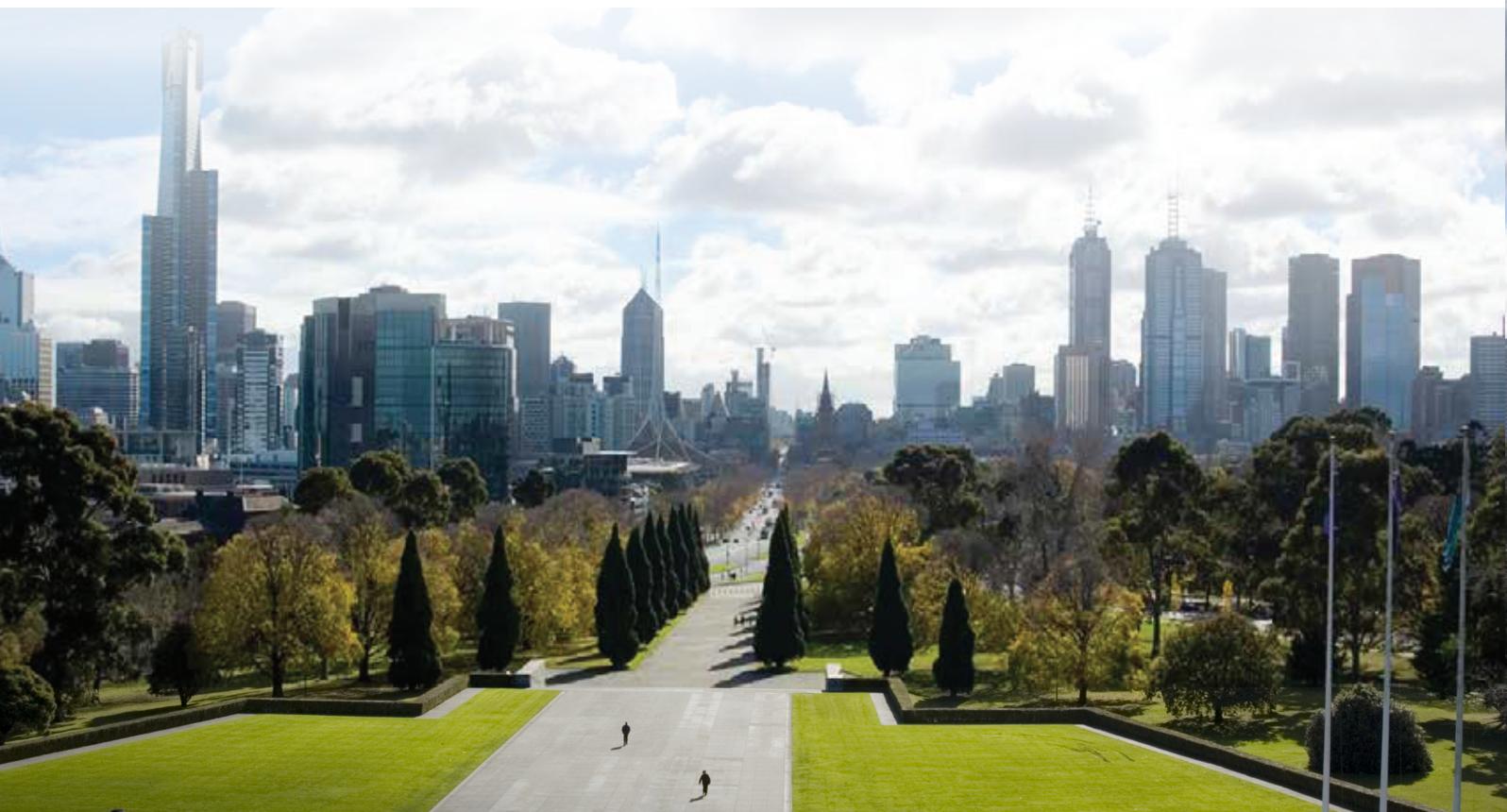


MAXIMIZING FUNCTION, OPTIMIZING OUTCOMES



26-28 JULY 2018

Final Program

Pullman & Mercure Melbourne Albert Park

MELBOURNE, VIC, AUSTRALIA

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ANZHNCs
www.anzhncs.org

ISMR
www.ismr-org.com

Meeting Planner
4425 Cass St. Suite A
T: 858 272-1018
res@res-inc.com

RES SEMINARS
San Diego, CA 92109
F: 858 272-7687
www.res-inc.com

Welcome Letter

Australian & New Zealand Head and Neck Society

ANZHNCs Co-Convenor's Invitation

Every group has its time and its place. For those who treat patients with head and neck cancer, 2018 is the era of multidisciplinary care. In this age of increasing subspecialization, no one clinical specialty can offer optimal care to every head and neck cancer patient in isolation. We have had to learn new skills to function effectively within and to get the most out of our multidisciplinary tumour boards. We come together with the underlying premise that each team member knows something that we ourselves do not.

We each belong to our clinical specialty societies but the Australia New Zealand Head and Neck Cancer Society is unique in welcoming every member of the clinical team who treats head and neck cancer patients. This year we have the special opportunity of hearing from the International Society of Maxillofacial Reconstruction (ISMR) in our first combined meeting. The ISMR bring a stellar cast of international clinicians with expertise in optimizing functional outcomes for Melbourne. The scientific committee has put together an outstanding local and international team of clinicians of all disciplines to provide a perspective on how the challenges of head and neck cancer treatment are approached throughout the world in 2018.

This meeting is for all clinicians involved in the treatment of head and neck cancer. It is an opportunity to renew old friendships and collaborations, and to make new connections, especially with our colleagues from the ISMR. I warmly invite you to Melbourne in July 2018 for the annual ANZHNCs and ISMR scientific meeting.



Tim Iseli

Tim Iseli FRACS
ENT Surgeon
Chairman Dept ENT Surgery
Royal Melbourne Hospital
Melbourne, Australia

Welcome Letter

International Society for Maxillofacial Rehabilitation

ANZHNCS ISMR 2018 Welcome Letter

Dear Colleagues,

Welcome to Melbourne and thank you for participating in the first-ever combined meeting of our two great societies the ANZHNCS and the ISMR. The members and attendees that you see around you represent the different facets of health care that are needed to provide the best possible care to our complex head and neck / maxillofacial patient population. While all of us bring different sets of skills and can be involved in the treatment pathway at different time points the bond that joins us all is the desire to constantly evolve, improve and provide the best possible care to our patients. This is why meetings like these are so exciting it provides a unique opportunity for all of us involved all different aspects of head and neck / maxillofacial care to meet, share, learn and grow together.

Our meeting will include world-class international keynote speakers discussing topics ranging from emerging techniques and therapeutics in thyroid as well as head and neck cancer treatment, the importance of functional outcomes measurement in guiding head and neck cancer treatment decisions, optimizing maxillofacial rehabilitation at all points of patient care, and the use of surgical simulation and design to optimize head and neck reconstruction and rehabilitation. In addition, the scientific program includes multiple other presentations as well as expert panels covering the wide spectrum of head and neck cancer treatment and rehabilitation.

Again, thank you to all for taking the time out of your busy lives to join us in exciting Melbourne to meet with old friends and new friends and help us examine how we can all "maximize function, and optimize outcomes", together.



A handwritten signature in black ink, appearing to read "Daniel A. O'Connell". The signature is stylized with loops and a horizontal line at the end.

Daniel A. O'Connell MD MSc. FRCS
Associate Professor, Division of Otolaryngology-Head & Neck Surgery
University of Alberta
Edmonton, Alberta, Canada

Australian & New Zealand Head and Neck Society (ANZHNCs)

Early in 1998, a number of head and neck oncologists from the disciplines of surgery, radiation oncology and medical oncology met in Sydney to discuss the feasibility of establishing a multidisciplinary head and neck society. A working party was formed and, following a number of meetings, invitations were sent to individuals in these three specialties to become foundation members of the Australian and New Zealand Head & Neck Society.

The initial business meeting was held on Dec 9, 1998 and at that time there were 60 foundation members. The Society adopted as its Constitution the Model Rules for Associations published by the Department of Fair Trading in NSW and the members agreed that their principal objectives would be to promote the practice of head and neck oncology, to educate medical colleagues and the public about our specialty, to foster research and to seek optimal treatment outcomes for our patients.

Membership

Membership of the Australian and New Zealand Head and Neck Cancer Society gives multiple opportunities to keep up with the latest clinical and research developments in the field of head and neck oncology as well as access to local and international leading oncological surgeons for specific clinical case questions and issues.

