considered to be urgent by the examining dentists.

Results: To date, 70% of dental practices countrywide have offered free mouth cancer examinations in addition to the two dental schools in 2010, '11, '12 and '13. As a result of this campaign, we have established a clear referral pathway. Since the campaign began, approximately 20,000 free examinations have been carried out and 22 cases of oro-pharyngeal cancer have been detected. Awareness of this cancer increased in the general public and in the dental profession.

Conclusions: Mouth, Head & Neck Cancer Awareness Ireland (MHNCAI) has promoted increased public and professional awareness of the warning signs of this disease, stressing the importance of early referral for these patients. We, of course, stress that a check for changes in the oral soft tissues is provided at every dental visit but increased awareness in the public arena means that individuals seek help early. Self examination is also encouraged and supported. Early detection of mouth cancer will result in better treatment outcomes - early detection saves lives. The challenge now is to increase awareness in the medical and other healthcare professions. The favourable media response, which has been the oxygen of this campaign, has been a very important part of the success of this initiative. The partnership is convinced that an awareness day, rather than a week or a month, has been a key factor in attracting media coverage.

13

Invited Speaker

PRE-RADIATION ORAL INTERVENTION DECISION-MAKING

Chambers, Mark S. * Beadle, Beth M.; Weber, Randal S.
MD Anderson Cancer Center, Department of Head and Neck Surgery
Houston, Texas, United States

Pre-radiation oral assessment and intervention can enhance quality of life and functional outcomes with decreasing economic burden to the cancer patient. A substantial number of patients with oral cancer present with significant periodontal disease and oral contamination prior to radiation therapy. If left unattended, diseased oral tissues including dentition may cause serious infection after oncologic therapy. As a result, pre-radiation dental evaluation has become an integral part of care offered to those patients scheduled to receive concomitant chemo-radiation therapy for head and neck tumors. This presentation presents the role of pre-radiation dental decision-making with current therapeutic options in a comprehensive cancer center and algorithms used to determine oral surgical intervention and management strategies prior to initiation of definitive radiation treatment.

14

Invited Speaker

DENTAL REHABILITATION OF ORAL CANCER PATIENTS

Kansky, Andrej *
Ljubljana University Medical Centre
Maxillofacial and Oral Surgery
Ljubljana, Slovenia

Purpose/Aim: Slovenia has a high burden percentage/number of head and neck cancer. Patients are in most cases treated with surgery followed by radiation therapy. Five-year survival is over is good – over 70%, but the problem remains the quality of life. With appropriate surgical techniques of primary facial reconstruction, we achieve functionally and aesthetically good results. After surgical treatment, most patients can breathe, swallow and talk, but the biggest complaint is chewing and eating because of the edentulous jaws.

Materials and Methods: Five years after treatment we retrospectively reviewed medical records of 150 patients, with a diagnosis of head and neck cancer. We assessed percentage of survival, condition of teeth before treatment, condition of teeth after the treatment and after five years. We evaluated the appearance, speech, swallowing, the way of dental rehabilitation and patient's overall satisfaction.

Results: Dental rehabilitation is in many cases problematic and a big challenge for the dentist, due to deformation, lack of hard tissue support and overwhelming soft tissues. Most of the patients can't wear dentures at all, some of them wear removable dentures and a small percentage can wear implant born dentures. After extensive treatment, there are practically no patients, that can keep healthy teeth.

Conclusions: Advanced surgical and prosthodontic techniques have expanded the rehabilitation options, but also opened new questions and problems. The decision of what is the best solution for our patients should be carried out individually after all the possible options have been assessed.

15

Invited Speaker

3D DIGITAL PLANNING IN MIDFACIAL SURGERY

Uglešić, Vedran*

In the lecture will present history of the midface reconstruction based on the experience of Maxillofacial department, University Hospital Dubrava from 1993 when the first scapula flap was performed for the Brown 4 maxillary defect to the present days. Presentation will include reconstruction of the midface with composite flaps based on subscapular artery, titanium mesh reconstruction joint with microvascular flaps and 3D method for planning resection and reconstruction of the different sizes of the midface based on the Browns classification. Pluses and minuses of each methods will be discussed together with possible future development of the midface reconstruction

16

Invited Speaker

TUMORS IN CBCT IMAGING: PROSPECTS IN DIAGNOSIS AND OPERATIVE PLANNING

Mudrak, Jörg *, °°Dinu, Christian, Kärcher, Daniel

Private Clinic °° Resident at the Department of Cranio and Maxillofacial Surgery at Klinikum Oldenburg, Germany Rahel-Straus-Straße 10 26133 Oldenburg Clinic for Oral and Maxillofacial Surgery and Plastic Surgery, Direktor: Pd Dr. Dr. Lei Li

Oral Surgery °° Clinic for Oral and Maxillofacial Surgery and Plastic Surgery, Direktor: Pd Dr. Dr. Lei Li

Ludwigsau, Hessen, Germany

Keywords: CBCT, Tumor, Oral cancer

Case Presentation: Imaging is an important part in the diagnosis of oral – maxillo - cancer.[1] The options of preoperative imaging include plain radiography, computed tomography and magnetic resonance imaging.[2] CBCT is a, comparatively, new imaging modality in the detection and preoperative planning of oral cancer. The use of CBCT to image oral cancer is not well reported in the literature and the clinical experience is very poor.

The intention of this presentation is to show the clinician the options in using CBCT imaging in the detection of oral – maxillo – facial tumors and the postoperative follow up of maxillary and mid face surgery.

References:

1. Linz, C., et al., Performance of cone beam computed tomography in comparison to conventional imaging techniques for the detection of bone invasion in oral cancer. International journal of oral and maxillofacial surgery, 2015. 44(1): p. 8-15.

2. Closmann, J.J. and B.L. Schmidt, The use of cone beam computed tomography as an aid in evaluating and treatment planning for mandibular cancer. Journal of oral and maxillofacial surgery: official journal of the American Association of Oral and Maxillofacial Surgeons, 2007. 65(4): p. 766-771.



17

Invited Speaker

CAPTURING MEANINGFUL PATIENT DATA FOR TRANSLATION INTO IMPROVED HEALTH OUTCOMES

Rieger, Jana *

University of Alberta / Institute for Reconstructive Sciences in Medicine
Edmonton, Alberta, Canada

Purpose/Aim: Treatment of patients with defects of the head and neck region requires a team approach. In some instances, this will involve an interdisciplinary team where different specialties work together through one treatment centre, such as an academic unit within a hospital. For others, treatment will occur in a multidisciplinary fashion, where treatment will occur at several facilities and may involve both academic and private units. Regardless of team structure, there is a challenge in knowing what will be the most appropriate patient outcomes to collect. Within the head and neck realm, several steps have been taken of recent to determine the most appropriate outcome measures. These can involve both objective and patient-reported outcomes. In this presentation, the initiatives that have been taken to determine the best outcome measures will be reviewed. In addition, we will delve into the relative benefits of clinician-based and patient-based measures, and discuss the future of mapping a frame work for when to use one or the other. Finally, some experiences from the functional outcomes program at iRSM will be reviewed to understand how functional outcomes related to surgical resection and reconstruction have been collected in a 'living lab concept' and translated into practice.

18

QUALITY OF LIFE OF MAXILLECTOMY PATIENTS RESTORED WITH OBTURATOR PROSTHESES

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Keywords: maxillectomy, obturator, QOL

Purpose/Aim: Maxillary defects resulting from tumor ablative surgery present functional and esthetic problems relating to the loss of important structures. The most common rehabilitative approach is the obturator prosthesis that in most cases can restore the patient to a normal or near normal level of function. The aim of this study was to assess the overall functioning of the obturator prosthesis, as well as the effect of specific sociodemographic and treatment variables on the quality of life (QOL) in maxillectomy patients.

Materials and Methods: The QOL of eighty patients who underwent maxillectomy and prosthetic rehabilitation at "Evangelismos" Hospital, was assessed using 3 questionnaires: European Organization for Research and Treatment of Cancer Core (EORTC-QLQ-C30), EORTC Head and Neck 35 (HN35), and Obturator Functioning Scale (OFS). Spearman rank order correlations were used to examine the interrelationship among the OFS, and the domains-subscales of EORTC-QLQ-C30 and HN35. Kruskal-Wallis one-way ANOVA on Ranks was employed for correlations between the OFS scale items, subscales, and total scores, as well as the domains and subscales of EORTC QLQ C30 and HN35 with the sociodemographic and treatment variables. All the analyses were performed at $\alpha=0.05$ level of significance (SPSS Inc., Chicago, IL, USA).

Results: The global quality of life was 60.9% (SD=20.4), and the total OFS score 1.81 (SD=0.59). There was a significant positive correlation between the total OFS score, the physical, emotional, social, role, and cognitive domains of the EORTC-QLQ-C30 and the global quality of life ($p<.001$). Functioning of the obturator, speech and swallowing impairment, gender, dissatisfaction with appearance, avoidance of social contact-eating, and the existence of pain had statistically significant effect on QOL ($p<.005$). Postoperative

radiation therapy (RT) had statistically significant effect on OFS total and separate OFS subscales (saliva, dissatisfied with appearance, chewing difficulties, difference in voice), as well as on single items (pain, saliva, nausea) and the social and role functioning domains of the EORTC-QLQ-C30 and HN35 ($p < .001$). The surgical approach (intraoral vs. Weber-Ferguson extraoral incision) had statistically significant effect on OFS total and separate OFS subscales (saliva, avoided social events, dissatisfied with appearance, nasal leaking, nasal speech, difficulties being understood, difference in voice, numbness of the upper lip, appearance of upper lip), as well as on single items (pain, saliva), the social, the functioning domains and the global quality of life of the EORTC-QLQ-C30 and HN35 ($p < .001$). The size of the lesion, lymph nodes metastases, and the extend of hard-soft palate resection had a statistically significant effect on subscales of the OFS but not on the global quality of life ($p < .005$).

Conclusions: Postoperative RT and surgical approach were the strongest variables affecting the QOL in maxillectomy patients. However, a well-functioning obturator prosthesis can significantly improve the QOL of patients with maxillary defects.

19

PROSTHETIC REHABILITATION AND QUALITY OF LIFE: A PROSPECTIVE STUDY

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Purpose/Aim: With 11 316 new cases estimated in France in 2012, the cancers of the oral cavity, the lips, the pharynx and the larynx are situated in the 8th rank of the most frequent cancers and represent 3.2% of the incidental cancers. So, these cancers remain even today a major public health problem.

Objective: The objective of the rehabilitation of the loss of maxillary substance is to compensate for the surgical aftereffects and so to limit the esthetic, functional and psychological echoes. This rehabilitation can be made by maxillofacial prosthesis or by surgical reconstruction; it is sometimes possible to combine both technics. The objective of this study is to analyze the impact of an immediate prosthesis rehabilitation on the quality of life of the patients.

Materials and Methods: This study is realized in the department of odontology of the hospital of the Pitié Salpêtrière in Paris. The patients are informed about the conditions of their participation in the study (form of consent, delivery of an initial questionnaire (EORTC QLQ-H* N_{35} , DHI, VHI) and pre-operative recording). The prosthesis is adapted during the surgical time of resection. The same questionnaire completed by 11 questions relative to the immediate prosthesis is handed to 7 day then 1 post-operative month. 7 patients were included in this study.

Results: At first, we present individually the scores obtained in the standardized used questionnaires : EORTC QLQ-H* N_{35} , whose score varies between 35 and 140
Gulp Handicap Index (DHI), the score of which varies between 0 and 120
Voice Handicap Index (VHI), whose score varies graft 0 and 120.
This allows a comparison of the data obtained with those present in the literature.
Besides, it is interesting to individualize also the questionnaire developed in the thesis of SIMON P. in 2002, to estimate the relevance for a possible use in future studies. His score varies between 0 and 285 (questionnaire n°1) or 395 (questionnaires n°2 and 3).
For all the questionnaires, the most low scores correspond in the best quality of life.

Conclusions: The results of the study which we led suggest as the others studies in the literature, a profit of the immediate obturating plates in terms of quality of life and public health

20

COSTS OF TWO STRATEGIES FOR IMPLANT PLACEMENT IN ORAL ONCOLOGY

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Keywords: cost-benefit analysis, dental implants, head and neck neoplasms

Purpose/Aim: Implants are widely used in the prosthodontic rehabilitation of healthy edentulous patients, but can also be used to rehabilitate edentulous oral cancer patients. Implant placement can be performed during ablative surgery (DAS) or postsurgery (P). Costs and clinical outcome of both protocols are unclear.

Materials and Methods: All edentulous patients who underwent curative tumor surgery in the years 2007-2009 at the Radboud University Medical Center (RUMC) and UMC Utrecht (UMCU) were included. Patients at the RUMC received perablative implants when possible and sensible. At the UMCU, a full conventional denture was fabricated after surgery. When there was a need for an implant-retained overdenture (IOD), implants were placed when feasible after a disease-free period of at least 1 year. Costs (in 2008 €), implant details and clinical outcome were recorded retrospectively up to 5 years after tumor surgery.

Results: Individual costs of implant placement were lower in the DAS protocol (€2171 versus €4079), while implant failure and loading were comparable to the P protocol. In the DAS protocol, more patients received IODs (62% versus 17%) and more patients had functioning dentures (65% versus 47%) which were placed at an earlier stage (291 versus 378 days after surgery). Because IODs were more expensive than conventional dentures, total costs per patient were higher in the DAS protocol (€5275 versus €3986).

Conclusions: Placing implants during ablative surgery lowers the individual costs for implant placement and leads to more patients with functioning dentures, while implant failure and loading are comparable to postsurgery placement.

21

METABOLIC TUMOR VOLUME PROGNOSTICATES ORAL CAVITY CANCER

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Keywords: head and neck cancer, medical imaging, tumor marker

Purpose/Aim: Despite the promise of metabolic tumor volume (MTV) as a risk-stratifying marker, the retrospective design of the initial study limits its generalizability. Therefore, this study sought to validate MTV as a prognostic factor for oral cavity squamous cell carcinoma (OCSCC) treated with primary surgery within an independent data set.

Materials and Methods: The validation data set consisted of 42 patients diagnosed with OCSCC between 2008-2012. The original cohort consisted of 80 patients. MTV and SUVmax were calculated for the primary tumor and nodal metastasis separately, as well as combined. Before statistical analysis, MTV and SUVmax values were divided into intertertile thirds to allow for intergroup survival analysis. Validation analysis was conducted on the validation data set alone. Data from both cohorts were then combined (n=122) to increase statistical power.

Results: An increase in combined MTV of 17.5 cm³ was associated with statistically significant increase in risk of disease recurrence (HR = 19.2, p<0.001) and death (HR = 9.2, p<0.05). Combined SUVmax failed to

predict overall (HR=1.0, p>0.05) and disease-free survival (HR=1.0, p>0.05). Increase in the MTV of the primary tumor was associated with an increase in the risk of disease recurrence (HR=21.7, p=0.0001) and risk of death (HR=7.0, p=0.0001), while increase in the MTV of the locoregional neck metastasis was not (p>0.05). An MTV cutoff value of greater than 10.2 cm³ was found to significantly affect survival.

Conclusions: Due to the reproducibility of MTV findings, this study validates MTV as an independent prognostic factor for OCSCC treated with primary surgery.

22

Invited Speaker

PREVENTION AND TREATMENT OF ACUTE AND LATE COMPLICATIONS OF RADIATION THERAPY IN HEAD AND NECK CANCERS

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Performed as the only treatment modality or in combination with surgery or chemotherapy, radiation therapy has resulted with a significant increase in cure rates for head and neck malignancies. As radiation can damage normal as well as cancer cells, numerous side effects can develop during or after completion of the treatment, affecting the patient's condition and quality of life. Radiation therapy is often compromise between tumor control and the damage of normal tissue. Based on the usual time of their occurrence, radiation induced side effects can be divided into two groups: early or acute side effects that develop during or shortly after treatment and in the treatment of head and neck cancers affecting skin, mucosa, taste and salivary glands, and late side effects that develop months or years after the end of radiation therapy, affecting salivary glands, teeth, bone, muscles and skin. The degree, progression and irreversibility of these side effects are related to the radiation dose, dose fractionation, the volume of healthy tissue included in the geometry of radiation beams, combined treatments, patient's age and clinical condition, healing capacity of the exposed epithelial cells, the degree of hypovascularity and hypocellularity of tissues. By use of modern radiotherapy technology and techniques of radiation it is possible more precisely to deliver the high dose of radiation to the tumor and to minimize the damage of healthy tissues. Also, it is essential that a multidisciplinary approach be used for implementation of management protocols before, during and after cancer treatment in order to prevent or at least decrease the incidence and severity of numerous radiation induced side effects. Multidisciplinary oncology team that include oncologist, oncology nurses, experienced dentist, as well as social workers, dieticians and related health professionals can often achieve highly effective outcomes relative to complications of radiation therapy in head and neck cancer patients. Care should be both preventive and therapeutic to minimize risk for local and associated systemic complications. Measures should be directed to reduce incidence and severity of dermatitis, oral mucositis, improve infection management, protect salivary gland function and minimize the risk of chronic sequellae. In this presentation, the most common side effects associated to radiation of head and neck tumors are detailed and their prevention or treatment discussed.