2018 Organising Committee

Dr. Dale Howes - Department of Oral Rehabilitation, South Africa

Dr Tim Iseli - Otolaryngologist Head & Neck Surgeon, Melbourne

Dr. Hari Jeyarajan - ENT Surgeon, Melbourne

Felicity Megee - Senior Speech Pathologist, Melbourne

Dr. Dan O'Connell - Associate Professor, Canada

Dr. Felix Sim - Oral and Maxillofacial Surgeon, Melbourne

Dr. Albert Tiong - Radiation Oncologist, Melbourne

Dr. Christine Wallace - Westmead Hospital, Lane Cove

Members of the ANZHNCs Executive Committee

President: **A/Prof Julia Maclean** - Speech Pathologist, Sydney

Vice President: **Dr Brian Stein** - Medical Oncologist, Adelaide

Secretary: **Dr Tim Iseli** - Otolaryngologist Head & Neck Surgeon, Melbourne

Treasurer: **Dr Michael Collins** - Radiation Oncologist, Douglas, Townsville

Executive:

Dr Nicholas Marshall - Plastic Surgeon, Adelaide

Dr Tsien Fua - Radiation Oncologist, Victoria

Dr James Bowman - Otolaryngologist Head & Neck Surgeon, Brisbane

A/Prof Richard Gallagher - Head & Neck Oncology, Sydney

Ms Cate Froggatt, Registered Nurse, Sydney

Associate Professor David Wiesenfeld, Oral & Maxillofacial Surgeon, Melbourne, Chairman Australian Research Foundation

Professor Swee Tan, Plastic Surgeon, Wellington, Chairman New Zealand Research Foundation

Mr Rod Wellington, Independent Adviser

Immediate Past President: **A/Prof Martin Batstone** - Oral & Maxillofacial Surgeon, Brisbane

The Australian & New Zealand Head and Neck Society was incorporated in NSW on 2 February 2000.

www.anzhncs.org



AUSTRALIAN AND NEW ZEALAND
HEAD & NECK
CANCER SOCIETY

ADELAIDE 2019

New Science, Better Treatments

Convener: Dr Brian Stein

details out soon

T: +61 3 9249 1139

F: +61 3 9276 7431

E: anzhncs.asn@surgeons.org

International Society for Maxillofacial Rehabilitation (ISMR)

In the late 1980's John Beumer III, Director of Maxillofacial Prosthetics UCLA, Los Angeles, California, Ian M. Zlotolow, Director of Dental Service, Department of Surgery, Memorial Sloan-Kettering Cancer Center, New York, New York and Salvatore J. Esposito, Director of Maxillofacial Prosthetics at the Cleveland Clinic, Cleveland, Ohio met and decided to conduct an international symposium devoted to the art and science of maxillofacial prosthetics. Seed money for this initial meeting was provided by their respective institutions and by the Borchard Foundation. More than 400 individuals from more than 30 countries attended this initial conference. The funds contributed by the Borchard Foundation were used to support the travel and lodging expenses of 30 professionals from underdeveloped countries.

The meeting was so successful and well attended that Beumer, Zlotolow and Esposito formed an international organization devoted to maxillofacial rehabilitation. They decided to conduct the meetings every two years and to rotate them between North America, Europe and Asia. The International Congress of Maxillofacial Prosthetics was then established and incorporated in October of 1996.

Membership

Building a strong ISMR as an international body to represent you and to provide you with professional opportunities is important in allowing you to bring the best care to your patients.

2018 Organising Committee

Dr. Dale Howes - Department of Oral Rehabilitation, South Africa

Dr Tim Iseli - Otolaryngologist Head & Neck Surgeon, Melbourne

Dr. Hari Jeyarajan - ENT Surgeon, Melbourne

Felicity Megee - Senior Speech Pathologist, Melbourne

Dr. Dan O'Connell - Associate Professor, Canada

Dr. Felix Sim - Oral and Maxillofacial Surgeon, Melbourne

Dr. Albert Tiong - Radiation Oncologist, Melbourne

Dr. Christine Wallace - Westmead Hospital, Lane Cove

Members of the ISMR Executive Committee

President: **Dr. Dale Howes**- Department of Oral Rehabilitation, South Africa

Vice President: **Dr. Daniel O'Connell**- Associate Professor, Canada

Secretary: **Dr. Lisa Burnell**- ENT, Head & Neck Surgeon, Canada

Treasurer: **Dr. Peter Gerngross**- VA Medical Center, USA

Executive:

Dr. Joseph Huryn - New York, USA

Dr. Dennis Rhoner - Co-Director, Cranio-Facial-Center Hirslanden, Switzerland

Dr. B. Srinivasan - Maxillofacial Prosthodontist & Implantologist, India

Dr. Alvin Wee - VA Nebraska, USA

Dr. Martin Osswald - Edmonton, Canada

Dr. Jana Rieger - Director of Research, Canada

Dr. Robert Taft - Chairman, Prosthodontics Department, USA

Immediate Past President: **Dr. Harry Reintsema**- Oral Maxillofacial Surgery, Netherlands



ABOUT THE INTERNATIONAL SOCIETY FOR MAXILLOFACIAL REHABILITATION

VISION

The ISMR is a 20+ year old organization initiated in the late 1980's by Dr. John Beumer, Dr. Ian Zlotolow and Dr. Sal Esposito. The ISMR is the preeminent interdisciplinary international organization in maxillofacial rehabilitation:

- Enhanced public and professional awareness of interdisciplinary maxillofacial rehabilitation
- Active, growing membership with balanced representation from multiple professional disciplines
- Sustainable educational, outreach and research programs that are recognized as the best in the field
- Well established regional groups

MISSION

Advancing Head & Neck – Maxillofacial Rehabilitation Together

MEMBERSHIP

Building a strong ISMR as an international body to represent you and to provide you with professional opportunities is important in allowing you to bring the best care to your patients. The ISMR is focused on the needs of its member. The ISMR invites you to become part of the unique international movement to bring an interdisciplinary approach to head and neck related patient care. To realize this, developing a strong membership body that is involved and brings support to grow the ISMR is essential.

We encourage colleagues to join the ISMR with professional qualifications related to maxillofacial rehabilitation or have demonstrated interest related to maxillofacial rehabilitation.

Please get actively involved in the ISMR and work to bring colleagues from your discipline and from other disciplines to join the ISMR. For more details visit: www.ismr-org.com

Sponsors and Exhibitors

Sponsors

Bronze:



Workshop Support:



Exhibitors

CranioRehab	Merck	Stryker
Lumenis	Nobel Biocare	ZEISS
Main Medical	Orien Dental Supplies	Zimmer BIOMET Dental
Medical Devices	OMX Solutions	



Please visit the Lumenis booth at the ANZHNCs annual meeting, 2018

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For more information contact:
Lumenis Australia 1800-586-364



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.

Keynote Speakers



Dr. Joanne Patterson
Senior Clinical Lecturer, Newcastle University, Lead Speech & Language Therapist in ENT, Sunderland Royal Hospital, England, UK

Dr Jo Patterson, Senior Clinical Lecturer (Newcastle University) and Lead Speech & Language Therapist in ENT (Sunderland Royal Hospital) Jo qualified as a SLP in 1991 and specialises in head and neck cancer rehabilitation. She was awarded a doctoral fellowship in 2005 and completed her PhD researching swallowing outcomes in head and neck cancer 2010. Her research portfolio includes a number of feasibility and pilot studies and four multi-centre RCTs relating to dysphagia in head and neck cancer. Jo has published numerous peer-reviewed papers and book chapters. She is a Fellow and Professional Advisor for the Royal College of Speech & Language Therapists and a British Association Head and Neck Oncologists council member. She continues to balance her time between clinical and academic work.



Jolie Ringash, MD, FRCPC, MSc
Professor of Radiation Oncology University of Toronto Princess Margaret Cancer Centre Toronto, Ontario CA

Dr. Ringash is a Professor of Radiation Oncology at the University of Toronto, cross appointed to Otolaryngology-Head/Neck Surgery, and to Health Policy, Management and Evaluation. She is Site Leader for the Gastrointestinal Radiation Oncology Group and Co-Chair of the Head and Neck Cancer Survivorship Programme at the Princess Margaret Cancer Centre. She serves as co-chair of the Quality of Life (QOL) committee at the Canadian Clinical Trials Group (CCTG), and as QOL coordinator/advisor for projects with the US NCI Head and Neck Steering Committee, the EORTC, RTOG/NRG, ECOG and TROG. Her research interests include QOL, cancer survivorship, and high-precision radiotherapy.



Dennis Rohner
Co-Director, Cranio-Facial-Center Hirslanden, Faculty Member, AO International, Aarau, Switzerland

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.



Mark Zafereo, MD, FACS
Associate Professor, Department of Head and Neck Surgery Associate Medical Director of the Endocrine Center Section Chief of Head and Neck Endocrine Surgery, University of Texas MD Anderson Cancer Center, Houston, Texas USA

Dr. Mark Zafereo is an Associate Professor of Head and Neck Surgery at MD Anderson Cancer Center in Houston, Texas. He is Section Chief of Head and Neck Endocrine Surgery and Associate Medical Director of the Endocrine Center at MD Anderson Cancer. Dr. Zafereo holds national committee appointments for the American Head and Neck Society, American Academy of Otolaryngology-Head and Neck Surgery, and American Board of Otolaryngology-Head and Neck Surgery, and he is a Past President of the Houston Society of Otolaryngology-Head and Neck Surgery. He has published extensively on Thyroid and other Head & Neck cancers, speaking nationally and internationally. His clinical practice focuses on patients afflicted with thyroid cancer and parathyroid neoplasms.

Keynote Speakers (continued)



Hadi Seikaly

Professor, Depts. of
Surgery & Oncology
University of Alberta in Edmonton
Director, Division of
Otolaryngology-Head and Neck
Surgery, Edmonton Zone Clinical
Section Head for Alberta Health
Services, Co-Editor of the Journal

of Otolaryngology-Head & Neck Surgery, Edmonton,
Alberta CA

Dr. Hadi Seikaly is a professor of the departments of Surgery and Oncology at the University of Alberta in Edmonton. He is the Director of the division of Otolaryngology – Head and Neck Surgery and the Edmonton Zone Clinical Section Head for Alberta Health Services. Dr. Seikaly is the Coeditor of the Journal of 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 completed a Masters of the Arts in Leadership from the Royal Roads University in 2014.

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 the Head and Neck Research Network. He has been a PI or collaborator on numerous research grants receiving funding from various agencies, including CIHR, Terry Fox Foundation and Alberta Cancer Foundation. He has published over 170 peer reviewed papers and book chapters.