23

Invited Speaker

ETHICS AND END OF LIFE CARE

Walter, Sue *

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Johannesburg, South Africa**

This presentation presents the many ethical dilemmas we face in making end of life decisions. An overall global perspective is given within the backdrop of international laws. Advanced directives, voluntary active euthanasia and physician assisted suicide are all discussed with case presentations from different countries. The current move in law to legalize assisted suicide in South Africa is addressed.

Clinical practices used in end of life are briefly discussed and debated such as artificial hydration and nutrition, recurrent blood transfusions, repeated use of antibiotics, recurrent correction of hypercalcaemia and the use of chronic medications. Topics such as futility of care, withholding and withdrawing treatment, and terminal sedation are addressed and discussed using real cases.

Friday, May 6

Curative Care Surgery

24

Invited Speaker

CLEFT LIP/PALATE: A PARADIGM SHIFT FOR IMPROVED SURGICAL MANAGEMENT

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Ankara University

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Clefting disorders steadily evolve as an area of research, and clinical investigation. Over the years several cornerstone studies have been published and/or presented in order to optimize the outcome of those patients born with cleft lip and/or palate. Surgical technical approaches, understanding anatomical background, importance of physiological impact of properly reconstructed anatomy are those among for the achievement of a desirable result. Follow up during growth and adolescence period proved to determine a satisfactory management. During primary reconstruction early correction of disrupted anatomy is required in particular the muscles necessitate dissection and reconstruction to their proper insertions. Nasal deformity should be addressed including nasal floor repair. Palatal aspect also requires more than adjusting and closure taking into consideration of their impact in future growth and development of facial structures. Continuation of early intervention before adulthood also dictates early recognition of sequela resulting either from the disorder itself and surgical maneuvers executed as well to avoid major revisions afterwards as much as possible. Hence an overall management of such disorders will be presented.

25

Invited Speaker

SURGICAL MANAGEMENT OF MALIGNANT SALIVARY GLAND NEOPLASMS: REQUESTS AND QUANDARIES

Popovski, Vladimir *

University Clinic for Maxillofacial Surgery

Skopje, Macedonia

Case Presentation: Malignant tumors of salivary glands comprise about 3-4% of all head and neck neoplasm's and they account for approximately 0,1% of all deaths from cancer. The management of such unpredictable malignancy of different sites, and the biological significance through regional anatomical peculiarity and collision with the facial nerve, emphasize the challenge of this surgical entity.

Evaluation designed with comparative study through the fundamental analyze of own clinical material of 126 patients with a histologically proven malignant salivary gland tumor. Comprehensive diagnostic work-up for parotid gland neoplasms was included, followed by consequent choice of radical surgery and reconstructions. The analyze of entire group was concerned on the results delivered from statistical evaluation of data about localization, delay of the symptoms prior surgery, clinical symptoms, tumor extension and comprehension, surgery performed, staging and cumulative survival time. Multivariate analysis showed that tumor stage was a more prognostic variable than tumor grade. The size of parotid mass and local spread were most important factors in staging parotid malignancy and planning the reconstruction concept. The significant correlation of facial nerve paralysis with regional node metastases, increase the indications for aggressive surgery, reconstruction and postoperative radiotherapy for achieving better local control and survival rate.

Conclusions - survival prospects of patients with malignant parotid tumors are mostly determined by its pathological grade and clinical stage. Type of reconstruction must be a part of initial surgical planning.

26

Invited Speaker

INTERCONNECTED NAVIGATION FOR SKULL BASE AND MAXILLARY TUMOR SURGERY

Hammer, Beat *

**Senior Consultant, Cranio Facial Center Hirslanden
Aarau, Switzerland**

A navigation-assisted multidisciplinary network to improve the interface between radiology, surgery, radiotherapy, and pathology in the field of head and neck cancer is described. All implicated fields are integrated by a common server platform and have remote data access in a ready-to-use format. The margins of resection and exact locations of biopsies are mapped intraoperatively. The pathologist uses the numerical coordinates of these samples to precisely trace each specimen in the anatomical field. Subsequently, map-guided radiotherapy is planned. In addition to the benefits of image-guided resection, this model enables radiotherapy planning according to the specific coordinates of the resection defect plus any residually affected sites identified by the pathologist. Irradiation of adjacent healthy structures is thereby minimized. In summary, the navigation-assisted network described grants timely multidisciplinary feedback between all fields involved, attains meticulous pathological definition, and permits optimized coordinate-directed radiotherapy.

27

Invited Speaker

REDUCING MORBIDITY IN HEAD AND NECK CANCER TREATMENT- UTILIZATION OF TEMPLATES FOR HEAD AND NECK RECONSTRUCTION

Futran, Neal *

**Director of Head and Neck Surgery
University of Washington
Seattle, Washington, United States**

Reconstruction of the head and neck defect, particularly those with bony involvement, is critical to restore speech, swallowing, and appearance for our patients. The past 25 years have resulted in an expansion of the range of tissues and recipient vessels which has allowed for an expansion of creativity. This has changed the way that we think about and address the various components of the head and neck. To reduce morbidity and improve results, adding technology is the next essential element. The introduction of CT-based stereolithographic models allowed for an element of pre-operative planning. The ability to simulate the resection permitted anticipation of the defect and pre-operative contouring of reconstruction bars. Advances in computing power and software then allowed use of CT data for three-dimensional virtual surgery. There are now a variety of platforms available to perform virtual surgical planning and computer-aided manufacturing to achieve complex reconstructions with even more refined innovations. Coupled with a decreased operative time and an overall decrease in hospital length of stay, surgical and patient morbidity is reduced, and functional and aesthetic reconstruction is improved. The available platforms and the appropriate place in the head and neck surgeon's armamentarium will be discussed.

28

Invited Speaker

LIMITATIONS OF ABLATIVE TUMOR SURGERY IN THE HEAD AND NECK

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Department of Maxillofacial Surgery
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Keywords: surgery, limitations, reconstruction

Purpose/Aim: The presentations should give an overview of strategies for decision making in difficult oncologic and reconstructive situations. It should answer the following questions: Which diagnostic measures are appropriate? Is the tumor in clear margins resectable? Is Reconstruction possible? Is the patient in adequate general health condition?

Materials and Methods: According to the German Guideline for the diagnosis and treatment of oral cavity carcinomas, the presentations gives recommendations for the treatment of patients with advanced tumor disease, highlighting the importance of an interdisciplinary approach. Depending on the location and the extend of the tumor, anatomic and oncologic criteria are defined which make resection in clear margins impossible. The role of pre- or postoperative radiation therapy is discussed. Moreover, limitations of reconstruction are described in terms of function and quality of life, but also concerning the general feasibility to perform microvascular tissue transfer in the irradiated, vessel depleted neck. Proposals are made how to handle those difficult situations by using innovative techniques of reconstruction.

Results: Having the full scope of a comprehensive interdisciplinary tumor center available, even patients with advanced disease can be considered for curative tumor treatment. The presentation of typical cases shows that the observation of evidence based guidelines is of utmost importance for a reasonable and successful treatment plan.

Conclusions: The resection of a malignant tumor is only possible and justified if there is no systemic disease, if there is a realistic chance to achieve clear margins, if reconstruction is possible and if the patient has fully understood the risks and consequences of the proposed therapy.

29

NEW METHOD FOR RECONSTRUCTION OF MAXILLOFACIAL DEFECTS USING EMBRYONIC PROCESSES

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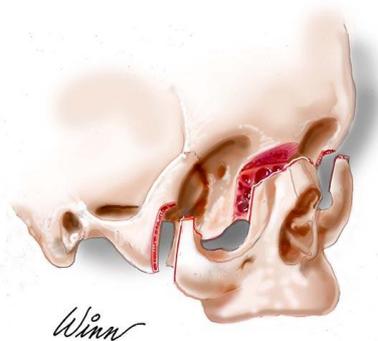
Keywords: rhBMP-2, regeneration, radiation

Case Presentation: Treatment of maxillofacial defects related to oncologic treatment, congenital anomaly, and trauma remain a major challenge for the reconstructive surgeon and restorative dentist. This paper demonstrates a method to improve the patient's response to surgery by designing procedures that exploit embryonic processes. The processes that formed facial structures in the embryo are preserved in the adult and remain active for skeletal maintenance. These mechanisms direct the body's response to injury and surgery. Reconstruction of missing segments of the maxilla and mandible typically involves grafting or composite flap surgery. These cases demonstrate an alternative technique to restore these defects. The theoretical basis for these procedures is described including supporting evidence from recent research findings. Successful use of this technique is demonstrated on challenging clinical situations including reconstructive procedures within irradiated fields and repair of extensive congenital anomalies.

Method: This technique is an adaptation of the protocol described by Egil Harvold (1912-1992) for treatment of mandibular deficiency related to hemifacial microsomia. Surgical design involves assembly of a bone forming construct consisting of specific elements. Following this method, the surgical design must include (1) a source of bone forming cells, (2) establishment of a mechanically stable environment, (3) a source of neuromuscular signaling into the regeneration site, and (4) control of pathologic agents including bacteria. If a local source of bone forming cells was not present, bone morphogenetic protein (rhBMP-2) was used to introduce a cell population into the construction site. Osteotomies and titanium plate fixation were used to create bone forming chambers sheltered from external forces. Neuromuscular signaling was introduced into the bone forming site by repositioning existing, adjacent sources into proximity of the bone forming construct through the use of osteotomies. Management of pathology was through redundant soft tissue closure and antibiotics.

Results: Clinical and radiographic examinations showed all patients to achieve successful repair of the missing bone. The reconstructed sites allowed placement of dental implants when indicated. Implant supported dental prosthetics were placed and followed with clinical examinations and radiographs. Follow-up after 20 years showed the result to be stable long-term.

Conclusion: These cases show that predictable bone regeneration to reconstruct maxillofacial defects can be achieved using bone forming constructs of a specific design. Successful bone forming constructs included (1) a source of cells with bone forming potential, (2) establishment of a mechanically sheltered chamber at the site of the desired bone formation, (3) a source of neuromuscular signaling from a muscle attachment or periodontal ligament apparatus, and (4) isolation from pathology including bacteria. When the essential elements for a bone forming construct are present, skeletal formation and organization can be expected.



30

Invited Speaker

RADIATION THERAPY AND BRACHYTHERAPY IN HEAD AND NECK CANCER TREATMENT

Kolotas, Christos *

31

Invited Speaker

MOTIVATING PATIENTS IN HOME-BASED SWALLOWING THERAPY USING MOBILE HEALTH APPLICATIONS

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Completing swallowing rehabilitation regimens with the intensity prescribed is crucial to long-term functional improvement, yet over half of head and neck cancer patients report not once attempting their swallowing exercises. One of the most common reasons for poor adherence is a lack of understanding of the importance of rehabilitation. However, another factor that has been linked to reduced patient adherence is unfulfilled patient outcome expectations. With a growing reliance on home-based therapy programs and patient self-management of chronic conditions, mobile health devices and applications (apps) have been offered as a means to motivate patients during unsupervised therapies. Behaviour change techniques, such as goal review, social support, and prompts have been successfully used with mobile health apps to improve adherence and clinical outcomes. Adequate design research and a good rationale for selecting these techniques are required for mobile health apps to see successful uptake.

This talk will focus on user interfaces that may be used in health apps to address adherence to unsupervised swallowing therapy and manage patient expectations. Data from the most recent studies completed on Mobil-i-T[®] will be shared, including patient feedback on app design concepts.

32

Invited Speaker

ANCHORAGE OF MAXILLOFACIAL EPITHESES

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The aim of this lecture is to present experiences of the maxillofacial prosthodontics department of Clinic of Maxillofacial surgery, School of Dentistry in Belgrade which was established 1965. Achievements of the last 11 years introducing maxillofacial implants as an anchorage will be presented.

The main problem in maxillofacial prosthodontic is retention of prosthesis. In order to achieve some improvements in the quality of life of these patients the modern concept of maxillofacial prosthodontic has to be established. This concept considers introducing of maxillofacial implants as an anchorage for prosthesis, which significantly improves their stability. However, there are some specifics of maxillofacial implantology: explicit anatomical relation to the intracranial structures; less bone quality and quantity; more compact bone and irradiated tissues.

Lack of the bone sometimes limits use of conventional screw like implants. Also, implant survival in irradiated tissues is much lower. Implantation during the primary surgical procedure is not recommended in patients who will undergo postoperative irradiation. According to the literature, there is no type of implant which could be considered as superior for the implantation in the irradiated bone.

The various implant systems for those purposes are in use. Using of basal osseointegration concept on "disk" implants will be emphasised, particularly because this is, to our knowledge, first time used. Basally osseointegrated (BOI) implants present an excellent solution for maxillofacial prostheses anchorage, particularly in irradiated patients. It is approved that regardless to the disadvantages, implementation of implants as anchorage for maxillofacial prostheses contribute to: significantly improvement of retention and stabilisation of prosthesis; faster adaption of patients to the prosthesis; prosthesis's comfort; better aesthetic; easier maintaining of hygiene. Patients with extraoral maxillofacial prosthesis (auricular, nasal, orbital, facial) will be presented. Using of basal osseointegration concept on "disk" implants will be emphasised, particularly because this is, to our knowledge, first time used at our department.

33

ELECTRICAL STIMULATION FOR PREVENTION OF SHOULDER DYSFUNCTION AFTER NECK DISSECTION

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Keywords: head neck cancer, neck dissection, shoulder dysfunction

Purpose/Aim: Background: Shoulder dysfunction (SD) is a frequent complication after neck dissection (ND) as a result of damage to the spinal accessory nerve (SAN). Brief electrical stimulation (BES) is used to accelerate peripheral nerve regeneration.

Materials and Methods: Methods: Forty adult patients undergoing Level IIb ND were recruited for preoperative assessment including the Neck Dissection Impairment Index (NDII), EMG testing, and nerve conduction studies (NCS) by a blinded physiotherapist and neurophysiologist. Patients were then randomized to receive intraoperative BES applied to the SAN after ND, or no stimulation (NS). Differences between preoperative and 6-month NDII (?NDII) scores for treatment shoulders were compared to the minimally important clinical difference (MICD) for the NDII (18.1).

Results: Results: Mean ?NDII scores were 45.6 and 19.0 for the NS and BES groups, respectively, with a difference of 8.5 above the MICD between groups. 60.0% of patients remained below the NDII MICD (<18.1) in the BES group.

Conclusions: Conclusions: BES shows a clinically significant decrease in SD in the majority of ND patients and may be used as an adjunct to physiotherapy.

34

RECONSTRUCTION OF OROFACIAL DEFECTS OF DIFFERENT ETIOLOGY USING DENTAL IMPLANTS

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Clinic for Dentistry, Military Medical Academy in Belgrade; Clinic for Maxillofacial Surgery,

Military Medical Academy in Belgrade

Belgrade, Serbia

Keywords: Craniofacial Defects, Osseous Tissue Support, Soft Tissue Support

Purpose/Aim: The aim of this presentation is to show the rehabilitation of patients with congenital, postraumatic and postresectional jaw defects and with severe bone atrophy.

Materials and Methods: Dental implants have created the possibility for a reliable basis for therapy with fixed and mobile dentures, and reconstructive pre-prosthetic surgery. The main goal is to provide satisfactory osseous and soft tissue support for prostheses, has shifted towards the provision of enough bone tissue which would enable implant placement in the most optimal position from the prosthetic point of view.

Results: Results and Conclusion: Well planned prosthetic, periodontal and surgical therapy can result in satisfactory function and aesthetics, and reduce the maxillofacial deformity. Implant treatment is a safe procedure and it has many advantages over classical prosthetic therapy solutions.

35

PRIMARY IMPLANTS IN HEAD AND NECK CANCER PATIENTS

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Oral and Maxillofacial Surgery
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Keywords: Dental implants, head and neck cancer, prosthodontic rehabilitation

Purpose/Aim: To describe the experience with and give recommendations for dental implants inserted in head and neck cancer patients during the ablative surgery.

Materials and Methods: Endosseous implants were inserted in 164 oral cancer patients and 21 patients needing total rhinectomy during the ablative surgery (primary implants). All oral cancer patients were evaluated using questionnaires and clinical assessments during a final assessment in 2012. In patients needing total rhinectomy, surgical and prosthetic aftercare was scored using patient records. In 2014, skin reaction, peri-implant bone loss and patients' satisfaction were assessed.