Dr. Seikaly is the recipient of the many prestigious awards including the Edmonton Zone Medical Staff Association researcher of the year, the Canadian Society of Otolaryngology Head and Neck Surgery award for national educational excellence and the Mentor of the year. He is a member of numerous surgical societies, nationally/internationally and has been invited as a visiting professor to over 70 institutions lecturing on all aspects of Head and Neck Oncology and reconstruction.



Join Us Now

ANZHNCS is a multidisciplinary society which aims to promote and advance the multi-disciplinary practice of head and neck oncology throughout Australia, New Zealand and the Asia Pacific region.

Eligible members include surgical oncologists (ENT, plastic and oral maxillofacial surgeons), radiation oncologists, medical oncologists, allied health specialists (speech pathologists, dietitians, physiotherapists, occupational therapists, radiation therapists, psychologists), nurses, dentists and prosthodontists as well as affiliated medical specialties, and of course trainees of all disciplines.

Membership includes discount attendance at the annual scientific meeting.

Come visit our website and become involved in this unique multi-disciplinary society.

<http://www.anzhncs.org/>

Chris O'Brien Oration

Chris O'Brien

Christopher O'Brien, AO. graduated in Medicine from the University of Sydney in 1976 and then completed his residency and surgical training at Royal Prince Alfred Hospital (RPAH). He then completed clinical fellowships in head and neck surgery and oncology in England and the United States and, in 1987, returned to Australia, where he joined the staff of RPAH as a consultant head and neck surgeon. There he contributed to the expansion of the clinical service, making it one of the largest in the country. He also established a comprehensive head and neck database, a basic research program and an international clinical fellowship program under the umbrella of the Sydney Head and Neck Cancer Institute, which he founded in 2002.

He had authored more than 100 scientific papers and 17 book chapters and had been honoured with invitations to many countries and institutions as a Visiting Professor and guest lecturer, including invitations to give numerous prestigious named lectures: the Hayes Martin Lecture in Washington in 2004, the Eugene Myers International Lecture in Los Angeles in 2005, the Inaugural Jatin P Shah Lecture in Prague in 2006, and the Semon Lecture in London in 2006. He was awarded Honorary Fellowship of the Royal College of Surgeons of England in recognition of his contribution to the training of young British Surgeons.

In 1988, Professor O'Brien founded the Australian and New Zealand Head and Neck Society, a multidisciplinary society comprising surgeons of all disciplines, radiation and medical oncologists, and allied health professionals. He was President of the Society in 2004. The Society is continuing to flourish and held its 15th Annual Scientific Meeting in 2013. Professor O'Brien was also a member of the American Head and Neck Society and was invited to join the Council in 2005.

In 2003, Professor O'Brien became Director of the Sydney Cancer Centre, based at Royal Prince Alfred Hospital and the University of Sydney, whilst maintaining all of his clinical, teaching, and research responsibilities. He had developed a proposal to transform the Sydney Cancer Centre into a \$150 million world class comprehensive cancer centre, and that project is moving forward with great momentum, named as The Chris O'Brien Lifehouse Centre at Royal Prince Alfred Hospital (RPA).

Unfortunately, in November 2006, Professor O'Brien was diagnosed with a malignant brain tumour and despite receiving treatment, passed away in June 2009. Christopher O'Brien was awarded Officer of the Order of Australia posthumously "For continued service to medicine and to the community through advocacy and fundraising roles for the development of integrated care and clinical research facilities for people with cancer, particularly the establishment of the Life house Centre at Royal Prince Alfred Hospital".

2018 ANZHNCs

Chris O'Brien Orator



Dr. Kevin Emerick

Assistant Professor, Department of Otolaryngology, Associate Program Director, Department of Otolaryngology, Co-Director Head and Neck Cutaneous Oncology Center, Massachusetts Eye and Ear Infirmary, Harvard Medical School Boston, MA USA

Dr. Kevin Emerick is a head and neck surgeon in the Head and Neck Oncology Division at the Massachusetts Eye and Ear Infirmary. He received his medical degree from Indiana University School of Medicine prior to completing his residency in otolaryngology at Harvard Medical School and fellowship training in head and neck oncology and reconstruction at the University of Michigan. Now, Dr. Emerick is an Assistant Professor of Otolaryngology at Harvard Medical School, the founder and Co-Director of the Multidisciplinary Cutaneous Oncology Center at Mass. Eye and Ear and the Associate Program Director for the Harvard Medical School Residency Program. Dr. Emerick holds national committee positions in the American Head and Neck Society and the American Academy of Otolaryngology – Head and Neck Surgery. Dr. Emerick has a large clinical practice dedicated to head and neck cancer care including high-risk cutaneous malignancy and complex head and neck reconstruction. His research interests include sentinel lymph node biopsy in the head and neck region, identifying molecular targets and drivers for high-risk cutaneous squamous cell carcinoma and supraclavicular flap reconstruction for head and neck defects.

Chris O'Brien Oration

In 2010, the Executive of the Australian and New Zealand Head and Neck Cancer Society (ANZHNCs) decided to dedicate the first lecture of each Annual Scientific Meeting as the Chris O'Brien Oration in celebration of his achievements.

2018 ANZHNCs Chris O'Brien Orator

Dr. Kevin Emerick

Assistant Professor, Department of Otolaryngology, Associate Program Director, Department of Otolaryngology, Co-Director Head and Neck Cutaneous Oncology Center, Massachusetts Eye and Ear Infirmary, and Harvard Medical School Boston

General Information

Registration

Full registration includes all scientific sessions, breakfast session, final program, lunch, morning and afternoon tea (as applicable), entry to the industry exhibition, welcome reception.

Day only registration includes all scientific sessions on day/s of attendance, final program, lunch, morning and afternoon tea (as applicable) and entry to the industry exhibition.

Tickets to the welcome reception and meeting dinner are an additional cost for the day registrants. Please enquire at the registration desk for availability.

Registration Desk

The registration desk is located in the Grand Ballroom Foyer.

Opening Hours:

Wednesday 25 July 2018: 2:00pm-7:00pm

Thursday 26 July 2018: 7:30am-5:00pm

Friday 27 July 2018: 7:30am-5:00pm

Saturday 28 July 2018: 8:00am-5:30pm

Name Badges and Tickets

Your name badge is essential for entry to the meeting rooms and industry exhibition at the Pullman & Mercure Albert Park. Tickets are essential for the breakfast session, welcome reception and meeting dinner.

Posters

Posters will be displayed in the industry exhibition and will be available for viewing throughout the meeting.

Certificate of Attendance

Delegates requiring a certificate of attendance should register their request with staff at the registration desk. Certificates will be emailed to these delegates after the conclusion of the meeting.

Internet Access

Free wireless internet access is available at the Pullman & Mercure Albert Park throughout the meeting.

Industry Exhibition

The industry exhibition is located in the Grand Ballroom Foyer, Pullman & Mercure Albert Park. Delegates have the opportunity to visit the booths and to view the posters in the program breaks.

Meeting Catering

Morning tea, lunch and afternoon tea will be served in the industry exhibition area in the Pullman & Mercure Albert Park.

Maxillo-Facial Reconstruction

Southern Implants have been providing **leading edge solutions** to implant surgeons and restorative dentists since 1987. Given the success of osseointegrated implants in dental treatment, a broader sphere of application has been explored for such devices.

Following traumatic accidents, oncology resections or congenital defects, patients present with sections of bone and connecting soft tissue missing. These structures are integral to phonetics, deglutition and it also presents a significant visual disturbance that can have a drastic psychological effect on the patient. Failing surgical reconstruction, these missing parts can be replaced by realistic looking prostheses to provide a satisfactory aesthetic solution.

Southern Implants works with leading rehabilitation centres around the world, developing new protocols and products. Due to the nature of the condition being treated, each implantation site is unique, therefore Southern Implants developed a comprehensive range of implants to accommodate specific surgical applications.

The company offers dental implants incorporating the most **innovative technologies** along with restorative components of **exceptional fit and compatibility** to solve everyday and severe challenges.



Courtesy of Dr. Greg Boyes-Varley & Prof. Dale Howes

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- **Extra-Oral** Implants for retaining cranio facial prosthesis.
 - * Ultra-Short tapered implant, for increased primary stability.
 - * Ultra-Short straight implant features a wide flange to prevent counter-sinking



Southern Implants enhanced surface is now a synergy of innovation and high-strength Titanium. The Titanium used for the last four years, is specifically cold-worked to exceed a UTS of 920 Mpa. The Fatigue strength of this material, exceeds that of equivalent alloyed implants.



General Information (continued)

Dietary Requirements

Please note that the venue is responsible for all catering at the meeting and ANZHNCS/ISMR does not inspect or control food preparation areas or attempt to monitor ingredients used. You should contact the venue directly for all special dietary requirements during the event, irrespective of whether details have been provided to ANZHNCS/ISMR. If ANZHNCS/ISMR requests information about your dietary requirements for a specific event ANZHNCS/ISMR will endeavor to forward the information provided to the venue (time permitting). ANZHNCS/ISMR will not retain information provided for future events, so you must verify your requirements for each event. Even if information is requested or provided, ANZHNCS/ISMR takes no responsibility for ensuring that the venue acknowledges your dietary requirements or that these requirements can be met. In all cases you must verify for yourself that your dietary requirements have been met and ANZHNCS/ISMR refutes any and all liability for any failure to adequately provide your special dietary requirements or any consequential damage resulting from such failure.

Photography

During the meeting, the Meeting Organisers will take photographs of proceedings and attendees. These photographs may be used for the following purposes:

- Projection onsite
- Reporting on the meeting in online and hard copy publications
- Marketing a future meeting, including online and hard copy publications.