Results: Oral cancer patients In 84% of the patients an implant-retained mandibular overdenture was made. Completion of prosthetic rehabilitation and oral functioning was not associated with primary tumour location, number or type of implants inserted, tumour stage and the type of reconstruction used during surgery. Over time, peri-implant mucosa was in general free of inflammation. More implants were lost in irradiated patients (8.5%) than in non-irradiated patients (0.5%). Irradiated patients reported more problems in oral functioning and reported lower satisfaction than non-irradiated patients. Patients with an implant-retained mandibular overdenture reported fewer problems in oral functioning than patients without an overdenture. Patients needing total rhinectomy. Implant survival in patients with dental implants in the nasal floor was 95% (median follow-up 50.6 months, IQR 8.0-72.3). Peri-implant skin as healthy and patients' satisfaction was high. Longevity of the prostheses was limited.

Conclusions: Primary implant insertion in head and neck cancer patients should be routinely incorporated in the surgical planning as oral functioning in patients wearing mandibular overdentures improves distinctly and peri-implant health is at least reasonable. In patients rehabilitated with implant-retained nasal prostheses, our treatment protocol resulted in high patients' satisfaction and favourable treatment outcome.

36

HOW TO OPTIMIZE IMPLANTS STABILITY IN LOW TO OPTIMIZE IMPLANT STABILITY IN LOW-DENSITY BONE?

Misic, Tijana
Belgrade, Serbia

Sufficient primary implant stability is a critical factor for osseointegration, time of implant loading and treatment outcome. Low-density bone with its thin trabeculae and wide intertrabecular spaces offers loose anchorage for dental implants. This bone type is usually present in posterior maxilla, which is an anatomical region with the greatest implant failure rate.

In order to optimize implant stability in low-density bone, several therapeutic approaches have been proposed including adopted implant macro design and modified surgical technique. Lateral condensation technique involves combined preparation of implant site using drills and series of condensers with increasing diameter that compress trabeculae laterally and apically. This changes in the micromorphology of the peri-implant trabecular bone provide greater implant stability. New implant macro design comprising conical implants with self-tapping threads and reduced thread pitch has increased predictability of implant treatment even in such challenging indications.

This presentation demonstrates results of the randomized clinical study performed to investigate the relationship between surgical technique and implant macro-design on implant stability in the low-density bone of the posterior maxilla.

37

OCULAR AND ORBITAL DEFECT REHABILITATION – THE UNCONVENTIONAL PROSTHETIC APPROACH

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Keywords: Ocular prosthesis, orbital prosthesis, anophthalmos

Case Presentation: The orbital and ocular defects, consequential to surgical intervention of pathologies involving eye, are rehabilitated by ocular or orbital prosthesis. The anophthalmic socket embraces the prosthetic device and should mimic the contralateral globe. The prime objective is to achieve static symmetry of the palpebral apertures, canthal angles, and superior sulci. Of the two, the custom made prosthesis is better and desirable due to improved comfort and enhanced esthetics. Various techniques are available for the fabrication of custom-made ocular and orbital prostheses. In clinical practice an ideal socket is rarely encountered; and restoration of complex defects by conventional custom techniques is a challenge. This presentation discusses the clinical experience of rather unconventional approach such as cosmetic correction by optical lenses, modification of ocular and orbital prosthesis (light weight, soft backing, 3D effect, etc.) and significance of digital planning and steriolithographic models for successful outcome of implant retained orbital prosthesis.

38

VOLUMETRIC ANALYSIS OF BONE GRAFTING TECHNIQUES IN PATIENTS WITH CLEFTS

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Keywords: alveolar, autogenous, allograft

Purpose/Aim: Bone grafting is a common procedure to augment an edentulous area in preparation for placement of an osseointegrated implant to restore function and appearance. Autologous grafting is a standard surgical procedure widely used for alveolar reconstruction for patients with clefts and other limited sized sites. An alternative technique involves grafting with allogenic material. It is intended to achieve equal or improved outcomes relative to bone volume without significant side effects of the autologous technique. These include sensory disturbances, postoperative pain and infections at the donor site, and delayed recovery with a defective silhouette. This study compares outcomes of both techniques.

Materials and Methods: Seventy-five patients underwent alveolar bone grafting in anticipation of dental implant placement. Thirty cases used autogenous iliac crest bone and forty-five cases used allograft (Zimmer Puros). Presurgical cone beam CT scans (cbct) were taken in each case. Postsurgical cbct were taken 4-5 months later.

Volumetric analysis to compare pre and postsurgical conditions was performed using 3D medical imaging softwares. Statistical analysis was performed using two-way ANOVA and Mann-Whitney U test method.

Results: There is no significant statistical difference between autogenous group and allograft group in terms of volumetric alteration of the defect as a results of the bone graft after 4-5 months.

Conclusions: Alveolar bone grafting with allogenic bone material yields comparable results to similar procedures using autogenous bone graft within the scope of this study. There were less real and potential complications using allogenic bone. This suggests that the use of allogenic bone is a reasonable alternative to bone grafting with autogenous bone.

39

A STUDY ON THE MECHANISM OF RADIATION-INDUCED TRISMUS

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Keywords: Trismus Radiotherapy Electromyography

Purpose/Aim: To explore the mechanism of radiation-induced trismus

Materials and Methods: The bilateral masseter, lateral pterygoid muscle and medial pterygoid muscle of eight oral cancer patients after the combining treatment of surgery and radiotherapy were examined using needle electromyography (EMG) and the examination. MIO of them was measured. 24 New Zealand rabbits were randomly divided into 4 groups, one group was served as control group without X-ray irradiation operation and the unilateral masseter of other 3 groups were exposed one time to 10, 20, and 30 Gy X-ray irradiation, respectively. All the rabbits were sacrificed in 3 months, the masseter were extracted and processed histologically. The histological change of masseter, peripheral nerves, and motor end plate were observed with light and electron microscopy.

Results: On muscle resting state, positive sharp waves and/or fibrillation were observed in 7 muscle from 15 muscle on irradiated side and no positive sharp waves and fibrillation was observed in any muscle on not irradiated side of 8 patients. The MIO of 6 patients who have positive sharp waves and/or fibrillation observed < 35mm. No abnormal change was found in the muscular tissues of the 10Gy and the 20Gy X-ray irradiation groups. Inflammatory cell infiltration, capillaries swelling with microthrombus and the broadening of muscle fiber gap were observed in the muscular tissues of 30 Gy X-ray irradiation group. There were no visible differences in the nerve cord between the 10Gy X-ray group and the control group. Myelin discretation, and unclear lamellar structure of the nerve cord were observed in 20Gy group. Wider myelin discretation, one or more myeloid balls formed by bent and retracting of myelin, decreased microtubules, neurofilaments in the cross-section of the axon, vacuolation in Schwann cells and decreased extracellular matrix can be observed in 30Gy X-ray group. In the 20 and 30 Gy irradiation groups, motor end plate displayed irregular shape and lighter staining. There was a significant difference in the optical density value of Acetyl choline enzyme in the motor end plate between irradiation groups and control group ($P < 0.05$).

Conclusions: High external beam radiation can cause injury of trigeminal nerve cord. It was suggested that the axonal injury of nerve and the denervation of muscles caused by high external beam radiation therapy was one of the mechanism of the development of trismus of H&N cancer patients.

40

PROSTHETIC REHABILITATION DIFFICULTIES IN RADIATION INDUCED XEROSTOMIA COMBINED WITH MICROSTOMIA

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Case Presentation: Squamous Cell Carcinoma (SCC) comprises about 20% of the oral cavity carcinomas. It is more common in men and it is dominant in the lower lip. Patients which undergo an operation of a lip SCC may end up with microstomia which decreases the quality of life of the patient.

There are difficulties in the prosthetic treatment of patients with microstomia after a SCC surgery. The management is often more challenging if microstomia is combined with radiation xerostomia. There may be difficulties in taking the impressions, determination of the vertical dimension and correct lip posture etc.

This presentation aims to overlook to the literature on radiation induced xerostomia and to discuss the challenging points in the prosthetic management of such cases, on a patient who had a SCC operation and having radiation induced xerostomia

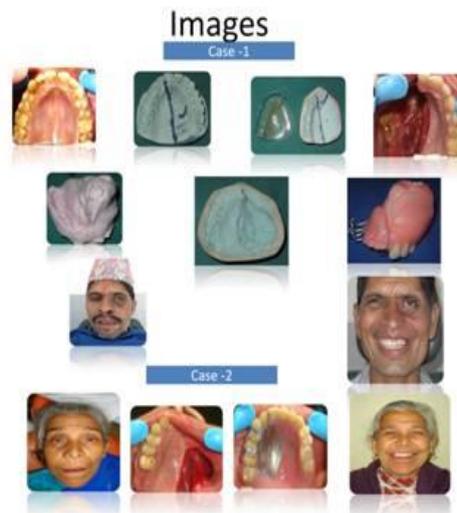
41

REVITALIZING LIVES BY MAXILLARY OBTURATOR

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Keywords: maxillary obturator, rehabilitation

Case Presentation: Prosthodontics rehabilitation for an acquired maxillary defects begins immediately at the time of surgical intervention. Abrupt alteration of physiological function such as speech, mastication, deglutition & salivary control associated with ablative surgery requires timely prosthetic rehabilitation. In the total rehabilitation of the maxillectomy patient, the maxillofacial-prosthodontist has two primary objectives: 1. To restore the functions of mastication, deglutition, & speech. 2.To achieve normal oro-facial appearance. prosthetic rehabilitation begins with a surgical obturator. The surgical obturator is commonly converted into an interim obturator by relining with resilient lining material to adopt the defect. Definitive obturator is initiated approximately 3 to 4 months after surgery when healing is completed. This presentation deals about the management of patients with maxillary defect rehabilitated with surgical, interim & defenitive maxillary obturator.



42

Invited Speaker

RECONSTRUCTION OF MANDIBLE IN REHABILITATION OF ORAL FUNCTION

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Severe trauma, cysts, benign and malignant tumors as well as vascular malformations of the mandible may require mutilating ablative surgical resection which mostly is an act of destruction of bony and sometimes of surrounding soft tissues followed by rough esthetic and functional disturbance.

Subsequent mandibular defect can be managed as primary or secondary reconstructive procedure. Size of the defect, its cause, the age of the patient and his general condition dictate the decision about the type of reconstructive procedure in range of simple placement of metallic plate over remaining mandibular fragments, reconstruction with monocortical or bicortical avascular free (iliac, rib, calvarial) bony grafts or extensive microvascular surgery where large defect is reconstructed by vascularized (radial, scapular, fibular, clavicular, metacarpal, etc) osteo(fascio/myo/cutaneous) grafts which allow later stomatosurgical functional esthetic restoration.

These selected cases present 30 years of surgical experience with reconstruction of the mandible in rehabilitation of oral function.

43

ULTRASENSITIVE DETECTION OF ONCOGENIC HPV IN OROPHARYNGEAL SQUAMOUS CELL CARCINOMA USING DROPLET DIGITAL PCR

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Background: The incidence of oropharyngeal squamous cell carcinoma caused by oncogenic HPV (HPV-OPSCC) is rising worldwide. HPV-OPSCC is commonly diagnosed by RT-qPCR of HPV-16 E6 and E7 oncoproteins or by p16 immunohistochemistry (IHC). Droplet digital PCR (ddPCR) has been recently reported as ultra-sensitive and highly precise method of nucleic acid quantification for biomarker analysis. We aimed to validate this method for the detection of HPV-16 E6 and E7 in HPV-OPSCC.

Materials and Methods: Participants were recruited from January 2015-November 2015 at initial presentation to the University of Alberta Head and Neck Oncology Clinic. RNA was extracted, purified and quantified from prospectively collected participant tissues, and ddPCR was performed with fluorescent probes detecting HPV-16 E6 and E7. Results from ddPCR were compared to p16 IHC performed by clinical pathology as standard of care.

Results: Head and neck tissues were prospectively obtained from 68 participants including 29 patients with OPSCC, 29 patients with non-OPSCC and 10 patients without carcinoma. 79.2 % of patients with OPSCC were p16 positive. The sensitivity and specificity of ddPCR HPV E6/E7 compared to p16 IHC in OPSCC was 91.3 and 100%, respectively. The amount of target RNA used was ≤ 1 ng, 20-50x lower than reported by other for RT-qPCR HPV E6/E7.

Conclusion: The ddPCR of HPV E6/E7 is a novel and highly specific method of detecting HPV-16 in OPSCC.

44

OSSEOINTEGRATED IMPLANTS AS A PREDICTABLE OUTCOME FOR CRANIOFACIAL REHABILITATION

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Since 1960's commercially pure titanium implants have been well proven to directly osseointegrate with bone and can be used for the attachment of many applications and has been written about in numerous publications. Typically, patients with micotia/atresia requiring hearing and reconstruction will be implanted as early as possible with a Baha for their hearing and at a later date some form of reconstruction for their missing ear. For patients requiring Craniofacial rehabilitation it is often difficult and unpredictable to restore patients to an acceptable aesthetic result with their own tissue or to have a stable solution with adhesive retained prosthesis. Since 1979 patients who require prosthesis due to congenital atresia, trauma and cancer have been successfully restored with Cochlear Vitafix implants giving a reliable and predictable anchorage for their prosthesis.

45

MODIFICATION OF THE SUBMANDIBULAR GLAND TRANSFER PROCEDURE

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Keywords: Submandibular gland, Xerostomia, Oral cavity cancer

Purpose/Aim: Multi-modality therapy using adjuvant radiotherapy (RT) with or without chemotherapy remains the mainstay of treatment for advanced head and neck mucosal cancers. Despite the wide use of intensity-modulated radiotherapy (IMRT), xerostomia remains a prevalent morbidity of adjuvant therapy that significantly impairs patients' quality of life. The submandibular gland transfer has been shown to be superior in preventing radiation-induced xerostomia compared to pilocarpine in a phase III randomized control trial. However, its original description of transferring the gland into the submental area precludes its use in the oral cavity. Therefore, we developed the modified submandibular gland transfer (M-SGT) for use in oral cavity cancers where the submandibular gland contralateral to the disease process is transferred to the the peri-parotid space. We will present the feasibility and postoperative functional outcomes of the modified submandibular gland transfer (M-SGT).

Materials and Methods: Patients were recruited from a single head and neck oncology surgeon's practice from a tertiary cancer center. All patients had pathologically confirmed locally advanced oral cavity squamous cell carcinoma with unilateral or N0 neck disease treated with primary surgery followed by RT or chemoradiotherapy (CRT). The M-SGT was carried out on eligible patients as part of their surgical treatment. Feasibility of the gland transfer was assessed intraoperatively and total adjuvant RT dose to the glands were recorded. University of Washington Quality of Life Questionnaire (U of W QOL) was used to measure postoperative xerostomia.

Results: A total of 30 patients underwent M-SGT from 2014-2015. The average age was 62.6 years (Range: 54—78 yrs). Median follow-up time was 6 months. Eighteen (60%) and 12 (40%) patients received adjuvant RT and CRT, respectively. The median dose to the transferred submandibular gland was 25Gy (Range: 12—44Gy). Among all patients, the submandibular gland was rotated successfully and patients recovered without any post-operative complications. Post-operative U of W QOL showed favorable scores for amount and consistency of saliva.

Conclusions: The M-SGT is a feasible and surgically viable procedure that has the potential to prevent radiation-induced xerostomia in advanced oral cavity cancer patients.

46

ONCOLYTIC REOVIRUS AND HPV STATUS IN HEAD AND NECK CANCER

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Purpose/Aim: The management of patients with advanced stages of head and neck cancer requires a multidisciplinary and multimodality treatment approach which includes a combination of surgery, radiation, and chemotherapy. These toxic treatment protocols have significantly improved survival outcomes in a distinct population of human papillomavirus (HPV) associated oropharyngeal cancer. HPV negative head and neck squamous cell carcinoma (HNSCC) remains a challenge to treat because there is only a modest improvement in survival with the present treatment regimens, requiring innovative and new treatment approaches. Oncolytic viruses used as low toxicity adjunct cancer therapies are novel, potentially effective treatments for HNSCC. One such oncolytic virus is Respiratory Orphan Enteric virus or reovirus. Susceptibility of HNSCC cells towards reovirus infection and reovirus-induced cell death has been previously demonstrated but has not been compared in HPV positive and negative HNSCC cell lines. It was therefore our objective to compare the infectivity and oncolytic activity of reovirus in HPV positive and negative HNSCC cell lines.

Materials and Methods: Seven HNSCC cell lines were infected with serial dilutions of reovirus. Two cell lines (UM-SCC-47 and UM-SCC-104) were positive for type 16 HPV. Infectivity was measured using a cell-based ELISA assay 18h after infection. Oncolytic activity was determined using an alamar blue viability assay 96h after infection. Non-linear regression models were used to calculate the amounts of virus required to infect and to cause cell death in 50% of a given cell line (EC50). EC50 values were compared.