If you do not wish to be included in photograph, please advise the photographer.

Dress

Scientific Sessions: Business attire/smart casual
Welcome Reception: Business attire/smart casual
Meeting Dinner: Lounge suit/cocktail dress

Official Functions

Welcome Reception

Date: Wednesday 25 July 2018

Venue: Grand Ballroom Foyer

Cost: *Included in registration*

Dress: Business attire/smart casual

Additional tickets: \$75.00. Please enquire at the registration desk for availability.

Network with the Academic Faculty, industry and fellow colleagues whilst celebrating the opening of this important meeting.

Meeting Gala Dinner

Date: Friday 27 July 2018

Venue: Carousel Restaurant

Cost: \$150 USD

Dress: Lounge suit/cocktail dress

Additional tickets: \$150.00. Please enquire at the registration desk for availability.

Enjoy dinner and entertainment with colleagues and friends.

Business Meetings

Foundation Board Meeting

(ANZHNCS Members Only)

Date: Wednesday 25 2018, 2:00pm-7:00pm

Venue: Albert

Annual General Meeting

(ANZHNCS Members Only)

Date: Friday 27 2018, 12:30pm-1:30pm

Venue: Grand Ballroom 5

Annual General Meeting

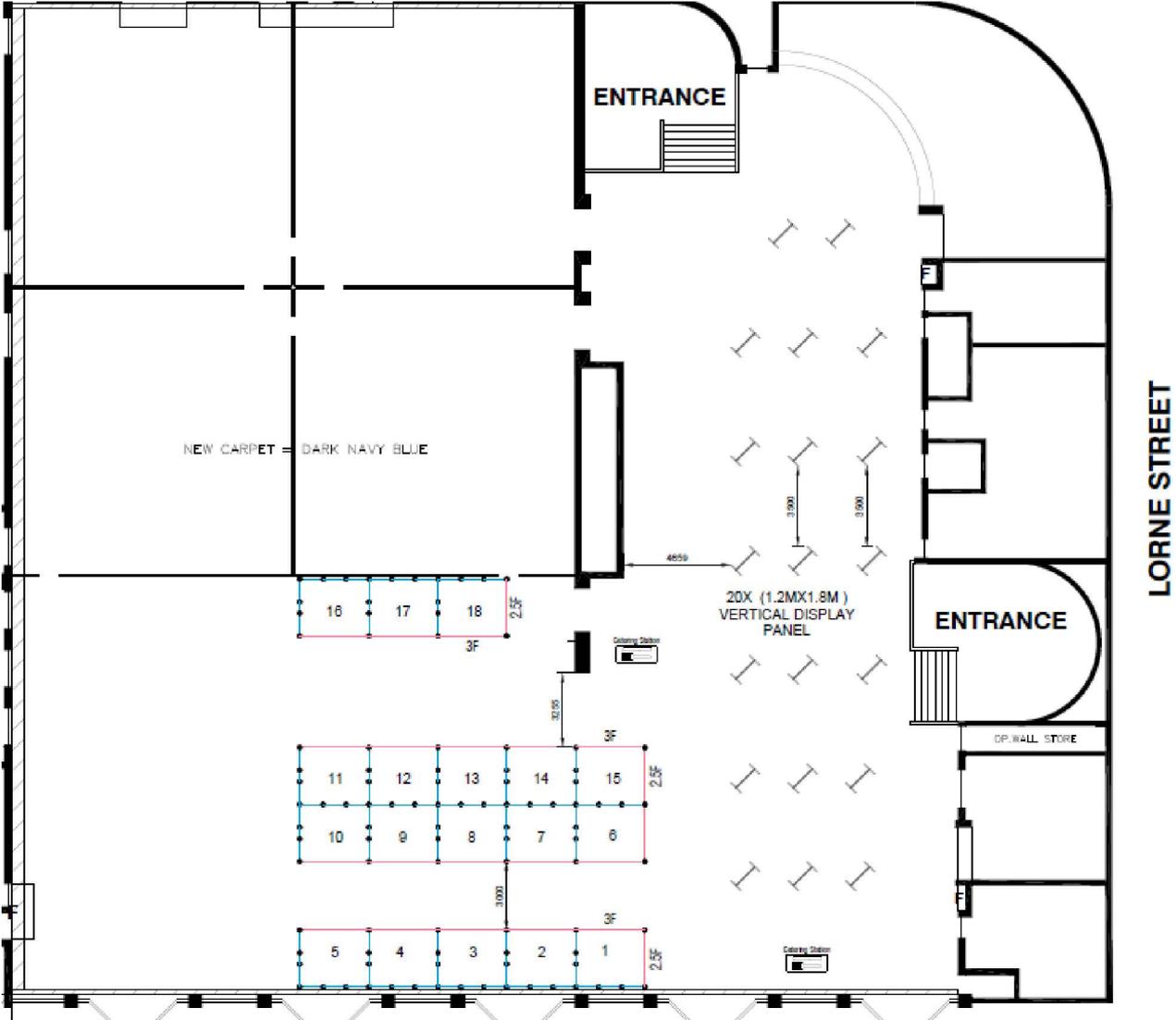
(ISMR Members Only)

Date: Friday 27 2018, 12:30pm-1:30pm

Venue: Element

Industry Exhibition

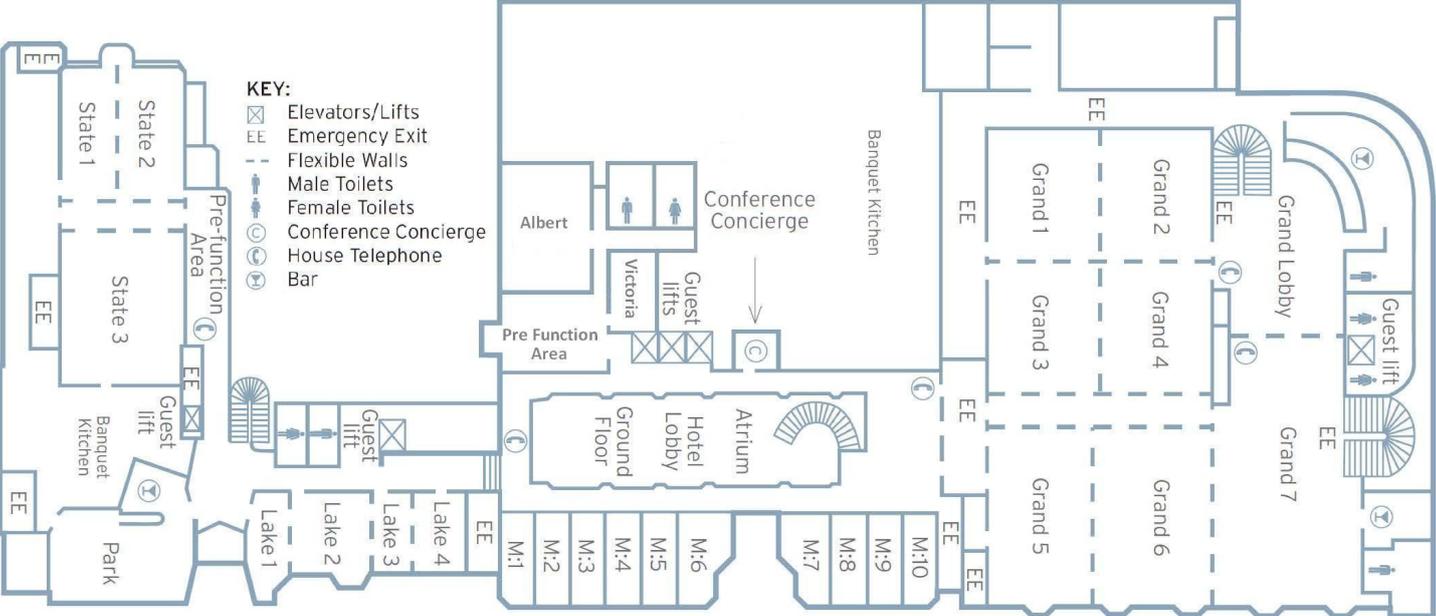
ANZHNCs-ISMIR 2018 Conference – Exhibit Booth Diagram



- | | |
|--------------------------|--------------------------|
| 1. Southern Implants | 10. Cochlear |
| 2. Stryker | 11. Merck Serono |
| 3. Main Medical | 12. Medical Devices |
| 4. CranioRehab | 13. Beyond Five /ANZHNCs |
| 5. TBD | 14. Nobel Biocare |
| 6. Olympus | 15. Medtronic |
| 7. Lumenis | 16. Zeiss |
| 8. OMX Solutions | 17. Zimmer Biomet Dental |
| 9. Orien Dental Supplies | 18. KLS Martin |

Venue Map

Pullman Melbourne Albert Park Floorplan



Program at a Glance

WEDNESDAY 25 JULY 2018

Pre-Conference

9:00am-5:00pm	Elective Workshop
2:00pm-7:00pm	Meeting Registration
5:00pm-7:00pm	Welcome Reception
2:00pm-7:00pm	ANZHNCS Board Meeting
7:00pm-10:00pm	ISMR Board Meeting

THURSDAY 26 JULY 2018

7:30am-5:00pm	Meeting Registration
8:15am-12:30pm	Plenary Session 1 Part 1: Starting with the End in Mind Moderator/s: Tim Iseli & Dan O'Connell

10:00am Break

10:40am-12:30pm	Plenary Session 1 Part 2: Starting with the End in Mind Moderator/s: Peter Gerngross & David Wiesenfeld
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12:30pm-1:30pm Lunch and Exhibits