Results: HPV negative cells were more susceptible to viral infection and oncolysis compared to HPV positive cell lines. EC50 for infectivity at 18h ranged from multiplicity of infection (MOI) values (PFU/cell) of 18.6 (SCC-9) to 3133 (UM-SCC 104). EC50 for cell death at 96h ranged from a MOI (PFU/cell) of 1.02×10^2 (UM-SCC-14A) to 3.19×10^8 (UM-SCC-47). There was a 3×10^6 fold difference between the least susceptible cell line (UM-SCC-47) and the most susceptible line (UM-SCC 14A) EC50 for cell death at 96h.

Conclusions: HPV negative HNSCC cell lines appear to demonstrate greater reovirus infectivity and virus-mediated oncolysis compared to HPV positive HNSCC. Reovirus shows promise as a novel therapy in HNSCC, and may be of particular benefit in HPV negative patients.

47

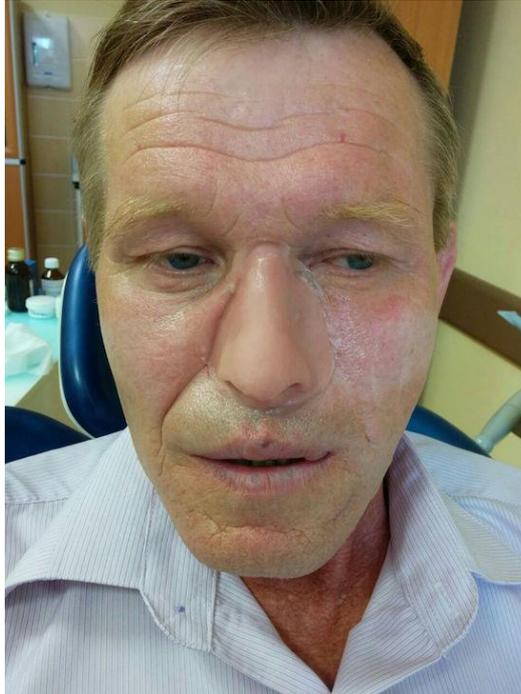
ZYGOMA-MAGNET BASED SILICONE PROSTHETIC RECONSTRUCTION OF NASAL DEFECTS

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Keywords: nasal, silicone, prosthesis

Case Presentation: Patients suffering from post-surgical oncological defects of mid-facial zone need a complex esthetic and functional rehabilitation. Maximum retention of the prostheses, correct color matching of the skin of prosthetic field, shortened post-surgical rehabilitation period with immediate prostheses loading and virtually reconstructed prostheses 3D photo-typing are the factors enhancing the complex rehabilitation that severely increases opportunity of social and psychological rehabilitation of patient with mid-facial(nasal) defect. Retentive mechanism of osseous-integrated prostheses is realized by two zygoma implants inserted in mid-facial region of irradiated either non-irradiated patient. Due to its length and wide surface contact we achieve a good primary implant stabilization, that gives us a chance of immediate nasal prostheses loading in

a short period of time. Good retention is finally achieved by a multi-purpose magnet with joining casted metallic framework on two zygoma implants. Correct color matching is achieved by multiple measurements of skin color around the nasal defect by e-skinn scanner and further intrinsic coloration of VTR silicone in 4 zones of defective area. Wax analogue of nasal prostheses is casted from a virtually 3D reconstructed and prototyped model. Enhanced esthetic features and good retention of nasal prostheses fabricated in a shortened post-surgical rehabilitation period directs to satisfied psychological and social rehabilitation of patient suffering from nasal post-surgical oncological defects.



48

REHABILITATION AFTER FAILED BONE AUGMENTATION: IMMEDIATELY LOADED QUAD ZYGOMA IMPLANTS

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Trifkovic Branka**

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Keywords: immediately loading, quad zygoma implants

Case Presentation: Prosthetic rehabilitation of patients with severely resorbed maxilla is a major challenge. These patients have disturbed appearance and unsatisfactory esthetics, moreover they often suffer from oral dysfunctions such as incomplete mastication and altered phonation. The presence of inadequate bone quantity does not offer adequate support for tissue retained prosthesis. On the other hand, bone resorption makes implant rehabilitation very difficult. Implant placement must be preceded by extensive alveolar ridge augmentation. These augmentation procedures have many limitations, like need for second surgery, unpredictable resorption of bone graft, morbidity of donor site and length of treatment. Placing implants in zygomatic bone presents an alternative solution. Zygomatic implants present shortest possible treatment which offers possibility of immediate loading with high success rates (96 – 100%).

Female patient of 45 years age was referred to a clinic. She was diagnosed with severely atrophic maxilla. Earlier bone augmentation with iliac crest graft did not manage to provide optimal conditions for implant placement. After CBCT scan analysis, it was concluded that not even two standard dimensions implants could be placed in frontal region. Four zygomatic implants (Nobel Biocare Branemark Zygoma) were needed in order to provide conditions for prosthetic rehabilitation. Implant placement was planned in Nobel Clinician software. Surgical procedure was performed in general anesthesia and consisted of lateral sinus lift in order

to enable visualization of implant trajectory and placing two implants in zygomatic bone bilaterally. After suturing with resorbable sutures, four multi-unit abutments were placed to implants. Abutment level impression was made in open tray technique. Patient's complete overdenture was reduced and modified so it could be used as a screw retained provisional restoration, connected to the implants at the day of the surgery. Provisional prosthesis was replaced with definitive Nobel Biocare Procera hybrid bridge 3 months after surgery.

Fixed prosthetic restoration retained on four zygomatic implants represents a suitable therapy for patients with severely resorbed maxilla after unsuccessful bone augmentation procedure.

49

THE UCSF EXPERIENCE WITH ZYGOMATIC IMPLANTS FOR MAXILLARY DEFECTS

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UCSF

Preventive and Restorative Dental Sciences

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Keywords: Zygoma, maxilla

Case Presentation: Obturation of congenital and acquired maxillary defects in edentulous patients poses significant challenges for prosthodontists. Osseointegrated implants provide an alternative to surgical reconstruction. However, not all patients have adequate native bone for the placement of conventional implants. The zygomatic implant was introduced by P-I Branemark in 1988 and has been used with success for the appropriate patient. In 1999 an edentulous patient with an anterior maxillary defect presented to the maxillofacial prosthetic clinic at UCSF unsatisfied with the functional outcome from her conventional obturator. She had insufficient bone for placement of conventional implants and was not a candidate for extensive reconstructive surgery. She was offered the zygomatic implant as an alternative and was successfully treated. We proceeded to treat other patients with similar defects and published our initial findings from 9 patients in 2004. This presentation will highlight updates on our success and failures with the zygomatic implant for edentulous patients with congenital and acquired maxillary defects.

50

INTRAORAL AND FACIAL PROSTHETICS COMBINED REHABILITATION WITH AND WITHOUT IMPLANTS

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Incan (Instituto Nacional De Cancerología)

Maxillofacial Prosthetics

Mexico City, D.F., Mexico

Keywords: Intraoral, Facial, Prosthetics

Case Presentation: Intraoral and Facial Prosthetics combined Rehabilitation with and without implants. (two cases reported)

Patients with big combined defects (intraoral and facial) are subjected to Feeding and medicating via a gastrostomy tube as well as living in seclusion, impoverishing the individual's life quality.

For this type of patients swallowing, phonation and looking aesthetically the best they can, comes to a very important role in their life.

The combined prosthetics (intraoral and facial) enhance each other in order to fulfill their function improving the patient's life.

These two big defects cases show us the different rehabilitation options used on them (implants, magnets, adhesives and mechanical retention) giving them excellent results towards functionality and aesthetically.

51

OBTURATOR SUPPORTED FACIAL PROSTHESIS

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Department of Prosthodontics
Istanbul, Turkey

Keywords: obturator, facial prosthesis, implant

Case Presentation: The prosthetic rehabilitation of a maxillary defect is challenging when the resection area is large and combined with a facial defect. Although osseointegrated implants are well documented for retaining obturator prosthesis as well as a facial prosthesis, survival of these implants may be compromised due to factors like insufficient bone quality and quantity, radiation therapy and physical condition of the patient. When the defect extends to both the facial area and the maxilla, it is difficult to rehabilitate those two separate defects to the satisfaction of the patient, especially in cases where implants cannot be placed.

This article describes the prosthetic rehabilitation of an edentulous patient who had a large maxillectomy coupled with extensive removal of the midface. After placing implants in the remaining maxilla and in the facial area, some of the extraoral implants were lost. A facial prosthesis was fabricated and retention was provided with a magnetic support obtained from the implant supported maxillary prosthesis. Thus, the patient reported an improvement in the retention and stability together with masticatory and speech functions.

52

BIOHPP TELESCOPIC OBTURATOR PROSTHESIS

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Dentistry, Clinic for Dentistry Prosthetic
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Keywords: Maxillectomy, Obturator telescopic denture, PEEK

Case Presentation: The size and location of maxillectomy defects influence the degree of impairment and difficulty in prosthetic rehabilitation. Lack of support, retention, and stability of the obturator prosthesis are some of the common problems in maxillectomy patients. Apart from these, social integration also becomes difficult as the quality of their lives is altered.

This case report presents management of a male patient with partial maxillectomy using a telescopic obturator partial denture treatment modality that resulted in enhanced quality of life with optimal aesthetics and functional adequacy. Telescopic removable partial dentures may be considered as an alternative option, combining good retentive and stabilizing properties in order to improve patient's esthetics, oral function and social confidence. Telescopic crowns reduce the destructive horizontal and rotational occlusal forces by directing them more axially and less traumatically than other retainers. Telescopic denture has the benefit of secure attachment and increased bearer confidence.

For producing the telescopic obturator partial denture base we used BioHPP (Biological High Performance Polymer) - Bredent, Germany and it belongs to the group of PEEK (polyetheretherketone) - semi-crystalline high-performance polymer which combines good mechanical properties with resistance to high temperatures and chemicals. It is also used in medicine as a biocompatible material that can be sterilized. In larger construction, the resistance of material was recorded to operate a force of 1200 N. The main advantage of this material is its low weight and plaque resistance.

Saturday, May 6

Rehabilitation

53

Invited Speaker

THE ART IN MAXILLARY RECONSTRUCTION

Seikaly, Hadi *, Heather Logan, Daniel A. O'Connell, Jeffrey Harris, Kal Ansari, Vincent Biron, David Cote, Andrew Grosvenor, Timothy McGaw, Suresh Nayar, Martin Osswald, John Wolfaardt

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Background: The use of bone containing free flaps has improved the functional and cosmetic outcomes of maxillary reconstruction but the long-term results of full rehabilitation with osseointegrated implants are inconsistent and suboptimal.

Objective: To report on a prospective cohort of patients that underwent reconstruction of the maxilla with the use of free flaps, surgical digital simulation and primary osseointegrated implants. We termed this procedure the Alberta reconstructive technique (ART)

Methods: All patients undergoing resection and reconstruction of maxilla with the ART were reviewed. The implants and bone positioning was assessed with the postoperative CT scans and compared to the preoperative digital plan in the X, Y, and Z axes. Functional assessment with speech intelligibility, modified barium swallows, and aeromechanical measurements were performed preoperatively, 1, 6, and 12 months postoperatively

Results: 18 patients underwent the ART for maxillary reconstruction during the study period. 14 patients had malignant disease (78%). All patients had fibular free flap reconstructions and all the flaps survived. 69 implants were placed in the fibular bones at the time of primary reconstruction and the fibulae were osteotomised and average of 1.1 times. 7 (40%) patients underwent postoperative radiation treatment with 32 implants exposed to full course radiation postoperatively. A total of 14 (20%) implants were lost. 13 (40%) implants were lost in the radiation group, 1 (2%) in the non-radiation group. The average postoperative deviation in the implant positions from the ideal preoperative digital plan was 1.63 mm in the X, 0.95 mm in the Y and 2.70 mm in the Z axes. All patients maintained functional status with no statistically significant difference between preoperative and postoperative measurements.

Conclusions: ART provides selected patients with bony head and neck defects of the maxilla, reliable, and effective functional reconstruction. Implant loss after radiation is high and is likely due to the high radiation dosage.

54

Invited Speaker

ZYGOMATIC IMPLANTS IN MAXILLECTOMIES

Rohner, Dennis *

**Associate Professor, University of Basel
Basel, Switzerland**

Resections of maxillary tumors often result in defects involving oral, nasal and paranasal cavities. Oral function, mastication, speech and deglutition are often considerably impaired. Therefore, the goal of treatment is aimed at the functional rehabilitation. In these extended defects the quality of prosthetic reconstruction is often dependent on possible fixation modalities. Zygomatic implants are important pillars for the stabilization of overdentures, sometimes in combination with pedicled temporal muscle flaps. Apart from the use of zygomatic implants vascularized free bone flaps might be another but more complex option. In a series of cases we report on different indications and outcomes.

55

Invited Speaker

CRANIOFACIAL IMPLANTOLOGY – THE JOURNEY FROM RESECTION TO REHABILITATION

Boyes-Varley, Greg *

University of the Witwatersrand, Johannesburg, South Africa

Department of Maxillo-Facial and Oral Surgery, Faculty of Health Sciences, University of the Witwatersrand

University of the Witwatersrand, Johannesburg, South Africa

Purpose/Aim: The rehabilitation of the midface after trauma or oncology resection presents unique surgical and prosthodontic challenges. These structures which are ablated by the trauma or resection supply the functions of speech, mastication and deglutition. In addition, the facial deformities that often result can create serious psychological and aesthetic complications. Facial trauma and gunshot wounds are common in many countries, especially when sustained in war. Little has been published about reconstruction following gunshot wounds and other trauma to the face after anatomical disruption of the maxillo-facial complex akin to oncology resection following hemi-maxillectomy

Materials and Methods: Patients susceptible to craniofacial cancer account for approximately 30 in 100 000 people and those afflicted with lip and oral cancer form about 3% - 5% of all cancers. WHO figures for developing countries show Head and Neck oncology however can kill more people than those dying from Breast Carcinoma. Whether benign or malignant, craniofacial tumours have far reaching impact on the patient, their families, the logistics within a craniofacial team, and the funders of disease management.

Results: There is no other treatment regime that requires such extensive co-operation between specialities of medicine and dentistry, as well as their supportive disciplines of Oral Hygiene, Physiotherapy, Speech and Language Pathologists, Psychologists, Social workers and dieticians.

Conclusions: While it is true that the oncological team objective is achieving longevity of life, the oral and rehabilitative team must concentrate on the quality of that life and functional rehabilitation. Resection margins must clearly be dictated by the extent and aggression of the patient's disease. However, surgery without due regard for the required rehabilitation can introduce unnecessary complications. This lecture will trace the journey, including the use of advanced digital technologies and multidisciplinary management in achieving a functional bony base and Implant Supported Craniofacial reconstruction.

56

Invited Speaker

DEVELOPMENT OF DIRECT PRINTING OF 2 COMPONENT SILICONES FOR FACIAL & BODY PROSTHESES

Coward, Trevor *

Reader / Consultant in Maxillofacial & Craniofacial Rehabilitation

Academic Centre of Reconstructive Science

Kings College London, Guy's Campus

London, UK

Traditionally maxillofacial prostheses are fabricated by hand carving the missing anatomical defect in wax, and creating a mould into which pigmented silicone elastomer is placed. Modern technologies have been used to manufacture anatomical face/body parts utilizing computed tomography (CT) data in conjunction with rapid prototyping (RP) techniques utilizing a hard plastic resin or thermoformed wax. However, these methods still require moulds into which a biocompatible pigmented silicone elastomer is placed. The purpose of this presentation is to explore the development of direct printing of two component silicone elastomers in conjunction with a support structure to create complex shapes using a customized 3D printer.

A custom designed 3D printer with x- y-z gantry robot with an accuracy of 0.1µm was adapted with a custom designed printing head. Secondly, a two-component printable silicone elastomer was formulated that incorporated the desired characteristics and properties similar to those commercially available for the provision of facial and body prostheses. The silicone is composed of polydimethylsiloxane (PDMS) chains,

filler, catalyst and cross-linker. Varying the amount of these components the mechanical properties of the silicone elastomer can be altered e.g. tensile strength, tear strength, hardness and wettability. To achieve these desired properties consideration must also be given to the set time and viscosity of the silicone elastomer and additionally the speed at which the material is printed. Two approaches have been used to provide a support material. Firstly, a thermal print head was used to deliver Polyvinyl acetate (PVA), and secondly a hydrogel was used to support the complex silicone shapes.

Further development is needed to ensure appropriate digital colouring of the silicone elastomer to match the patients' natural tissues. Ultimately, this would provide the maxillofacial prosthodontist with a tool that manufactures prostheses reliably, with less emphasis placed on individual artistic interpretation. This technology has the potential to solve possible manufacturing solutions to complex shapes for both commercial and industry in addition to the current medical applications.

57

Invited Speaker

EXTRAORAL MAXILLOFACIAL PROSTHESES: FROM RESEARCH TO CLINICAL APPLICATIONS: PARTS 1 & 2

Kiat-Amnuay, Sudarat *, Paravina, Rade D. *

The University of Texas Health Sciences Center at Houston, School of Dentistry Professor, Department of General Practice and Dental Public Health; Adjunct Professor, Department of Head and Neck Surgery, Section of Oncologic Dentistry and Maxillofacial Prosthetics, University of Texas M. D. Anderson Cancer Center; Section Head, Maxillofacial Prosthodontics, Houston Center for Biomaterials and Biomimetics
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Keywords: Maxillofacial prostheses, color stability, mechanical properties

Purpose/Aim: In order to achieve life-like replication, extraoral maxillofacial prostheses should reproduce lost structures in the finest detail and match color of patients' skin. There are many reports of dissatisfaction with color appearance and poor color stability (reduced lifetime) of extraoral maxillofacial prostheses. Many efforts have been made in the past 5 decades to improve color related properties of maxillofacial prostheses. The introduction of advanced maxillofacial elastomers and colorants, initiated new research aiming to develop methods for color matching of maxillofacial prostheses to human skin. Recent studies showed that mechanical properties are of importance for the success of maxillofacial prosthesis.

Materials and Methods: Part 2: A literature review and review of presenters' research involving different silicone base elastomers, colorants (color pigments and opacifiers) and the effects of additives (UV light absorbers, thixotropic agent, etc) on color stability and mechanical properties (tensile, tear, elongation, and hardness) of the maxillofacial prosthetic elastomers, will be presented.

Conclusions: Clinical guidelines will be provided for understanding the effects and side effects of combinations of maxillofacial elastomers, colorants, and additives on esthetics and longevity of extraoral maxillofacial prostheses.

58

DENTAL IMPLANTS IN COMPLEX MAXILLOFACIAL REHABILITATIONS

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Dental implants have become more reliable also in compromised patients and their faster healing times open up more possibilities for patients with compromised situations. Especially narrow implants and tapered implants in combination with 3D planning offer treatment options in challenging cases. Patients with extreme atrophy can often be treated using intraoral donor sites instead of extraoral iliac crest grafts.

Local challenging situations can be characterized by compromised bone in patients following Bisphosphonate therapy. In these situations treatment options using local bone are very promising. A combination of critical bone and soft tissue is found in patients with a cleft lip and palate, where perfect esthetics are still difficult to achieve. The largest group of challenging clinical situations is seen in patients after head and neck cancer. Better presurgical planning before tumor surgery offers the possibility for implant insertion during tumor resection. On the other hand indications for "immediate" implants during ablative surgery have to be better defined. Radiotherapy was a challenge in earlier days; now implants are inserted before start of radiotherapy or with a precise 3D planning in local bone after radiotherapy. New techniques can be seen in secondary reconstructions where flaps are planned using 3D techniques. This has led to the strategy of prefabricated flaps, which still show some disadvantages. Especially functional aspects of "using their denture" and soft tissue stability still are critical issues in these patients. A standard and predictable method of care is the use of dental implants for anchoring extraoral implants for epithesis.

These indications show how the development in dental implantology including new surfaces, stiffer and smaller implants as well as perfection of the 3D workflow open new horizons for the rehabilitation of complex situations. More predictability, less invasiveness is a goal also in complex cases.

Poster Presentation Abstracts



Poster # 1

CURRENT STATUS OF INTERNATIONAL (NON-UNITED STATES) MAXILLOFACIAL PROSTHODONTICS

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Jakarta, Indonesia

Purpose/Aim: The purpose of this study was to survey non-United States Maxillofacial Prosthodontist to determine their practice profile and rationale for their decision to pursue maxillofacial prosthodontics training

Materials and Methods: Emails for the non-United States program directors and non-United States maxillofacial prosthodontists was obtained from the web sites of the International Society for Maxillofacial Rehabilitation 2014 membership directory, American Academy of Maxillofacial Prosthetics and International Academy of Oral Facial Rehabilitation. An email with a link to the electronic survey program was sent to each participant. A total of 4 emails were sent to the respondents. One week after the first email, the same email was sent again. Three and seven weeks from the initial email, the email containing the survey link was again sent to only participants who have not responded. Descriptive statistics were given as percentages (%). Chi-square/Fisher's exact and Mann-Whitney-U Tests were used to investigate the influence of formal maxillofacial prosthodontics training on professional activities and type of treatments provided.

Results: Respondents totaling in 118 filled in the survey. Thirty-four nationalities participated in the study. Personal satisfaction was deemed as the most important factor for decision to pursue maxillofacial prosthodontics career. 51% of the respondents was unsatisfied with the training facilities available in their countries. However, only 23% of the respondents were not satisfied with their training. Predominant employment setting was affiliation to university (77%), which included working at university only or in combination with private practice and/or hospital. There were significant differences between respondents with and without formal MFP training regarding provision of surgical treatments ($P=0.013$), dental oncology ($P=0.010$) and radiation intra oral devices ($P=0.050$). Most treatment were done together with oral surgery (67%) followed by head and neck surgery (59%) and otolaryngology (51%). Practitioners not affiliated to university spend significantly higher percentage of time for clinical practice ($P=0.002$), whereas respondents affiliated to universities spend significantly more time for teaching/training ($P=0.015$) and funded research ($P=0.012$). No statistically significant difference of satisfaction working as maxillofacial prosthodontics ($P=0.737$) between respondents with and without formal maxillofacial prosthodontics training. Several activities expected from the professional organization, including educational support such as online seminars, facilitation of collaboration with colleagues in other institutions and providing guidelines or consensus for patient treatments; outreach program; concession in membership and to make a more effective policy of cooperation among nations and maxillofacial centers.

Conclusions: Personal satisfaction is the most important factor for decision to choose maxillofacial prosthodontics career. Most of the maxillofacial prosthodontics work in university and within a multidisciplinary setting. There were differences regarding type of treatments provided by respondents with and without formal MFP training.

Poster # 2

THE ORAL CONSERVATION OF THE RADIO-TREATED PATIENT

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Keywords: radio-treated

Case Presentation: The oral conservation of the radio-treated patient

Bertolino D., Gassino G., Bassi F.

C.I.R. Dental School- Dipartimento di Scienze Chirurgiche- Università degli studi di Torino Direttore Prof. Stefano Carossa

Aim: Evaluating the incidence of radiotherapy on the loss of clinical attack (CAL), on the both quantitative and qualitative alteration of the saliva and consequent frequency of radio-induced dental decay. Identifying the saliva substitute and the enamel remineralization technique deemed to be the most satisfactory for the radio-treated patients, in order to both keep the oral conditions under control and to guarantee the patient the best possible lifestyle.

Methods: review of the literature in order to re-evaluate the basic principles for the control of dental caries-due lesions, for the loss of clinical attack and for properly facing the oral dryness. Utilization of saliva kits, PSR and DMFT indexes for intercepting the critical aspects. Administration of saliva substitutes together with re-mineralizing products (Biotène gel-domiciliar fluoroprophylaxis; Hydral spray-Toothmousse). Teaching methods towards the appropriate oral hygiene operations ("roll-wise" brushing, soft toothbrush). Filling in of the appreciation form by the patient.

Results: no evidence of statistically significant differences in the loss of clinical attack before and after the radiotherapy. On the other hand, statistically relevant qualitative and quantitative saliva alteration. The appropriate use of these dental hygiene aids and protections contributed to an overall improvement of the oral situation of the patient. There does not exist a statistically significant difference in the reduction of dental decay lesions incidence between the use of toothmousse and domiciliary fluoroprophylaxis, although the patients show a preference for the application of the first rather than a tray positioning since the latter, in some cases, ended up painful for the gingiva.

Conclusion: properly teaching the correct oral hygiene operations, as well as the adequate protection systems guarantees an overall satisfactory periodontal maintenance. The use of saliva substitutes combined with re-mineralizing products results being the most effective (as well as most preferred) practice for the control and maintenance of an acceptable oral condition.

Poster # 3

CONVENTIONAL METHODS OF RETENTION FOR FACIAL EPITHESES

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Case Presentation: Aim: a successful facial prosthesis depends on several factors, of which retention is a primary component. Prostheses can be retained by anatomic-mechanical, adhesive, or biomechanical means. The selection of a facial-prosthetic adhesive can be perplexing because little information is available to the consumer. It is for this reason then that we aim to discuss here the properties and behaviour of adhesives in the retention of prostheses.

Methods: review of literature to evaluate the basic principles of adhesion (mechanical, chemical and physical bonding), the requirements of a good adhesive system and the different types of skin adhesion (paste adhesives, double-sided tapes, liquid adhesives and spray-on adhesives).

Results: several tests have been carried out both in vivo and in vitro. Developing a standardized method of testing of maxillofacial prosthetic materials is essential.

Conclusions: traditionally, most facial prostheses have been retained by either mechanical or adhesive means. Maxillofacial prosthodontics are left with the problem of selecting the optimum method of retention (mechanical or chemical adhesion) and in relation to the latter, selecting which type is the most suitable for individual patients' needs.

Poster # 4

OHRQOL AND CHEWING FUNCTION IN THREE DIFFERENT REMOVABLE DENTURE OPTIONS

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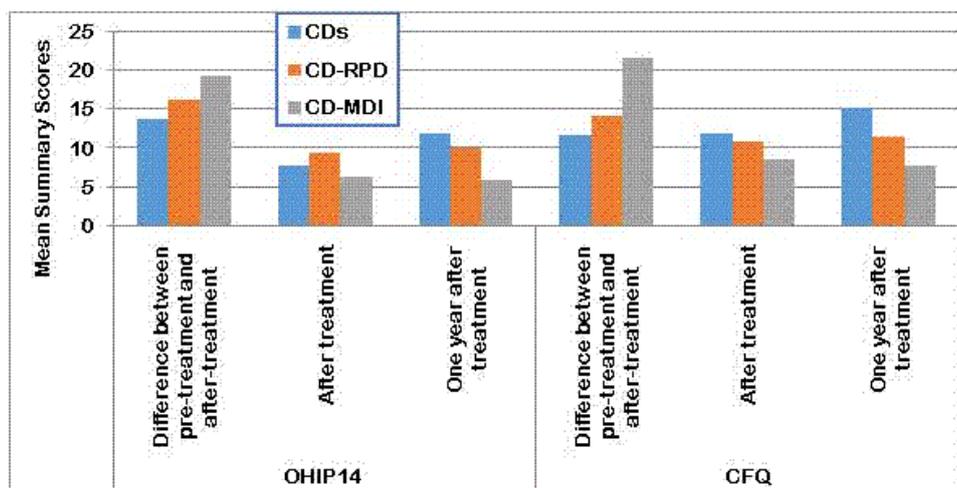
Keywords: OHRQoL, chewing function, removable dentures

Purpose/Aim: The aim of the study was to assess improvement of oral health-related quality of life (OHRQoL) and chewing function (CF) among three groups [complete denture patients (CD group), patients who received CDs in the maxilla and CDs supported by Mini Dental Implants (MDI) in the mandible (CD-MDI group), and patients who received CDs in the maxilla and long saddle removable partial dentures - Kennedy Class I in the mandible (CD-RPD group)]. Aim was also to determine changes of post-treatment scores one year after the therapy.

Materials and Methods: Croatian version of OHIP14 and chewing function questionnaire (CFQ) consisting of 10 questions (scores 0-4; 0=no difficulties, 4=highest difficulties) were completed at three occasions: before treatment, 2-3 month after treatment, and one-year post treatment. The CD group comprised 40 females and 28 males, mean age 69,58 years ($\pm 11,17$), CD-RPD group comprised 32 females and 26 males mean age 66 years ($\pm 8,004$), while CD-MDI comprised 44 females and 6 males, mean age 66,72 years ($\pm 9,34$). No significant age differences between groups was observed ($P > 0.05$).

Results: All groups significantly reduced OHIP scores and CFQ scores after the treatment ($P < 0.01$) with the highest reduction of the CFQ scores in the CD-MDI group (-21.6 ± 6.3) compared to the CD (-11.705 ± 5.86) and the CD-RPD group ($-14.07; \pm 8.51$); ($F=30,39, P < 0.001$). The highest reduction of the OHIP scores was also recorded in the CD-MDI group (-19.2 ± 10.52), compared to the CD-RPD (-16.24 ± 7.5) and the CD groups (-13.71 ± 9.9) ($F=4.95; P=0.008$). The CD-MDI group improved CF and OHRQoL significantly better than the CD group (Sheffe post hoc). Multivariate analysis revealed that only different prosthodontic rehabilitation (CD: CD-MDI: CD-RPD) elicited significant effects ($p < 0.01$), while age, gender and level of education did not ($p > 0.05$). At the one-year stage, both CFQ (11.94:15.11) and OHIP scores (7.76:9.5) significantly increased (worsened) in the CD group ($p < 0.01$). In the CD-RPD group scores also increased, but significantly only for the OHRQoL ($p < 0.05$), while in the CD-MDI group CFQ scores further decreased ($p < 0.01$).

Conclusions: Among the three observed prosthodontic rehabilitation options (CDs, CD-RPDs and CD-MDIs), the CD-MDI group elicited best effects, which remained consistent within one-year post treatment, or even improved.



Poster # 5

QUALITY OF LIFE IN DEFECTS RESTORED WITH OBTURATORS OR RECONSTRUCTED..

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Keywords: maxillectomydefects, obturatos, reconstruction

Case Presentation:

AIMS/ OBJECTIVES:-

To evaluate quality of life (QOL) and function such as speech and swallowing of maxillectomy patients after defects rehabilitated with prosthetic obturators and defects reconstructed.

MATERIAL METHODS:

85 patients treated for benign and malignant tumours of the mid facial region with maxillectomy and subsequent rehabilitation with a) Prosthetic obturators b) Reconstructed with flaps (bone or soft tissue flaps) will be assessed for quality of life and speech and swallowing.

Patients who completed 1-2 years of post-rehabilitation period were included in the study

Informed consent will be taken and their records will be reviewed and demographic details, tumor sites, TNM classification, treatment details, classification of the maxillary defect will be noted.

STATISTICAL ANALYSIS:-

? Group comparisons will be made using independent t-test or Mann Whitney U test as per the distribution of the data for continuous variables.

? P-value < 0.05 will be considered statistical significant.

? SPSS version 20 will be used to analysis of data

Result of this study will be presented

Poster # 6

MAXILLOFACIAL PROSTHETIC REHABILITATION WITH IMPLANT-RETAINED AURICULAR PROSTHESIS: A CASE REPORT

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Clinic for Prosthodontics

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Keywords: Maxillofacial prosthodontics, Ear prosthesis, Implant retained prosthesis

Case Presentation: One of the biggest challenges in maxillofacial prosthetics is the production of auricular prosthesis because of the demanding esthetics and retention. Long term success of a facial prosthesis mainly depends on retention. This task becomes more complex with advancement in techniques and materials. The aim of this case report was to show the clinical and laboratory procedures in fabrication of auricular prosthesis for a patient with unilateral auricular deformity who had unsuccessful cosmetic surgical intervention.

A 27-year-old male patient was referred to the Clinic for Maxillofacial surgery, School of Dental Medicine, University of Belgrade with unilateral auricular deformity. Temporal bone CT, showed the existence of sufficient quality bone for implant placement. Three Straumann SP short implants were placed (2 RN Ø 4.1mm x 4mm and 1 WN Ø 4.8mm x 6mm, Straumann, AG, Switzerland) in the auricula region.

After the period of oseointegration, the impression was made with individual open tray method and addition silicone material (A-silicone). At the master model the screw-retained bar was planned and modeled. Based

on the selected position of auricular prosthesis and the position of the bar, a base in wax was modeled and later made of heat polymerized acrylic resin and used as a platform for modeling the auricle in wax. After sculpting, auricular prosthesis in wax was converted to earlobe made of addition silicone. The intrinsic coloration was performed to match the color of the surrounding skin. After polymerization, extrinsic coloring was performed with appropriate technique of color application and adhesion. Metallic clips were attached to acrylic housings on the basal side before delivering the prosthesis.

Regardless the existence of obvious differences in color and texture of the skin and the prosthesis, we can conclude that this is for now state of the art in maxillofacial-prosthetic rehabilitation of auricular region and on this way the "Quality of Life" of our patients is improved.