1:30pm-5:00pm	Concurrent Session A - Reconstruction & Rehabilitation Moderator/s: Richard Barton & Martin Osswald	Concurrent Session B - Skin Cancer & Surgery Moderator/s: Vanessa Estall & Sorway Chan
---------------	--	---

3:00pm Break

3:30pm-5:00pm	Concurrent Session A - Maximizing Rehabilitation Through Reconstruction – Cases with the Experts Moderator/s: Rachelle Robinson, Robert Taft	Concurrent Session B - Larynx & Airway Complications Moderator/s: Peter Thomson & Kellie Hancock
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5:00pm-7:00pm	Poster Session and Exhibit Reception <i>Launch Presentation from "The Swallows" and Beyond Five</i>
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FRIDAY 27 JULY 2018

7:30am-5:30pm	Meeting Registration
7:30am-7:35pm	Welcome to WHNCD

FRIDAY 27 JULY 2018

7:35am-8:20am	Mark Zefereo, Dr. Vince Biron, Craig Howes Providing Head and Neck Cancer Care in the Developing World Moderator: Dan O'Connell	
8:30am-9:35am	Nursing Session Chair: Cheryl Kelly/Virginia Thomson	
8:30am-1:30pm	Concurrent Session A - Thyroid Moderator: Matt Magarey	Concurrent Session B - Oral Rehabilitation: Pretreatment Decisions and Maxillofacial Prosthodontics Moderator/s: Robert Taft & Hadi Seikaly
10:00am-10:45am	Break	
	Concurrent Session A - Oropharyngeal Moderator/s: Bena Cartmill & Adnan Safdar & Tsien Fua	Concurrent Session B - Tumour Biology Moderator/s: Alesha Thai & Charbel Darido
12:30pm-1:30pm	ANZHNCS Business Luncheon	
12:30pm-1:30pm	ISMR Business Luncheon / Meeting	
2:00pm-3:00pm	Concurrent Session A - Oral Cavity Moderator/s: Simon Lou & Harry Reintsema	Concurrent Session B - Practice and Service Provision Moderator/s: Madhari Chilkuri & Jacqui Frowen
3:30pm-4:00pm	Break	
4:00pm-5:00pm	Concurrent Session A - Survivorship: Treatment and Beyond Moderator/s: Jolie Ringash & Belinda Vangelov	Concurrent Session B - Skull Base Moderator/s: Matthew Campbell & Hari Jeyarajan
8:30pm	ANZHNCS ISMR Gala Dinner Event	

SATURDAY 28 JULY 2018

8:00am-5:30pm	Meeting Registration
8:30am-10:00am	MDM Case Discussion Moderator/s: Jolie Ringash MDT Case Presentation Panel: OMFS, ENT, Rad Onc, SP, Med Onc MDM Case Discussion
10:00am	Break
10:45am-11:45am	Plenary Session 2 Treatment Decision Making Moderator/s: Dale Howes & Julia Maclean
12:30pm	Meeting Close

Pre-Meeting Workshops

Hands-On Anaplastology Course Anaplastology – Hands-On!

July 24-26, 2018

Tuesday July 24, 2018

Day 1 – Fundamentals: Treatment Planning & Form Design (Ear)

Wednesday 25 July 2018

Day 2 – Surgical Concepts & Technique

Tuesday July 24, 2018

Day 3 – Colouring, Casting, Delivery & Lifetime Maintenance.

The SIG FPR is an international group of professionals (ISMR members) dedicated to the pursuit, provision, and promotion of facial prosthetic rehabilitation services for individuals suffering from facial deformity and/or congenital conditions. Presently, the SIG FPR is comprised of approximately 30 members from 13 different countries. As a part of the ISMR, the SIG FPR provides training opportunities for professionals at regional conferences throughout the world.

Pre-Meeting Workshops (continued)

Wednesday 25 July 2018

- 08:00-17:00 **Starting with the End in Mind** – Virtual Surgical Planning and Implant Placement in Maxillo-Mandibular Reconstruction & Rehabilitation
Surgical Concepts & Technique – Surgical Workshop & Technical Demonstrations
AM SURGICAL Session:
Moderator: Anand Ramakrishnan, Royal Melbourne Hospital
- 08:00-08:15 Evolution of computer-assisted surgery and custom-made implants in maxilla-mandibular reconstruction
Dr Felix Sim
- 08:15-10:00 Implant Supported Craniofacial Rehabilitation
Prof. Dale Howes, Prof. Hadi Seikaly, Prof. Martin Osswald, Prof. Dan O'Connell
- 10:00-10:15 **Coffee Break**
- 10:15-11:00 Role of Zygomatic Implants in Head & Neck Oncology & Reconstruction
Prof. Dale Howes
- 11:00-11:30 Virtual Surgical Planning in Maxillo-mandibular reconstruction & rehabilitation
Prof. Dale Howes
- 11:00-11:30 Mandibular reconstruction (please see conference program for additional detail)
- 11:30-12:00 Live planning session – “Angle to Angle Mandibular Reconstruction”
- 12:00-12:30 Maxillary Reconstruction (please see conference program for additional detail)
- 12:30-1:00 Live planning session – “Brown 3 Defect”
- 1:00-12:00 **Lunch on your own**
- 2:00-2:20 The role of the Prosthodontist in a multidisciplinary head and neck oncology team
Devin Okay
- 2:20-2:40 Post-Traumatic Stress in Prosthodontic management of Head & Neck Cancer
Meriting Thokoane
- 2:40-3:00 Functional Outcomes in Head & Neck Cancer
Harry Reintsema
- COCHLEAR VISTAFIX ANAPLASTOLOGY PROGRAMME
- 3:00-3:25 Long-term outcomes of craniofacial implants for the restoration of facial defects
Dr. Stephen Gibbons, Royal Melbourne Hospital
- 3:25-3:50 Anaplastology, Facial Prosthetics & Pre-prosthetic surgery: Surgical Considerations & Planning for Rehabilitation with Vistafix
Rosemary Seelaus
- 3:50-4:15 Surgical Technique with Vistafix
Jodie Oakley, Cochlear
- 4:15-5:00 Surgical Technique demonstration & Hands-On Surgeon's Practice
Jodie Oakley, Cochlear
- 5:00 **Opening Reception ANZHCS / ISMR**

Scientific Program

Wednesday 25 July 2018

09:00-5:00	Elective Workshop - Starting with the End in Mind/ Surgical Concepts & Technique	11:15	Keynote Speaker: Reducing Head and Neck Cancer Morbidity Through Surgery Hadi Seikaly
2:00-7:00	Meeting Registration	11:45	Keynote Speaker: Techniques for Managing Locoregionally Advanced Thyroid Cancer: Reconstruction and Morbidity Mark Zafereo
5:00-7:00	Welcome Reception		
7:00-10:00	ISMR Board Meeting		
2:00-7:00	ANZHNCS Board Meeting	12:15	Discussion

Thursday 26 JULY 2018

		12:30-1:30	Lunch and Exhibits
		1:30-5:00	Concurrent Sessions
07:30-5:00	Meeting Registration		
08:00	Welcome		Concurrent Session A Reconstruction & Rehabilitation Moderator/s: Martin Osswald
08:15-12:30	“Starting with the End in Mind” Moderator/s: Tim Iseli & Dan O’Connell	1:30	Keynote Speaker: Digitally Planned and Occlusion Driven Mandibular Reconstruction Hadi Seikaly
08:15	Tailored Approaches to Skull Base Tumours- Bigger is not necessarily Better Bernie Lyons	1:45	Keynote Speaker: Zygoma Implants and Maxillectomies – An Alternative for Free Flaps Dennis Rohner
08:35	The Gap Between Outcomes and Lived Reality: A Patient’s Exploration Ros Dowse	2:00	Reconstruction of the Lips Jeremy Wilson
08:55	Keynote Lecture: What we Measure Affects What we do: The Importance of Outcome Measures Jolie Ringash	2:15	Free Flap Monitoring Martin Batsone
09:25	Keynote Lecture: Swallowing Outcome Measures: Selection, Delivery, and Performance Jo Patterson	2:30	Innervation Prevents Early- Staged Resorption in Iliac Flap for Mandibular Reconstruction Lei Wang
10:00	Break	2:40	Rehabilitation Using Zygomatic Implants and Carbon Fiber Framework Canceled
	“Starting with the End in Mind” Moderator/s: Peter Gerngross	2:50	An Cad/Cam Solution for Facial Prostheses: China’s Experience Canceled
10:45	Keynote Speaker: Occlusion Driven Planning for Complex Maxillofacial Reconstruction Dennis Rohner		

Scientific Program (Thursday 26 JULY 2018 continued)