Poster # 7

EVALUATING THE FEASIBILITY AND ACCURACY OF DIGITIZING EDENTULOUS MAXILLECTOMY DEFECTS

Elbashti, Mahmoud *, Hattori, Mariko.1, Patzelt, Sebastian. 2, Schulze, Dirk.3, Sumita Yuka.1, Taniguchi, Hisashi.1

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1. Department of Maxillofacial Prosthetics. 2. Department of Prosthetic Dentistry. Tokyo, Japan

Purpose/Aim: Making conventional impressions in maxillectomy patients for the fabrication of obturators is challenging with the risk of aspiration and foreign body impaction. Impression deformation associated with large undercuts are also an issue. Computerized optical impression making is one of the promising technologies that can be used to simplify the current way of impression making. The purpose of this in vitro study was to evaluate the feasibility and accuracy of digitizing edentulous maxillectomy defects using an intraoral scanner and compare it to the conventional technique.

Materials and Methods: Two different maxillectomy defect types (quarter and half of maxillae) were used to group edentulous maxillectomy defect models. Ten polyurethane models for each group were digitized using a CBCT as reference. Conventional impressions and digital impressions were performed using silicone rubber impression material with optical scanner and chairside intraoral scanner, respectively. Scanning time for digital impression was calculated. The three dimensional (3D) data were saved as standard tessellation language files. The 3D datasets were geometrically evaluated and compared to the reference data using a 3D evaluation software. A two-way analysis of variance was performed to compute differences in defect types and impression methods for absolute 3D deviations (statistical significance $p < .05$).

Results: The entire surface of the maxillectomy defect models were successfully scanned regardless of structural complexity, modeled as 3D data, and geometrically evaluated. All scans were performed in 7 min. or less. The overall mean 3D deviations \pm SD of the conventional impressions were $247.7 \pm 128.8 \mu\text{m}$ in the quarter defect cases and $197.2 \pm 81.7 \mu\text{m}$ in half defect cases. For the digital impressions, the overall mean deviations were $168.3 \pm 19.3 \mu\text{m}$ in the quarter defect cases and $170.2 \pm 24.0 \mu\text{m}$ in half defect cases. There was no interaction between defect types and impression methods. There was a significant difference between the two impression methods ($p = .0374$).

Conclusions: Digitizing edentulous maxillectomy defect models with the use of chairside intraoral scanners appears to be feasible and time-efficient. The results suggest further clinical investigations on digitizing edentulous maxillectomy defect patients to clinically verify the results of the present study.

Poster # 8

THE ROLE OF DIGITAL TECHNOLOGIES IN MAXILLOFACIAL PROSTHETIC 3D PRESENTATIONS

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Department of Maxillofacial Prosthetics
Tokyo, Japan

Purpose/Aim: A presentation is one of the best ways to convey ideas, especially for visualization. For many years, 3D visualization has been utilized in various medical applications, such as the evaluation of anatomical structures by means of computer tomography and magnetic resonance imaging technologies. On the other hand, the application spectrum of 3D visualization in maxillofacial prosthetics is still limited to diagnostic imaging and CAD/CAM technologies. The aim of this presentation is to highlight the required digital technologies that could be used for maxillofacial prosthetic 3D presentations.

Materials and Methods: In this presentation, 3D presentation techniques will be reviewed in two main streams; required hardware and software for 3D presentations, and 3D display techniques that could be used for 3D presentations.

Results: Five hardware and software were found to be required for 3D presentation production; (1) Digital SLR camera with 3D macro lens or two separate cameras synchronized with custom stand; (2) Twin-lens 3D video camera or two separate but synchronized video cameras; (3) Computer with two graphic cards that run simultaneously; (4) Photo and video editing presentation software; and (5) Single or double projection system with filtering system and 3D glasses. Also there were five techniques have been used for 3D display; (1) Anaglyph system which based on color filtering; (2) Polarization system which based on linear, circular polarizing, and liquid crystal filtering; (3) Interference filter technology which based on wavelength multiplex visualization; (4) Pulfrich (optical illusion) which based on transparent and gray filtering over one eye; and (5). Autostereoscopy which based on glasses-free 3D visualization.

Conclusions: The emergence of 3D technologies in patient education, teaching and communication activities in the field of maxillofacial prosthetics is inevitable. Soon, such 3D technologies will be used as tools to improve the 2D digital presentations, resulting in a better visualization and improved learning experience.

Poster # 9

IMPLANTS SUPPORTED OVERDENTURE FOR A MAXILLOFACIAL DEFECTS PATIENT

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Prosthodontics
Beijing, China

Keywords: implant overdenture

Case Presentation: Patient, man 55 years old, he had a mandibular broken ten years ago during a traffic accident. After splint fixed, he had to make a denture to restorative about 10 teeth. But the denture worked not well. We had tried to take out the screws and splints, and was not all done. We survey the CBCT picture seriously and put in 3 implants between the restricted bones. After 6 months osseointegration, we make an implant supported over denture for him. Then his chewing function is resumed exhaustively.

Poster # 10

IMPLANTO-PROSTHODONTIC COMPLEX REHABILITATION OF A DISABLED PATIENT WITH CEREBRAL PALSY

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Oral Surgery and Prosthodontics
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Keywords: disabled patient, cerebral palsy, implanto-prosthetic oral rehabilitation

Case Presentation: Cerebral palsy (CP) is a group of permanent movement disorders caused by abnormal development or damage to the parts of brain that control movement, balance, and posture. The most common problems include poor coordination, stiff/weak muscles, tremors, and involuntary movements.

Patient who referred to a dental office was normally intelligent. He could not control limb muscles and hands, and therefore had insufficient oral hygiene. He had involuntary head movements. All lateral teeth had been already extracted, his mouth was full of caries, plaque, calculus and gingivitis. He had Class III jaw relationship and no posterior antagonistic contacts.

He first received calculus, plaque and caries removal treatment, endodontic treatment and fillings together with the instructions on how to maintain proper oral hygiene. After his oral hygiene improved sufficiently he proceeded with an implant-prosthetic rehabilitation. After analysis of the casts mounted in the articulator (S.A.M. 2P, Germany) we established a treatment plan.

Implants (MIS, C1, Israel) were inserted in posterior alveolar ridges. Due to a small amount of available bone width, a split ridge technique was made and artificial bone (Bio Oss) soaked in I-PRF was placed with the A-PRF membrane and sutured (Fig. 2). Implants were left submerged and six months later healing abutments were screwed.

Cast post and cores were made and cemented (some teeth had caries below gingival margin and he had hypersalivation). Teeth preparations were finished. Final impressions were obtained with transfer abutments and an open tray technique. Jaw relationship was determined and casts were transferred into the S.A.M. articulator. Due to difficulties in obtaining mandibular impression (saliva, tremor) we obtained 3 mandibular impressions and 3 casts. First the maxillary FPD was finished and cemented. After that jaw relationship was re-checked and the left side mandibular FPD was finished and cemented. After that frontal and right side mandibular FPD was finished and in the end implant retained FPD.

All clinical steps were difficult to perform due to patient's tremor and involuntary continuous head movements. A year later patient had no complications and maintained satisfactory oral hygiene.

Acknowledgment: to MIS (Israel) for the donation of C1 implants and abutments



Poster # 11

IMPLANT-RETAINED FACIAL PROSTHESES: AURICULAR DEFECTS

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Case Presentation: Acquired mid face defects may produce functional and psychologic impairments that adversely effects a patient's quality of life. Conventional prostheses may lack adequate retention and stability, diminishing the patient's confidence that the prosthesis will remain in place during routine activities. Percutaneous endosseous implants have acquired an important place in the prosthetic rehabilitation of patients with craniofacial defects.

This paper describes a case report of a patient missing the hear, with two implants and a bar, having extracoronar castable precision attachment (RHEIN 83 OT CAP attachments system).

The objective of this study was to evaluate the clinical outcome of the use of endosseous implants in the auricular region as well as to assess the satisfaction of patients with implant-retained craniofacial prostheses. From this study, it is concluded that implant-retained facial prostheses are better tolerated than adhesive retained prostheses and offer an improvement in the quality of life.

Poster # 12

CBCT PLANNING OF ORBIT IMPLANTS AND POSTOPERATIVE STABILITY

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Keywords: CBCT planning, orbit implants

Case Presentation: Implant stability in the orbit is crucial for better retention of epithesis. The aim of this presentation was to show three cases that were indicated for orbit implants from planning stages to final results.

Materials and Methods: All three patient involved in this report were scanned by CBCT and had presurgical planning. Using InVivo Anatomage 5.2 software. All of them got two disc implants one medial and one lateral. For postoperative follow up ISQ was measuerd with Ostel Mentor, Sweden, ISO range 1-100 was used. Measurements was preformed from three different angles and the middle value was taken first measurement immediate three months later, third six months post surgically

Results: Immediate postsurgical stability for lateral implant for first patient was 35, for second 49, for third 70 ISQ. Three months post surgically stability for lateral implant for first patient was 37, for second 52, for third 75 ISQ. Six months post surgically stability for lateral implant for first patient was 49, for second 59, for third 78 ISQ.

Poster # 13

FRACTURE RISK ASSESSMENT OF MANDIBLE WITH DIFFERENT DEFECT PATTERNS

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National Taiwan University Hospital, Taipei, Taiwan
Taipei, Taiwan, China

Keywords: marginal mandibulectomy, fracture risk, finite element analysis

Purpose/Aim: Human mandible deforms under loads. Magnified and concentrated stresses are usually present in the residual bone near the defect after marginal mandibulectomy. Risks of mandibular fracture are related to residual bone height, extent and location of the defect, and loading patterns. However, limited researches have provided protocols of reinforcement. The aim of this study was to investigate the factors of fracture risk in resected mandibles, further, to establish protocols for reinforcement.

Materials and Methods: A basic finite element model of mandible was built from CT image and virtually loaded by muscle forces. This basic model was verified by the distance change between bilateral premolars caused by mandibular flexure. The material property of bone heterogeneity was set as transversely isotropic. The basic model was transformed into different test models which were designed according to (1) defect extent (34 mm and 48 mm), (2) residual bone height (5, 7.5, 10, 12.5, and 15 mm), and (3) defect location (incisor, left premolar and left molar regions). The boundary condition was simulated by muscle load and tooth contacts during incisal biting or right molar biting. The von Mises stress distribution surrounding the defect of each test model was evaluated.

Results: The data of model verification coincided with literature. The highest stress always appeared near angles of the defects. The stress was higher during right molar biting than incisal biting. The molar region defects models usually showed highest stress during molar biting. The wider defect (48mm) showed higher stress than the narrower defect (34mm). The less the residual bone height remained, the more the stress value increased. In model with narrower defect at incisor region, the fracture risk was low even only 7.5mm height of bone remained. However, in model with wider defect at molar region, stress approached to microdamage level (60MPa) if the residual bone height was less than 15mm.

Conclusions: The fracture risk of mandible with marginal mandibulectomy is related to the defect extent, residual bone height and defect location. Proper reinforcement should be considered after risk assessment based on those factors.

Poster # 14

CRANIOFACIAL IMPLANT STABILITY MEASUREMENT BY MEANS OF RESONANCE FREQUENCY ANALYSIS

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Keywords: craniofacial implants, osseointegration, resonance frequency analysis

Purpose/Aim: It is clinically proven that implant stability plays an important role in all therapeutic stages and allows us to predict the ultimate outcome of rehabilitation. As the success of implant-prosthetic rehabilitation often depends on biomechanical factors, the data on the stability of the implant reduces the risk of failure. One of the methods used to determine stability (the level of osseointegration) in dental implants is resonance frequency analysis (RFA) and the implant stability is presented as implant stability quotient (ISQ) value. The higher the ISQ value the better is the implant stability. On the other hand, its low values indicate possible

complications, such as loosening of implants, periimplantitis and poor distribution of the forces on the surrounding tissue.

Measurement of the implant stability is mainly related to intraoral implants, cylindrical or conical shape. In maxillofacial implantology there are specially designed screw shaped implants, as well as disk-shaped implants within the basal osseointegration.

The aim of the research was to determine the implant stability quotient of craniofacial implants and correlate it with osseointegration over time, design of the implant and their localization.

Materials and Methods: This study included 20 patients, both sexes, with orbital, nasal and auricular defects treated with extra oral disk implants (mono, double, triple) and screw implants, placed for facial prostheses anchorage. Implant stability was measured three times, immediate after implant placement, after 3 months and 6 months after implant placement. Device used to measure implant stability was Osstell Mentor. Implant stability quotient-ISQ was the result of the analysis of resonant frequency (resonance frequency analysis - RFA).

Results: An increase in implant stability values was noted between all the measurements, except for triple disk implants between 3rd and 6th month, and screw implants between 0 and 3rd month. Disk implants showed lower ISQ values compared to screw implants. Triple disk implants showed better stability compared to single and double disk implants.

Conclusions: It is possible to monitor the stability of craniofacial implants adequately over time, by means of resonant frequency analysis method. According to RFA, implant stability increased over time, which showed good osseointegration and increasing mineralization.

Poster # 15

CBCT CHARACTERISTICS OF PATIENT WITH BILATERAL SIMULTANEOUS BRONJ OF MAXILLA

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Keywords: BRONJ, CBCT, imaging

Case Presentation:

Background:

BRONJ in a short time became the main and most speculated adverse effect of the bisphosphonate (BPs) therapy. Because of the low response rate, BRONJ still present important part in research in the maxillofacial region.

Case Report: The objective of this case was to evaluate pattern of bone changes in BRONJ patient, treatment planning and follow up using CBCT.

The patient with renal cell carcinoma developed BRONJ in the upper left part of the maxilla after extraction of teeth 24 and 25 is presented. He was under BPs due to bone metastasis in the vertebral column and rib. Moreover, he has developed BRONJ spontaneously in the right tuberosity of maxilla during follow up period after interruption of bisphosphonate therapy. He was received Zoledronic acid, 4 mg per month for 3 years. In order to improve preoperative stage and to reach adequate treatment modality we performed CBCT (SCANORA 3Dx®, Tuusula, Finland). Quantification of measurements using ROI and Profile function under the On Demand program were used. Axial view of CBCT confirmed our findings and revealed sequestrum. 3D mode view in Scanora 3D software is especially useful tool. Using 3D zoom tool it is very easy to eliminate other structures which could interfere with region of interest. It was very important to avoid superimposition of other bony structures. Using this sophisticated method we predicted bone sequestration in the left maxilla. According to the radiological preoperative findings we performed sequestrectomy meticulously. Follow up showed no progression of the disease and slight resolution.

Conclusions: BRONJ is a serious negative side effect of bisphosphonate therapy, that impacts negatively on patients' quality of life since it is painful and often without adequate response to the applied therapy. Due to its variability in imaging, resolution and possibility of prediction bony lesions with high accuracy, CBCT could be of great importance in the treatment of BRONJ patients. CBCT could improve surgeon to predict treatment modalities (type of bone resection, more precise in relation to other diagnostic modalities) which is important for final outcome. BRONJ certainly requires attention and further investigation. Effective treatment could be achieved if only etiopathogenesis was clarified. CBCT doubtless could be of great importance in estimation of osteolytic process invasion and staging of the BRONJ disease.

Poster # 16

ASSESSMENT OF HYBRID AND REMOVABLE PROSTHESIS IN MANDIBULECTOMY PATIENTS

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Keywords: mandibulectomy, hybrid, removable

Purpose/Aim: The challenges in the rehabilitation of patients with mandibulectomies make it necessary to manage treatment strategies that meet the patients' expectations. The purpose of this study was to evaluate the satisfaction and oral health-related quality of life of these patients with implant supported removable and hybrid prosthesis.

Materials and Methods: Patients with 2 implant supported removable prosthesis and 4 implant supported hybrid prosthesis completed an oral health Impact profile (OHIP) and oral health-related quality of life (OHQoL) for the assessment of quality of life and VAS scales were used to validate their general satisfaction, as well as the features of their dentures. 2 months postdelivery, all subjects completed the health status measures again and preoperative data were compared with postoperative data.

Results: Both designs were associated with significant improvements in comfort and retention, function, esthetics, taste, speech, and self-esteem. No differences were found between 2 groups with respect to how the patients assessed the implant therapy.

Conclusions: These short-term results suggest that mandibular implant supported removable and hybrid prosthesis provide better function and oral health-related quality of life over conventional treatment. It was concluded that both types of prostheses were perceived as being equally satisfactory by edentulous patients.

Poster #17

DENTAL REHABILITATION AFTER MANDIBULAR DEFECT RECONSTRUCTION WITH FREE FLAP

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Keywords: ameloblastoma, free flap, dental implant

Case Presentation: Introduction: Ameloblastoma is a benign tumor which arises from dental epithelium. Because of its aggressive growth it is necessary to remove it radically. The consequence is disrupted continuity of jaw bones. For a good functional and esthetic result it is urgent to reconstruct the defect with a free flap and dental implants.

We represent a case report about ameloblastoma removing and reconstruction of resulting defect with a free flap and dental implants.