3:30-5:00	Concurrent Sessions	3:30	Mandibular Reconstruction
	Concurrent Session B Skin Cancer & Surgery Moderator/s: Vanessa Estall & Sorway Chan		Maxillary Reconstruction
			Reconstruction in the previously operated and irradiated neck
1:30	Nodal Ratio: Prognostic Utility in Cutaneous HNSCC; A Multi-Institutional Study Vasan Kartik	3:30-5:00	Concurrent Sessions
1:40	Acinic Cell Carcinoma of the Parotid: A Retrospective Cohort Study Amshuman Rao	3:30	Concurrent Session B Larynx & Airway Complications Moderator: Peter Thomson
1:50	Lymph Node Metastasis in Squamous Cell Carcinoma of The Lip Robert Calvisi	3:45	Techniques for Managing Locoregionally Advanced Thyroid Cancer Mark Zafereo
2:00	Reconstruction after Radical Parotidectomy Jonathan Clark	4:00	Functional Outcomes in Managing Early Glottic Cancer Amanda Richards
2:15	Facial Nerve Rehabilitation Susan Coulson	4:15	Management of Advanced and Recurrent Laryngeal Tumors Julia Crawford
2:30	PD-1 Blockade with Cemiplimab in Advanced Cutaneous Squamous-Cell Carcinoma Alesha Thai	4:30	Management of the Dysfunctional Larynx after (Chemo)-Irradiation Caroline Jefferey
2:45	Sentinel Lymph Node Biopsy in Cutaneous SCC Kevin Emerick	4:30	Use of Statistical Models in Head and Neck Cancer Survival Damian Kotevski
3:00	Break		
3:30-5:00	Concurrent Sessions	4:40	Open Surgical Management of Upper Airway Tumours Brett Leavers
	Concurrent Session A Maximizing Rehabilitation Through Reconstruction – Cases with the Experts Moderator/s: Rachelle Robinson, Robert Taft	4:50	Postoperative Pulmonary Complications Following Major Head and Neck Cancer Surgery Leonie Shaw
3:30	Panel Case Hadi Seikaly, Martin Batstone, Jonathan Clark, Richard Barton, Kevin Emerick	5:00	Adjourn
	Tongue Tip Defects	5:00-7:00	Poster Session and Exhibit Reception <i>Launch Presentation from “The Swallows” and Beyond Fi</i>
	Subtotal Glossectomy Defects		

Friday 27 JULY 2018

07:30-5:30	Meeting Registration	09:40	To Evaluate Peel-Bond Strength Between Plexiglas-Acrylic and Maxillofacial Silicone Waqas Tanveer
07:30-07:35	Welcome to WHNCD		
07:35-08:20	Providing Head and Neck Cancer Care in the Developing World Mark Zefereo, Dr. Vince Biron, Craig Howes Moderator: Dan O'Connell	09:50	Digital Technology to Design and Fabricate Obturators Ting Jiao
08:30-1:30	Concurrent Sessions	08:30-9:55	Nursing Session
	Concurrent Session A Thyroid Moderator/s: Matt Magarey	08:30	President ENT H&N Nurses Group OHNNG Cheryl Kelly
08:30	Keynote Speaker: Changes in Treatment Patterns for Medullary Thyroid Cancer Mark Zafareo	08:33	H&N Cancer Awareness – Spreading the Message Julie McCrossin
09:00	Molecular Imaging and Radionuclide Therapy for Advanced Thyroid Cancer David Pattison	08:45	Immunotherapy and H&N Cancer Courtney Thornely
09:20	Systemic Options in Advanced Thyroid Malignancies Ben Solomon	09:05	Addressing Communication Challenges in Cancer Care Meg Chiswell
09:40	Mutation Profiling of Thyroid Nodules Using Ddpcr Vincent Biron	09:35	An Open Discussion with H&N Cancer Survivors Patient Forum
08:30-1:30	Concurrent Sessions	10:00-10:45	Break
	Concurrent Session B Oral Rehabilitation: Pretreatment Decisions and Maxillofacial Prosthodontics Moderator/s: Robert Taft & Hadi Seikaly	08:30-1:30	Concurrent Sessions
08:30	Pretreatment Protocols USA Devin Okay		Concurrent Session A Oropharyngeal Moderator/s: Bena Cartmill & Tsien Fua
08:50	Pre-Treatment Protocols Netherlands Harry Reintsema	10:45	Keynote Speaker: Strategies to Reduce Radiation Treatment Toxicity in Oropharyngeal Cancer: What can be Accomplished Now Jolie Ringash
09:10	Head and Neck Rehabilitation: How Pretreatment Choices Impact the Final Outcomes? Meriting Thokoane	11:05	Keynote Speaker: Optimising Swallow Outcomes in Oropharyngeal Cancer Jo Patterson
09:30	Application of Prefabricate Denture in The Rehabilitation of Oralmaxillofacial Deformity Canceled	11:25	Surgical Approaches to the Oropharynx in the Era of TORS: Do We Really Need the Robot? Dan O'Connell
		11:40	Mutation Profiling of Thyroid Nodules Using Ddpcr Vincent Biron

Scientific Program (Friday 27 JULY 2018 continued)

11:55	Primary Trans-Oral Surgery and Risk-Adapted Radiotherapy for Early Tonsillar SCC Benjamin Chua	2:00-3:30	Concurrent Sessions Concurrent Session A Oral Cavity Moderator/s: Simon Lou
12:05	Neck Dissection Rate in Node+ Hpv-Associated Oropharyngeal Carcinoma Following Chemoradiotherapy Howard Liu	2:00	Keynote Speaker: Oral Function for Quality of Life in Cancer Patients Dennis Rohner
12:15	Optimising Radiotherapy to Swallowing Organs at Risk in Oropharyngeal Tumours Molly Barnhart	2:20	Screening for Molecular Dysplasia in Oral Potentially Malignant Disorders Tami Yap
08:30-1:30	Concurrent Sessions Concurrent Session B Tumour Biology Moderator: Alesha Thai	2:35	Oral Cavity Squamous Cell Carcinoma Survival in Australia. Time for Some Modern Data Martin Batstone
10:45	Characterisation of Breath Volatile Compounds in Mucosal Squamous Cell Carcinoma Nuwa Dharmawardana	2:50	Impact of Age on Prognostic Factors for Non-Hpv Mucosal HNSCC Kartik Vasana
10:55	Second Hand Smoke in Patients with Head and Neck Cancer Ashvini Abeysekera	3:00	Post-Operative Radiotherapy for Intermediate-Risk Oral SCC Timothy Liu
11:15	Exploring Mismatch Repair Protein Loss in Head and Neck SCC Vasan Kartik	3:10	Survivorship in Surgery: Post-Treatment Swallowing Outcomes in Glossectomy Patients Rachelle Robinson
11:25	Are There Inherited Genomic Predisposing Variants in Metastatic Cutaneous SCC? Jodie Trautman	3:20	Oral Functioning After Maxillectomy in Patients with Obturator or Reconstruction Caroline Speksnijder
11:35	Head and Neck Cutaneous Squamous Cell Carcinoma Cancer Stem Cells Sabrina Koh	2:00-3:30	Concurrent Sessions Concurrent Session B Practice and Service Provision Moderator/s: Madhari Chilkuri & Jacqui Frowen
11:45	Multiplex Gene Analysis of High Risk and Metastatic Cutaneous SCC Louise Thomas	2:20	Patient Perception of Outcomes After Treatment of Oral Cancer Felicity Megee
12:30-1:30	ANZHNCs Business Luncheon		
12:30-1:30	ISMR Business Luncheon/ Meeting		

Scientific Program (Friday 27 JULY 2018 continued)

2:30	Reactive Feeding Tube Use in Head and Neck Cancer Belinda Vangelov	4:50	Naso-Gastric Tube Feeding During (Chemo)Radiotherapy: Patient Compliance and Perceived Barriers Emma Mckie
2:40	Eras Care Pathway or Major Head and Neck Cancer Patients Rahu Jayakar	4:00-5:00	Concurrent Sessions
2:50	A Private Allied Health Hn Service: Opportunities, Challenges, Outcomes Louise Malcolm		Concurrent Session B Skull Base Moderator/s: Matthew Campbell & Hari Jeyarajan
3:00	Pathways to Treatment of Oropharynx, Oral Cavity and Cutaneous SCC Rebecca Venchiarutti	4:00	Perineural Spread and the Base of Skull- A Radiologist's Perspective Karda Cavanagh
3:10	Quality Indicators in Head and Neck Cancers Lopes Floro	4:15	Surgical Assessment and Management of Perineural Invasion at the Skull Base Ben Dixon
3:20	Advanced Dietetics Practice – Maximizing Dietitian Function, Optimizing Patient Outcomes Kim Lunardi	4:30	Skull Base Reconstruction Damien Grinsell
3:30-4:00	Break	4:45	Endoscopic Surgery for Malignancy: When Minimal Access Doesn't Imply Limited Surgery Richard Harvey
4:00-5:00	Concurrent Sessions		
	Concurrent Session A Survivorship: Treatment and Beyond Moderator/s: Jolie Ringash & Belinda Vangelov	5:00	Adjourn
		7:30	ANZHNCs ISMR Gala Dinner Event
4:00	Keynote Speaker: Developing a Biopsychosocial Approach to Dysphagia Care Jo Patterson		
4:20	Dysgeusia Prevalence and Impact During-Post Head and Neck Cancer Treatment Barbara Messing		
4:30	Chronic Lymphoedema Following Head and Neck Cancer Management Claire Jeans		
4:40	Physician and Patient-Reported Outcomes in Imrt-Treated Nasopharyngeal Carcinoma Lachlan McDowell		

Saturday 28 JULY 2018

08:00-5:30	Meeting Registration
08:30-10:00	MDM Case Discussion Moderator: Jolie Ringash MDT Case Presentation Panel: OMFS, ENT, Rad Onc, SP, Med Onc MDM Case Discussion
10:00	Break
10:45-11:45	Treatment Decision Making Moderator: Dale Howes
10:45	Keynote Speakers: Predicting Survival in Head & Neck Cancers Kevin Emerick
11:05	Systemic Options for Elderly Patients with Inoperable Cancers: Outcomes and Decision Making Brian Stein
11:25	Keynote Speaker: Treatment for Elderly Patients with HN Cancer Jolie Ringash
11:45	Meeting Close

Verbal Presentation Abstracts (listed in order according to the Program Schedule)

Tailored Approaches to Skull Base Tumours- Bigger is not Necessarily Better

Bernie Lyons

Skull Base and Paranasal Sinus Cancers present a massive challenge to Head and Neck/Skull Base Oncologic surgeon and also to the Radiation Oncologists and multidisciplinary team as a whole. These tumours invariably present late and are often aggressive in their behaviour with involvement of surrounding vital structures such as the eye, internal carotid artery and cavernous sinus and brain. The nature and position of these tumours makes planning of surgery and adjuvant therapy complex. Radical open surgical approaches adopted in the last 40 years have resulted in improved survival for paranasal sinus cancer but particularly in the last 15 years there has been a move towards more minimally invasive approaches. The author will review his personal and institutional experience in the management of over 300 anterior skull base malignancies and how decision making has changed towards a more tailored or individualised approach to treatment selection with respect to not only surgical approaches, but also in the use of adjuvant therapies and the role of immunologic agents. The evolution of skull base surgery exemplifies well the theme of this meeting-Maximising Function and Optimising Outcomes.