Case Report: 31- year old patient with histological confirmed ameloblastoma in mandible was operated at Department for oral and maxillofacial surgery, University Medical Centre Ljubljana in December 2012. The resection of lower jaw bone from first right premolar to mandibular angle was done. During the resection the nervus alveolaris inferior was preserved using piezosurgery. For defect reconstruction osteo-muscle-cutaneous left fibula free flap was used.

Before the implant insertion we reduced the cutaneous part of free flap with liposuction. The vestibuloplasty with acrylic plate which was fixated with two screws was also done. The two A14 dental implants were inserted in fibular bone on place of first and second molar. Implants were covered with granules of xenograft bone.

Four months after insertion the implants were uncovered and sulcus formers were mounted. Patient was then transferred to prosthodontist.

At last control exam in March 2016 was patient without problems. Prosthetic construction was screwed on implants. The periimplant tissues were without inflammation. There was minimal sensory deficit in lower lip, but it wasn't disturbing for patient.

Conclusion: Presented case shows possibility to insert dental implants and making functionally and esthetically satisfactory prosthetics constructions on reconstructed parts of jaws. Soft tissue preparation is very important before implantation because it reduce the possibility of inflammation after the implant is burden. Dental rehabilitation after reconstructive surgery improves patient quality of life.

Poster #18

ORTHOGNATIC SURGERY IN A PATIENT WITH PFFEIFER SYNDROME - CASE REPORT

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Keywords: Pfeiffer, Orthognatic surgery, Lefort I

Case Presentation: Introduction: Pfeiffer syndrome is a rare autosomal dominantly inherited disorder. It is associated with midfacial retrusion, craniosynostosis, broad thumbs, large toes and partial syndactyly. Dental features are: maxillary hypoplasia, class III malocclusion, anterior and posterior cross-bite, anterior open bite, teeth crowding. In addition, patient can have psychosocial problems due to their appearance. Surgical timing and planning is based upon severity of skeletal and dental problems and severity of patient's psychosocial condition.

This was a charity surgical treatment. In the period of two months all surgical and most orthodontic treatment is to be completed. Our aim was to achieve good results with combined two stage surgery and orthodontic treatment in the short period of time.

Case Presentation: Nineteen-year-old patient was diagnosed with Pfeiffer syndrome at birth. She already had nine surgical procedures. All of them were in calvaria and cervical spine regions. Her dental features were maxillary hypoplasia, anterior open bite and mild teeth crowding.

Her main complaint was malocclusion and prominent nose. She was examined by a neurosurgeon, an ophthalmologist, an ENT surgeon, an anesthesiologist. CBCT, panoramic and AP X rays, sleep study were made. Orthodontic preparation with 3D planning was performed. We decided to perform two stage surgical procedure. First LeFort I osteotomy with advancement of the maxilla and (BSSO) bilateral sagittal split osteotomy with advancement of the mandible, followed by orthodontic treatment. Second procedure is nasoseptoplasty.

During orthognatic surgery maxilla was advanced for 12 mm, with posterior impaction 3mm and anterior extrusion 2mm. The mandible was moved forward on the right side for 2 mm and setback on the left for 1 mm. We augmented anterior surface of the maxilla with bone grafts. Patient did not need IMF. Two weeks after the procedure we started with orthodontic treatment. One month after the first operation nasoseptoplasty was performed.

Conclusion: The result of our treatment was satisfaction of all; patient and her family as well as the surgical team. Occlusion was stable and functional. Profile went from concave to straight. Better facial symmetry was achieved.

In patients with Pfeiffer syndrome good results can be achieved with a combination of different surgical and dental treatments.

Poster #19

PREOPERATIVE PREDICTION OF IMPLANT-PROSTHETICS TREATMENT FOR MAXILLOFACIAL PROSTHETICS USING FEA

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Purpose/Aim: It is not easy to find a scientific tool for the prediction of the prognosis in the prosthodontic treatment using dental implant. The purpose of this study was to use finite element analysis as a method for the preoperative prediction tool in the treatment planning for implant-assisted prosthodontic treatment.

Materials and Methods: A patient's 3D computer model was constructed based on the patient's computed tomography data. The patient underwent mandibulectomy and the mandible was surgically reconstructed using the fibula graft. The DICOM format image data were imported into the implant planning software and three-dimensional representation of the skull, the reconstructed mandible and the CT template were made. The virtual placement of the implants was performed and prosthesis was designed using dental CAD software. These computer models were converted to three-dimensional finite element models. Finite element analysis was done with loads simulating masticatory force on the prosthesis mastication after considering appropriate boundary conditions and material properties of the components. Von Mises stresses and displacements of the components were analyzed.

Results: The von Mises stress values were obtained and stress distributions were observed. The patterns of stress distribution and the displacements of the components produced information on the prognosis of the implant treatment in the treatment planning stage.

Conclusions: The results of this study suggested that the use of finite element analysis might be useful as a preoperative diagnostic tool for the prognosis of the implant treatment.

Poster #20

ACRYLIC RESIN FACIAL PROSTHESES

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Keywords: facial prostheses, acrylic resin

Case Presentation: Facial defects can result from traumatic injuries, surgical resections, acquired infections, congenital anomalies, and burns. Restoration of facial defects can be achieved either by surgical or prosthetic approach or in some complex cases through a combination of both. In contrast to the small facial defect that can properly restored surgically, large facial defects are challenging for both the Head and Neck surgeons and prosthodontists. When surgical reconstruction is not possible, prosthetic restoration of the facial defect is a treatment of choice. The success of the prosthetic rehabilitation of the facial defect is limited by mechanical and physical properties of the material selected for that purpose. Commonly used materials for construction of facial prostheses include: Acrylic resins and its copolymers, vinyl polymers, polyurethane elastomers, and silicone elastomers.

This paper includes the historical overview of acrylic resin facial prosthesis produced at our School of Dentistry in Belgrade through several clinical cases.

Acrylic resin was introduced to the dental profession in 1937 and our Department started to use this material

from 1948 and it is used in fabricating both intra- and extra-oral prostheses. Even today in rare clinical cases we use resin for fabrication of facial prostheses. After impression and making master cast the prostheses is sculpted in wax. The wax pattern is invested with gypsum usually in two mold piece. To achieve adequate skin color, resin colored small plates were fabricated for each patient individually before final processing by using transparent powder as base mixed with intensive colors and fibres. The resin then was prepared according the prescription which was made for patients individually. Before processing a final color checking was performed with the possibility of correction. The prosthesis is usually attached to the framework of spectacles. It is used particularly in those cases in which minor movement of the tissue bed takes place during the function.

Advantages of acrylic resin facial prosthesis are durability, translucency, colorability and easy of processing. The disadvantages are the rigidity and color changing if they are exposed to UV light for longer time.

Poster #21

PRIMARY RECONSTRUCTION OF THE MOUTH FLOOR DEFECTS

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Keywords: Platysma myoarterial flap, oral carcinoma, mouth floor and tongue

Purpose/Aim: Many methods, i.e. flaps, local, regional or free, are proposed for reconstruction of postoperative defects of the tongue and mouth floor. Literature mostly describes the use of local myocutaneous flaps. The aim of this research was to evaluate the possibility and potential of the primary reconstruction of postoperative defects with myoarterial platysma flap.

Materials and Methods: Postoperative defects treated in this paper were the result of ablation of planocellular carcinoma of the tongue and floor of the mouth (T1-4,N0-1,M0) followed by appropriate neck dissection. Primary reconstruction was performed with myoarterial platysma flap. We assumed that platysma muscle would be the most adequate substitute for the removed tissue due to its characteristics (appropriate length, thinness, relatively easy preparation, and good anatomical position with regards to defect that needs to be reconstructed). Control group consisted of patients whose healing had been per secundam intentionem. Reconstruction of floor of the moth defects was evaluated by analysing different parameters.

Results: In this paper the results of functional evaluation were presented through tests of speech, swallowing, quality of life and cosmetic effect. Based on the obtained results we concluded that platysma myoarterial flap in relation to myocutaneous flap has advantages, primarily because of the skin absence (there is no dermolysis and epithelisation is faster). Myoarterial flap is thinner for the thickness of skin island which makes manipulations in the mouth much easier, and in the same time it is good as water-resistant and mechanical barrier towards the mouth floor. Smaller mass of the flap enables better tongue mobility which is very important in order to preserve functions of eating and speech.

Conclusions: Functional results - speech and swallowing, as well as esthetics were very good. Quality of life of the treated patients was evaluated as very good.

Poster #22

PROSTHETIC REHABILITATION OF AN ADENOCARCINOMA OF THE MAXILLA

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Keywords: prosthetic rehabilitation, surgery rehabilitation, implant

Case Presentation: The adenocarcinoma is at the beginning of a resection of one or the both maxilla. In this case presentation, a first resection of the left maxilla was made in 2007 followed by a radiotherapy at 70 Gys. At that time, a prosthetic maxillofacial rehabilitation with an obturator and a removable prosthesis was made; a seconde offense required a new resection spread to the right maxilla in 2009 followed in 2010 by a surgical reconstruction with a fibula scrap (Pr Sébastien ALBERT, ORL Department, Bichat Hospital). A new removable prosthesis was unsuccessfully made. Patient is sent in the Department of Maxillofacial Prosthetic in Lariboisière Hospital after failure of a removable rehabilitation. The choice for a new rehabilitation was to make a rehabilitation fixed to 4 implants realized between 2014 and 2015. The fixed rehabilitation after surgical resection and reconstruction of the maxilla is the best solution for the patient for the quality of life allowing a good chewing, phonation and aesthetic.

Poster #23

IMPLANT RETAINED OVERLAY PROSTHESES IN MANDIBLE WITH BONY DEFECT

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Keywords: mandibular defect, dental implants, Hader bar

Case Presentation: Female, 38 years old referred to Department for Prosthodontics at School of Dental Medicine in Belgrade with bony defect in the mandible. She had a partial acrylic resin denture in the maxilla and mandible.

The aim of this case report is to present the possibility of prosthetic treatment the patient with mandibular defect with denture on implant assisted tissue bar.

The posture of the tongue and the soft tissue in the anterior portion of mandible was altered during the prior surgical treatment and the partial acrylic resin denture was not stable during oral functions. It was decided to place three implants in the mandibular anterior teeth region and to splint them with a Hader type bar. After a detailed clinical and radiographic analysis the old denture was utilized for the surgical guide. Three KOS (Ihde Dental im[plants, Switzerland) one piece implants were placed in the mandibular anterior portion. After osseointegration period an implant assisted tissue bar (Hader type) was fabricated and an acrylic resin overlay prostheses.

The placement of implants improves the prosthetic prognosis dramatically for most of patients with mandibular soft tissue and bony defects.

Poster #24

OCULAR & ORBITAL PROSTHETIC REHABILITATION IN THE OMF PROSTHETIC SERVICE, 5YEARS EXPERIENCE, REPUBLIC OF MOLDOVA

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Purpose/Aim: The PMSI Institute of Oncology is the only hospital of the Republic of Moldova providing specialized treatment for the Head and Neck cancer patients in the country (population -3.550 000). In June 2010 OMF prosthetic service, initiated by project "SmilesforMoldova" supported by UMC Groningen team, was officially opened. Treatment and rehabilitation for cancer patients is covered by National Insurance Company. The Foundation Smiles for Moldova collected finances for sustained support for care and development in the MFP service. The OMF rehabilitation and reconstruction team for of Head and Neck cancer consists of 6 specialists from different disciplines, working together in order to cure and care for the head and neck diseased patient. Palliative care is not yet a recognized specialty in the country.

Materials and Methods: During our activity as a OMF prosthetic center, we were asked to rehabilitate not only cases after tumor surgery, but also patients after loss of an eye as a result of a severe trauma, congenital abnormality, infections, or untreatable painful glaucoma. In those situations, the natural eye was removed by enucleation or evisceration. When the entire content of the orbit (including muscles fascia, eyelids, conjunctiva and the lacrymal apparatus) was removed, the artificial replacement was referred to us for an orbital prosthesis. Our objectives included: restoration of esthetic appearance, protection of tissues, therapeutic or healing effect, and being part of psychological therapy. The OMF rehabilitation team consists of a Head and Neck surgeon, a radiologist, a radiotherapist, a chemotherapist, a reconstructive surgeon, a stomatologist-prothetist, a maxillofacial technician, a palliative care doctor, a nurse, Hands on consultancy was supplied 1-2 times a year and distant support by SfM (Robert van Oort, Harry Reintsema, Anton Strabbing). Taking into consideration the number of the ocular cases, we established a good collaboration with ophthalmologists from Moldova.

Results: From 2010-2015 478 patients benefited of MF prosthesis rehabilitation service; 245 represented ocular and 23 orbital prosthesis. The supply of custom-made ocular prosthesis has been given to the average patient, who cannot afford expensive treatment options available. The esthetic and functional outcome of the individually made prostheses was superior to stock ocular prostheses. Patients were satisfied with the results. They appreciated the concept of the multidisciplinary approach for the individual case. Continuous improvement of cure and care is one of the following tasks to help these patients in an efficient way.

Conclusions: The unique OMF prosthetic service in Moldova is considered as an example of a successful collaborative effort done by a committed international team. The service became a qualitative high standard in cancer care in Moldova. Continuing evolution of the service is in progress. Prices for H& N MF Cancer Prosthetic patients was developed and approved. Accreditation for medical activity of the service for the next 5 years was successfully passed. Continuing medical education for the staff is established locally (once per year). Effective collaboration with ophthalmological service in the country is growing. We developed a new approach in postsurgical rehabilitation for cancer patients in Moldova: multidisciplinary team in H&N prosthetic service. We follow some indicators of our results: number of the primary consultations, number and quality of the prostheses, repeated consultations, number of the training / courses for the medical personal of the service.

Poster #25

PROSTHETIC REHABILITATION AFTER HEMI-MAXILLECTOMY WITH SHORT IMPLANTS IN THE ZYGOMA

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Keywords: implant, zygoma, prosthesis

Case Presentation: A male patient (°1966) was treated for an ameloblastoma on the right maxilla and in the right nasal cavity, by means of a hemimaxillectomy. A silicon obturator and removable partial prosthesis were made to restore function. For reasons of optimal follow-up, reconstructive surgery will not be performed until five years after removal of the tumor. Nevertheless, a more functional and stable prosthetic solution was required to allow the patient to continue his professional activities. Despite good function in comparison to similarly treated patients, the patient asked for a prosthetic solution with better retention and sealing of the defect. He often experienced difficulty in speaking and diminished breathing ability. Radiologic inspection indicates the possibility to place 2 short (8mm) implants in the zygomatic region. These can then support a bar which will increase prosthetical stability and retention and therefore a more reliable seal of the resection. A speech therapist advised on the shape of the palate. In time, this solution is not expected to compromise a free graft reconstruction. This abstract presents a case report of an implant supported prosthetic solution after hemimaxillectomy to provide optimal function without compromising follow-up and future surgical reconstruction.



Poster #26

OSTEORADIONECROSIS: A MINOR PROBLEM OR A MAJOR CONCERN?

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Keywords: osteoradionecrosis, quality of life, ORN management

Case Presentation: Osteoradionecrosis (ORN) "has been defined by many clinicians as exposure of bone within the radiation treatment volume that persists for 3 months or longer" (Beumer et al, 2011).

The incidence of ORN depends on many factors such as the type and dose of radiation, the radiation site, the patient's dental status and others. The low incidence gives an impression that it is a 'minor problem'

considering the fact that it is a consequence of a treatment that saves many patients' lives. On the other hand the consequences of ORN can be quite debilitating to those who are unfortunate to experience it. Lack of standardized or universal protocols in how to manage this condition make it a 'major concern' to those involved in treatment or management. Treatment modalities such as Pentoxifylline, tocopherol, clodronate, and hyperbaric oxygen have in certain instances shown some promise, but also little effect in managing ORN.

Clearly prevention of ORN would be ideal, but there are many challenges that make it difficult to prevent ORN with certainty, such as a seeming predisposition in some patients, and spontaneous occurrence in others who are compliant and have taken necessary precautions for prevention. The need for a multidisciplinary approach plays a critical role in preventing and managing ORN, which presents its own difficulties in terms of team responsibilities and the ultimate responsibility for managing the ORN patient.

This topic will be discussed using a case of a patient who had ORN. The presentation will take us on a journey of this patient whose life was turned around by cancer diagnosis. He then regained hope when the cancer was treated with radiation therapy, only to get ORN which led to him having a poor quality of life due to the impact of ORN on his daily activities and work.

It is clear that something needs to be done to improve the existing situation with ORN. The need for universal protocols, more research in ORN management strategies, better working relationships amongst health care professionals, and more informed patients are all necessary to combat this condition.