The Gap Between Outcomes and Lived Reality: A Patient's Exploration

Ros Dowes

Faculty of Pharmacy, Rhodes University, Grahamstown, South Africa

Treatment for head and neck cancer (HNC) can leave patients disfigured, functionally impaired and desperate as we try to survive, deal with limitations, negotiate our restricted lives. Carving out a new life demands hard work to establish our "new normal". The purpose of this presentation is to discuss the ability of current HNC quality of life (QOL) measures to afford adequate insight into patient reality and explores health professionals' awareness of the impact of treatment on patients' lives.

Using an autoethnographic approach, I will speak to these objectives by contextualising them within my patient narrative, drawing from my long-term experience of HNC spanning 20 years and six occurrences. My commentary will, in addition, be informed by research literature on HNC QOL measures and assessment, and on HNC patients' experiences and needs.

The completion of a QOL assessment is, essentially, a one-dimensional tick box exercise that approximates the status of selected patient outcomes but offers limited insight into the highly complex challenges encountered by compromised HNC patients with an altered lived reality. Literature indicates that HNC patients "need a hand to hold", are grappling with the "disruption of daily life", are often in the state of "waiting in suspense", and ultimately are let go and are "left to their own devices". My concern is that many unmet needs and unanswered questions exist, loneliness abounds, and uncertainty about the future is a constant companion. Addressing these should be a focus for further debate and action.

Verbal Presentation Abstracts (continued)

What Measure Affects What we do: The Importance of Outcome Measures

Jolie Ringash

What is measurement science? How does it apply to patients with head and neck cancer? I will briefly review the principles of reliability, validity and responsiveness; discuss differences between "objective" and "subjective" measures; present examples from HNC in which the patient-reported outcome does not agree with a more traditional measure; and provide examples of measures that may influence your practice. A case example of "patient-centred decision making" will be provided.

Swallowing Outcome Measures: Selection, Delivery, and Performance

Jo Patterson

Swallowing problems are a top priority concern for patients treated for head and neck squamous cell cancer (HNSCC), with a conservative estimate of over 60% of survivors living with moderate to severe dysphagia. Dysphagia is associated with a higher risk of pneumonia, poorer oral intake, prolonged tube feeding, weight loss as well as fundamental changes to eating patterns, social life and consequently poorer quality of life. It is a major cause of distress and burden for family members, since dysphagic survivors often require long-term supportive care. Historically, HNSCC research has focused on survival outcomes and the impact on swallowing has been either underreported or difficult to interpret. HNSCC research is increasingly focused on the reduction of treatment toxicity. It is essential that swallowing outcomes are captured in a systematic and reliable fashion. However, swallowing is complex and multi-dimensional and can be captured in a number of different ways. A comprehensive assessment requires a panel of measures, incorporating a record of impairment along with clinician-rated and patient-reported outcome measures.

Over forty different swallowing instruments, of variable quality, are currently used in research and there is no consensus on how or which swallowing outcomes should be assessed. High quality and defined swallowing outcomes measures are imperative to inform clinical research and to capture clinical outcomes. This presentation will identify and critique the most commonly used swallowing outcome measures, and describes a package fit for clinical and research purposes.

Occlusion Driven Planning for Complex Maxillofacial Reconstruction

Dennis Rohner

The use of free vascularized free flaps for the reconstruction of extended defects is nowadays the standard procedure for the reconstruction of acquired maxillary and mandibular defects. Correct occlusion, adequate reconstruction of soft tissue, correct positioning of the flap within the defect and immediate functional rehabilitation are important factors that decide about the level of success. A meticulous preoperative planning is therefore a must. A combination of 3-D and virtual planning allows us to determine the new occlusion, the extension of the suprastructure, the position of the dental implants, the desired shape of the osseous flap and the amount of necessary soft tissue. In a series of cases the development, the technical planning, the surgical steps and our results over the last 19 years will be presented.

Reducing Head and Neck Cancer Morbidity Through Surgery

Hadi Seikaly

This presentation will focus on new and innovative surgical techniques and strategies that reduce the surgical and overall treatment morbidity of head and neck cancer. The presenter will discuss and elaborate on the following approaches

1. The use of surgery as a modality for de-escalating treatment intensities while maintaining survival outcomes
2. The role of surgical gland transfer in reducing xerostomia after radiation treatment.
3. Surgical innovations in reducing shoulder and other morbidities of neck dissection
4. The use of new reconstructive techniques in improving patient outcomes and function

Verbal Presentation Abstracts (continued)

New Hope for Anaplastic Thyroid Cancer in the Era of Targeted Therapy

Mark Zafereo

Anaplastic thyroid cancer is one of the most aggressive human malignancies, with the vast majority of tumors inoperable at presentation and traditional median survival of 3-6 months. Recent advances in the understanding of the molecular genetic landscape of anaplastic thyroid cancer and resultant targeted therapeutic intervention with remarkable results have led to United States FDA approval of a BRAF inhibitor and MEK inhibitor combination in the treatment of this disease. With significant tumor response in many patients, there has been renewed effort to re-introduce surgery into the management of this disease, with neoadjuvant targeted therapy and immunotherapy regimens, followed by surgery and postoperative radiation therapy. This presentation will illustrate some early experience demonstrating improvement in patient survival and functional outcomes in what has heretofore been a disease with little hope for long-term survival.

Digitally Planned and Occlusion Driven Mandibular Reconstruction

Hadi Seikaly

Background: The conventional and surgically intuitive use of bone containing free flaps has improved the functional and cosmetic outcomes of head and neck reconstruction but the long-term results of full rehabilitation with osseointegrated implants are inconsistent and at times suboptimal. The use of digital surgical design and simulation has recently emerged as a viable technology in jaw reconstruction with the promise of improved accuracy and cost effectiveness.

Objective: To report on a cohort of patients that underwent a digitally planned and occlusally driven reconstruction of the mandible we termed the Alberta Reconstructive Technique (ART)

Methods: Pair matched cohort of ART and conventional intuitively reconstructed patients with delayed dental rehabilitation were reviewed. The cohorts were matched for age, sex, diagnosis, and type of jaw reconstruction. The cohorts were evaluated and compared for the following:

1. Safety (Free flap and patients survival)
2. Effectiveness (Number of osteotomies as a surrogate of complexity of reconstruction and number of procedures)
3. Accuracy (Implant utilization)
4. Timeliness (Time to complete dental rehabilitation)
5. Cost effectiveness (Total OR time for complete oral and dental rehabilitation)

Conclusions: The Alberta Reconstructive Technique provides selected patients with an excellent jaw reconstructive option that is safe, effective, accurate, timely, and cost effective.

Verbal Presentation Abstracts (continued)

Zygoma Implants and Maxillectomies – An Alternative for Free Flaps

Dennis Rohner

Zygoma implants are designed for the treatment of maxillary defects in order to support functional prosthetics. In combination with a pedicled temporal muscle flap the use of zygoma implants offers a perfect solution for a functional rehabilitation, where alternatively only a free flap would be another option. The planning of resection and reconstruction in one stage leads to a complex solution also for patient with high comorbidities.

Reconstruction of the Lips

Jeremy L Wilson MBBS, FRACS, ASPS, ASAPS

Plastic, Cosmetic, and Reconstructive Surgeon, The Royal Melbourne Hospital, Melbourne, Australia, Honorary Lecturer, Department of Surgery, The University of Melbourne, Faculty Member, Melbourne Advanced Facial Anatomy Course (MAFAC)

Final disclosure - The author has no disclosures

The lips are the primary aesthetic feature of the lower central face with functional requirements that include oral competence in eating and drinking, speech and sound production, forceful blowing, and kissing. A primary characteristic of the lips is their mobility, which is critical for natural appearance and function.

Reconstruction of the lips is most commonly required for tumours or trauma, with other pathologies being rare. Reconstruction of most lip defects is simple as a sufficient segment of sensate, dynamic lip is available to allow for direct closure, particularly in the lower lip. Reconstruction of larger lip defects in which an adequate remaining lip segment or opposite lip is unavailable is more complex as non-lip tissues are frequently required. Historically, these reconstructions may have looked fine at rest, but appeared abnormal in the living, moving patient.

An overview of lip reconstruction is presented using case examples to highlight important principles to consider in defect analysis and operative planning.

The presentation will focus on the authors personal experience with new techniques developed to improve functional and aesthetic outcomes following reconstruction of large and complex lip defects, including those that extend to involve the soft tissues of adjacent facial subunits or the underlying facial skeleton.

Finally, a new paradigm for lower lip reconstruction is presented which allows for an aesthetic balanced reconstruction of total full thickness lower lip defects with sensate, dynamic residual lip and non-lip tissues avoiding the need for lip sharing and issues with microstomia.