Poster #27

COLOUR-DIFFERENCE THRESHOLDS IN SILICONE MAXILLOFACIAL PROSTHESES: SPECTROMATCH DIGITAL SYSTEM

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Purpose/Aim: To determine threshold Delta E (ΔE) (CIE $L^*a^*b^*$ values) of perceptible and acceptable colour differences, in the reproduction of medical grade elastomers (silicone) for maxillofacial prosthetics, light to dark skin tone, with the Spectromatch Pro digital colour system (Spectromatch Ltd. UK).

Materials and Methods: 8 subjects; four ethnic groups, two White, two Black, two Chinese, and two Indians, were consented. A facial skin colour scan, (Konica Minolta 2300D) was taken for each subject. The spectral data of the 8 subjects' skin colour scan-measurements were selected as the baseline colour, and a gradient error model was designed with an in-built colour $L^*a^*b^*$ gradient error-deviation of: 0.5; 1; 1.5; 2; 2.5; 3; 3.5; 4; 4.5; 5; 5.5; 6; 6.5; 7; 7.5; and 8 ΔE values; for L^* $n=32$; a^* $n=32$; and for b^* $n=32$; [16 (+) and 16 (-)] respectively.

The scan gradients for each subject including the base colour ($n=97$) were electronically formulated, a formulae recipe created and silicone samples processed (M511, Technovent Ltd. UK). In total ($n=776$) silicone samples were used to assess the perceptible and acceptable colour difference (ΔE) for eight subjects as judged by a panel of colour assessors ($n=12$). Colour assessments were performed in a standardised clinical room, neutral grey (mat paint) and D65 lighting condition. Data analysis: for perceptible/acceptable colour difference ΔE markers, one-way analysis of variance (ANOVA) ($p<0.05$). The assessment score of "2" was used as the threshold for "acceptable colour difference" (scoring system 0-4); a regress assessor "colorparam" - quadratic formula equation for two way analyses applied.

Results: The Delta E threshold for all groups was ΔE 1.54. When the different ethnic groups were considered, (ΔE) threshold for the White, Chinese and Black were ΔE 1.61; ΔE 1.87; and ΔE 2.33; respectively. The ΔE for the Indian was not detected in this study.

Conclusions: This study identify the base line Delta E (ΔE) values for future facial skin colour matching studies using the Spectromatch digital colour system. A novel scientific finding by objectively defining the perceptible and acceptable (ΔE) thresholds (1) of colour matching in facial prosthetics (Mean ΔE 1.54), (2) the relationship to human eye sensitivity and the colour perception / acceptance for silicone skin colour match based on the CIE Lab colour model and the Spectromatch Pro digital colour system.

Poster #28

ORBITAL PROTHESIS: A NOBEL RECONSTRUCTIVE APPROACH

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Case Presentation: ORBITAL PROTHESIS : A NOBEL RECONSTRUCTIVE APPROACH ABSTRACT:- The eye is a vital organ and an important component of facial expression. Loss of an eye causes functional impairment, disfigurement of the face and has a crippling effect on the psychology of the patient. If reconstruction by plastic surgery is not possible or not desired by the patient, the defect can be rehabilitated by an orbital prosthesis. Rehabilitation by a prosthodontist can be done in one of two ways. One treatment modality is use of implants. Although implant supported prosthesis have a superior outcome, it is not commonly preferred by the patients due to increased cost involved in treatment. The second and more frequently practised treatment modality is adhesive retained prosthesis. A cosmetically acceptable prosthesis is that which reproduces the natural color, contour, size and its iris orientation. A sequence of steps for the construction of a custom made ocular prosthesis is elaborated in this poster. AUTHORS :- 1) Dr. Umang Shah* 2) Dr. Jyoti Pawar* 3) Dr. Ramandeep Sandhu* *Post graduate student, Dept. Of Prosthodontics, M.A. Rangoonwala Dental College and Research Centre, Pune, Maharashtra.

Poster #29

CARIES AFTER RADIATION THERAPY IN HEAD AND NECK REGION

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Keywords: radiation caries, fluoride, calcium and phosphate

Purpose/Aim: Patients radiated in the head and neck region are at greater risk for developing dental caries. Due to radiation the chemical and microbial situation in the mouth turns to be more cariogenic. In more than half of the patients, the dentition is deteriorated over time. The incidence is related to the radiation dose, with a 2-3 times higher risk at a dose of 30-60 Gy, and a 10 times greater chance at a dose greater than 60 Gy. At high doses the salivary glands are irreversibly damaged. The salivary flow decreases and also the quality of the saliva decreases turning the mouth into an acidic environment, the pH-value drops to below 5.5. At a pH lower than 5.5, continuous demineralization of the teeth occur. Also due to the decreased salivary flow there are less calcium and phosphate ions available for remineralization of the teeth. The radiation also has effects on the tooth structure; the enamel-dentine junction becomes weaker, resulting in fractures in the tooth structure. Also in the patient described, enormous deterioration was seen.

Under current protocols, patients undergoing radiation treatment in the head and neck are treated with fluoride carriers with a pH-neutral buffered 1% NaF-gel to prevent radiation caries. Nevertheless, in cases much caries activity still can be seen also on the smooth surfaces of the teeth of irradiated patients. The question arises whether the applied prevention protocol is sufficiently effective. Studies show that in addition to fluoride calcium and phosphate also play a role in the remineralization process.

Materials and Methods: In Pubmed was searched for an answer on the following question with the PICO-method:

“Ensures the administration of fluoride, calcium and phosphate to a lower caries incidence than the administration of fluoride only in patients who have been irradiated in the head and neck area?”

Results: 5 articles were found that met the in- and exclusion criteria. Four articles were positively about the addition of calcium and phosphate, one article did not find a significant difference between the groups that brushed their teeth with fluoride, calcium and phosphate, or with both fluoride and calcium plus phosphate.

Conclusions: The conclusion of this search is that calcium and phosphate ions are necessary for the remineralization of tooth structure as well as fluoride, which serves as a mediator in this process. In an acidic mouth environment, in irradiated patients, addition of calcium and phosphate ions as well as fluoride are needed for the remineralization of the teeth. The recommendation is made to investigate the effect of addition of calcium and phosphate in the described group of patients.

Poster #30

TRISMUS IN 160 PATIENTS RADIATION-TREATED FOR HEAD AND NECK CANCER

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Keywords: Trismus Radiotherapy

Purpose/Aim: To investigate the prevalence of trismus after head and neck radiation,

Materials and Methods: 160 patients participate this prospective study. The MIO of each patient was measured before, during, at the end of, 1 month after, 3 months after and 6 months after radiation treatment. A mouth opening of ≥ 35 mm was regarded as the functional cut-off point for trismus.

Results: 2. Before treatment, the MIO of 27.5% of the patients < 35 mm; Six month after treatment, the MIO of 45.5% of the patients < 35 mm. Before treatment the mean MIOs of maxilla and mandible cancer patient, oral cavity and lip cancer patient, parotid cancer patient were < 35 mm, the mean MIOs of cancer patients in nasopharynx, oropharynx, laryngeal pharynx, nasal cavity and sinus were > 35 mm. During treatment, only the mean MIOs of maxilla and mandible cancer patient increased, the mean MIOs of all other patients decreased. At the end of treatment, the mean MIOs of all patients decreased. One month after treatment, the mean MIOs of all patients recovered. Six month after treatment, the mean MIOs of maxilla and mandible cancer patient, oral cavity and lip cancer patient, parotid cancer patient were < 35 mm, the mean MIOs of cancer patients in nasopharynx, oropharynx, laryngeal pharynx, nasal cavity and sinus were > 35 mm.

Conclusions: This study reports a high incidence of trismus in H&N cancer patients after radiotherapy. It was found that the location of tumor was related to significantly more trismus.

Poster #31

COMPUTER-AIDED DESIGN AND RAPID PROTOTYPING TECHNOLOGY IN BONE DEFECT RECONSTRUCTION

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Keywords: Blow-out, orbital floor, PDLA implant

Purpose/Aim: Importance of virtual modelling and rapid prototyping (RP) over the last few years has been pointed out. RP one of the technologies that have been growing fast at the moment. It appears that cranial and maxillofacial regions are highly suitable for implementation of this type of technology. The purpose of this study is to determine efficiency of individually designed implant of Poly-DL-Lactide (PDLA) in the reconstruction of blowout fractures of the orbital floor.

Materials and Methods: In the course of a surgical treatment, individually designed implants manufactured by CAD/RP technologies were used. Preoperative analysis and postoperative monitoring were conducted to evaluate successfulness of orbital floor reconstruction using customized PDLLA implants, based on: presence of diplopia, paresthesia of infraorbital nerve and presence of enophthalmos.

Results: In 6 of the 10 patients, diplopia completely disappeared immediately after surgical procedure. Diplopia gradually disappeared after one month in 3 patients, while in one, remained permanently present, even after 6 months. In 7 patients, paresthesia disappeared within a month after surgery, in 3 patients within two months. Postoperatively enophthalmos was not present, because the orbital volume of corrected orbit, was not different compared to the orbital volume of the uninjured orbit.

Conclusions: Application of polydioxanone lactide PDLLA in combination with CAD and RP technologies in clinical practice provides a great opportunity for the successful treatment of blow-out fractures of the orbital floor.

Poster #32

THE EFFECT OF TOO MUCH CARING: A PRELIMINARY STUDY

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Keywords: Burnout, psychiatric morbidity, cancer clinicians

Purpose/Aim: To determine the presence of burnout and psychiatric morbidity among prosthodontists who provide a service to head and neck cancer patients.

Materials and Methods: All specialist clinicians employed in the Department of Oral Rehabilitation at the University of the Witwatersrand will be asked to complete two questionnaires. The sample consists of those who are involved in the care of head and neck cancer patients and those who are not, such that the latter group can serve as a control. The two questionnaires include the Maslach Burnout Inventory (MBI) and the General Health Questionnaire (GHQ-12), following a focus group discussion to determine the stressful and satisfying aspects of their work which can then be included in the questions. MBI assesses the three components of burnout (emotional exhaustion, depersonalization, and personal accomplishment), and GHQ-12 was designed to screen for non-psychotic psychiatric morbidity.

Results: The results will be based on the guidelines of these assessment tools. In the MBI each of the 22 items is measured on a seven-point Likert-type scale with a possible range of 0-6. High level emotional exhaustion is defined as a score greater or equal to 27, an increased level of depersonalization is marked by a score greater or equal to 10, and a low personal accomplishment is marked by a score less than or equal to 33. In GHQ-12 each of the twelve items is scored 0 (less or more than usual) or 1 (rather or much more than usual), and scores greater or equal to 4 are to be regarded as indicating the presence of psychiatric morbidity. Results to be presented once adequately analysed.

Conclusions: Burnout is a work-related condition, a psychological state which may not be readily detected. This condition is said to occur most frequently among those who work closely and for prolonged periods with people; as is the case with cancer clinicians (Asia et al, 2007). The current literature suggests that there may be a need to provide support for those involved in cancer patient management over prolonged periods, we therefore need to identify possible stressors as well as appropriate interventions to maintain the wellbeing of these clinicians.

Poster #33

PROSTHETIC REHABILITATION OF A PATIENT WITH BILATERAL MAXILLECTOMY: A CASE REPORT

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Keywords: bilateral maxillectomy, obturator prosthesis, reconstruction

Case Presentation: Fabrication of obturator prosthesis is obligatory procedure in the treatment of patients with tumors in the region of the maxilla. A particular problem is the situation of bilateral surgical resection of the maxilla.

The aim of this paper was to present the possibility and outcome of prosthetic rehabilitation in a patient with bilateral maxillectomy defects.

A 73-year-old female patient after bilateral maxillectomy underwent radiation therapy. After 6 months and careful planning on the basis of MDCT two zygomatic and one tubero-ptyergoid implants were placed to improve denture retention (Dr. Ihde Dental AG, Switzerland). Patient reported to the Clinic for Prosthodontics, School of Dental Medicine, University of Belgrade. Considering the arrangement of the implants, retention bar was made on the left side and on the zygomatic implant abutment on the right side suitable retentive ball attachment. Bar and the ball were connected to abutment with cement. Wax plate 4-5 mm thick was adapted over the palate. The wax model of the palate is converted into heat curing acrylic resin and used as a definitive record base for intermaxillary relations records. Following procedures were identical with fabrication of conventional complete dentures.

Reconstruction after bilateral maxillectomy is essential to prevent aesthetic and functional problems. The lack of palatal vault is an additional difficulty in the manufacturing of obturators on complete dentures. This is often the reason for rejection of this kind of prosthesis by the patients.

Poster #34

PROSTHODONTIC REHABILITATION FOR A PARTIAL MAXILLECTOMY PATIENT

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Keywords: prostheses, plastic tray, cancer

Case Presentation: Postsurgical facial or bony defects often pose a challenge to patient rehabilitation. Such defects can have a severe effect on patient perceptions of body image and self-esteem.

1. Clinical Case History: The patient was a 74-year-old man who had received a surgical resection of the left part of the maxilla because of gingival carcinoma two months ago. Postsurgical maxilla defects posed a challenge to his daily life in the physically and psychologically. The patient asked for a defect rehabilitation. He didn't receive radiation therapy.

2. Professional Examination: The lower face of the patient was asymmetry with his left cheek slight collapsing. The MOD of the patient was 20mm between the incisor teeth remain on the nondefect side. The left maxilla was resected and teeth number 17,18 and 21-28 were missed. Nasal septum was exposed. The remaining teeth were slight compromised in periodontal bone support. The surface of the defect was mucosalised without skin flap. The vertical dimension was decreased because of the severe wear of remaining teeth.

3. Treatment process: The treatment was started as previously designed, after the treatment plan was accepted by the patient.

3.1. Routine periodontal treatment: Routine periodontal treatment included the scaling and the root planning.

3.2. Fixed Union Crown treatment: The two union crowns of three units, 11-13 and 14-16, were designed with vital pulp. The abutments were prepared by water cooling. Double-cord gingival retraction was utilized, and the siloxane was applied to make impression. The golden based PFM union crown was fabricated for anterior teeth and the golden alloy metal union crown was fabricated for posterior teeth. The vertical dimension was

increased by 2mm. The rest seats had been located on the mesial-occlusal aspect of the posterior teeth. For anterior teeth, there were well-prepared cingulum rests. Finally, the union crowns were adhered to the abutment teeth after adjustments.

3.3. Removal Partial Denture treatment: An individual impression tray was made by the thermoplastic tray, and then impression for framework was made with the individual tray and alginate impression material. Furthermore, the master impression was made and the metal partial denture framework was fabricated with Vitallium as previously designed.

After the metal framework was physiologically adjusted and seated properly. The altered cast impression was made. Then, the obturator was processed by conventional prosthodontic methods. Clinical trying in.

4. Conclusion: By the prosthodontic rehabilitation, this maxillectomy patient can partially recover the mastication, pronunciation, and aesthetics. He was satisfied with the obturator. And the usage of thermoplastic tray reduces the treatment time. In the end, the patient is able to resume social interactions more comfortably and confidently.

Poster #35

BIOMECHANICAL BONE RESPONSES BY MANDIBULAR RECONSTRUCTION WITH FIBULA FREE FLAP

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Keywords: Fibula free flap, Biomechanics, Finite element analysis

Purpose/Aim: The fibula free flap (FFF) has been reported to have a high reliability and adaptability for partial and subtotal mandibular reconstruction. Meanwhile, the delayed integration, non-union and bone resorption of the grafted and native bones were also reported. Those clinical complications are thought to be caused by inappropriate transfer of mechanical loading to the bone junction area. However, little has been known about the mechanobiological responses of hemi-mandibulectomized bone against the mechanical stimuli induced by consequential unbalanced masticatory forces. This study aims to evaluate the clinical outcome of a patient-specific mandibular reconstruction with FFF based on the CT scans in a longitudinal manner, and to establish an in-silico approach to exploring the effects of FFF on occlusal mechanics.

Materials and Methods: Due to mandibular squamous carcinoma at the right molar gingival area, a 66-year-old male patient received the mandibular FFF reconstruction after segmental resection. Post-operative CT scans were taken at 0, 4 and 16 months after surgery. After the CT image segmentation and the mass-center based registration, the changes in bone density and morphology were measured between these image sets at the interfaces between the grafted bone and the native mandible. Three-dimensional finite element (FE) models were created also from the CT images, for a time-dependent assessment on this typical patient. A pixel-based mapping algorithm was also adopted here to create a heterogeneous bone density distribution at different post-operative stages, reflecting the changes of the anatomical and physiological conditions. Occlusal bite forces measured clinically were assigned to the corresponding models.

Results: The changes of bone density and bone morphology due to the change of occlusal bite forces and the treatment course of FFF reconstruction at different post-operative stages were evaluated in terms of the bone stress and strain distribution across the entire mandible. The patterns of healing and consequential bone remodeling at the several post-operative stages of FFF reconstruction were revealed.

Conclusions: The potential changes in occlusal function and time-dependent bone responses were demonstrated in the change in the mechanobiological stimulus distribution in the grafted and native bones.

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