Verbal Presentation Abstracts (continued)

Free Flap Monitoring

Martin Batstone

University of Queensland Royal Brisbane and Women's Hospital, Oral and Maxillofacial Surgery, Herston, Qld, Australia

Keywords: free flap, observations, reconstructions

Purpose/Aim: Following free flap observations it is universal practice to monitor them and allow for attempted salvage should there be compromise in either the arterial supply, or venous drainage. These observations can range from simple clinical examination, all the way through to implanted ultrasound couplers. The cost of these observations vary depending on the technique used, and the frequency of the observations. Like all tests the pre test probability is important in determining whether or not a test is useful.

Materials and Methods: A consecutive series of over 500 free flaps performed by a single surgeon was examined. The method of free flap observation used, return to theatre for salvage, flap failure and cost of free flap observations was examined.

Results: Over 500 free flaps were performed by a single surgeon for head and neck reconstruction. There was one total failure (0.2%). No attempted salvage was undertaken on this flap. There was one flap which returned to theatre with venous compromise and was salvaged (0.2%). Free flap observations added no tangible benefit to 99.8% of patients. The overall flap survival was 99.8%.

Conclusions: Free flap observations are a test. For a test to be useful, the condition tested for has to be able to be changed by intervention and it has to be of sufficient frequency to warrant the cost of the test. It is impossible to quantify the donor site morbidity of a failed flap but this study would indicate that free flap observations are a poor value test if the survival rate is high.

Innervation Prevents Early-Staged Resorption in Iliac Flap for Mandibular Reconstruction

Wang, Lei *, Wei, Jian-Hua; Yang, Zi-Hui; Yang, Xi; Ong, Hui-Shan; Lei, De-Lin; Zhang, Chen-Ping

Ninth People'S Hospital, Shanghai Jiao Tong University School of Medicine Department of Oral & Maxillofacial-Head & Neck Oncology, Shanghai, China

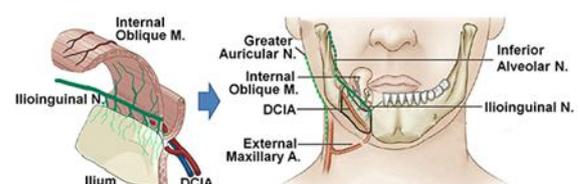
Keywords: bone homeostasis, innervation, vascularized flap

Purpose/Aim: Postoperative resorption of vascularized bone grafts jeopardizes the success of dental implants and functional rehabilitation of the jaw. We and others demonstrate that nerves regulate bone marrow mesenchymal stem cell (BMMSC) mobilization and differentiation, supporting the previously neglected yet crucial role of innervation in bone turnover and regeneration. The purpose was to develop and evaluate a novel technique for simultaneous innervation of vascularized iliac flaps in mandibular reconstruction.

Materials and Methods: Twenty-two aged patients with postoncologic continuity defects of the mandible underwent mandibular reconstruction (10 innervated and 12 control flaps). Graft bone resorption was analyzed by computed tomographic scans at 6, 12 and 18 months postoperatively, and bone quality was evaluated for dental implantation, with histologic and histomorphometric analyses for graft samples. BMMSCs were isolated and characterized to determine their osteogenic differentiation capabilities.

Results: Graft bone density loss and osteoclast activity in the control group was markedly higher than in the innervated group. Bone quality evaluation indicated a suitable condition for dental implantation in all patients in the innervated group but in 41.7 percent of patients in the control group. Osteogenic differentiation of BMMSCs was significantly higher in the innervated group than in the control group.

Conclusions: Innervated iliac flaps may effectively prevent bone resorption of grafts in mandible reconstruction that otherwise jeopardize the success of dental implants. This new strategy of innervation of bone flaps appears clinically valuable and provides insights into the bone homeostasis of grafts for functional reconstruction.



Verbal Presentation Abstracts (continued)

An Cad/Cam Solution for Facial Prostheses: China's Experience

Wu, Guofeng *, Yimin Zhao, Shizhu Bai, Zhihong Feng

Nanjing Stomatological Hospital, Medical School of Nanjing University, Department of Prosthodontics, Nanjing, Jiangsu, China

Keywords: Facial defect; Prosthesis; Digital solution

Purpose/Aim: New advanced technologies demonstrate significant advantages in this field although their usefulness still beyond a shadow of doubts. This presentation introduces a China solution for the digital rehabilitation of facial defects.

Materials and Methods: An intelligent software system was developed, which contains three major functional units (data acquisition of digital facial impression, individual simulation of prostheses design and 3D printing of customized prostheses). For the unilateral facial defects (e.g., orbital defects), the data of normal side was copied and mirrored to generate the contour data of the facial prosthesis. For the bilateral facial defects (e.g. both ears loses) or the multi-organs facial defects, a 3D models database of Chinese facial organs (Ears and Noses) was built in advance and offered the parentage data for the digital restoration. The system finalized the facial prosthesis data and exported it to an Rapid Prototyping (RP) machine. The technician flaked the negative pattern with silicone material and produces the definitive facial prosthesis directly.

Results: The new digital system realized the excise recovery of individual patients' appearances. It also greatly shortened the clinical time for patients within one day. More than 100 clinical cases have proved its good effects and high efficiency.

Conclusions: The clinical experiences proved that this novel approach time and cost more effective. It will replace the traditional way of facial prostheses in the future and benefit the spread of facial prosthetics in clinic.

Nodal Ratio: Prognostic Utility in Cutaneous HNSCC; A Multi-Institutional Study

Vasan, Kartik *, Low, Hubert; Gupta, Ruta; Asher, Rebecca; Gao, Kan; Palme, Carsten; Gyorki, David; Veness, Michael; Clark, Jonathan

Chris O'brien Lifehouse, Head & Neck, Camperdown, Nsw, Australia

Keywords: lymph node ratio, cutaneous squamous cell carcinoma, prognostic

Purpose/Aim: Several studies have demonstrated the lymph node ratio (LNR) as an independent prognosticator of survival in metastatic head and neck cutaneous squamous cell carcinoma (HNSCC). However, there are differing reports on the LNR value utilised to stratify patients. The aim of the study was to validate a suitable LNR threshold in a large cohort of patients.

Materials and Methods: A retrospective review of all HNSCC patients with parotid and/or cervical nodal metastases was performed from 3 Australian tertiary institutions. The primary endpoints were overall survival (OS), disease free survival (DFS) and disease specific survival (DSS). The minimal-P approach was used to investigate the optimal LNR threshold, stratifying patients into low and high-risk groups. Cox proportional hazard regression models and Kaplan-Meier methods were used for survival analysis.

Results: There were a total of 709 patients with a mean age of 72.112.5 years. Median overall survival was 8.2 years and median time to disease progression was 14.2 years. The median LNR was 9.5% (IQR: 4.5 – 22.6) with an average nodal yield (NY) of 23 nodes, and a median of 2 (range 0 - 67) positive nodes. Our data included 185 (26%) recurrences and 215 (30%) deaths. A LNR of 7% was a significant predictor of poorer DFS (HR: 1.86; P < 0.001), OS (HR: 1.91; P < 0.001) and DSS (HR: 1.99, P < 0.001) on univariate analysis.

Conclusions: An LNR of 7% carried greatest prognostic effect in risk stratifying patients into low and high risk. This carries implications in the selection of adjuvant treatment.

Verbal Presentation Abstracts (continued)

Acinic Cell Carcinoma of the Parotid: A Retrospective Cohort Study

Rao, Amshuman *, Ciders, Anders: Maher, Nigel: Floros, Peter: Crawford, Julia: Parker, Andrew: Leavers, Brett: Jacobson, Ian: Smeed, Robert: Gallagher, Richard

St Vincent'S Hospital Otorhinolaryngology/Head and Neck Department, Darlinghurst, Nsw Australia St Vincent'S Private Hospital Otorhinolaryngology/Head and Neck Department, Darlinghurst, Nsw Australia Prince of Wales Otorhinolaryngology/Head and Neck Department and Research Group, Randwick, Nsw, Australia Sydney Children'S Hospital Otorhinolaryngology/Head and Neck Department, Randwick, Nsw, Australia, Sydney, Australia

Purpose/Aim: Acinic cell carcinoma (AcicC) accounts for 18% of all malignant salivary gland tumours. Occurring most commonly in the parotid gland, resection is usually curative if detected and treated early, however, high-grade transformation is associated with poorer prognosis. There are no Australian cohort studies examining parotid gland AcicC. This study examines our experience treating parotid AcicC

Materials and Methods: Patients with a histopathological diagnosis of parotid AcicC were included. Clinico-demographic and mortality data were obtained from patient's medical records and GPs. Disease grade was obtained from histopathological specimens and staging data was drawn from preoperative assessment. Survival analysis was undertaken and regression analysis of patient factors, disease factors and mortality as the primary endpoint. Secondary endpoints included disease free survival and recurrence.

Results: 36 patients were identified across all centres with a mean age of 50.7 (range 14 to 83). All patients were treated surgically. There were twice as many females affected (24 vs 12). Smoking was not significantly associated with disease. The most common presenting symptom was a painless parotid lump (93.5%). High-grade pathological features were associated with recurrence (n=2) but not mortality (n=1). Patients were noted to have a follow-up range between 1 and 15-years. Mean disease free survival was found to be 6.1 ± 5.9 years with overall survival of 6.7 ± 6.3 years.

Conclusions: This study was able to characterise the overall mortality risk of AcicC in three major tertiary referral centres in Australia. High-grade pathological changes were found to be associated with recurrence of disease but not mortality.

Lymph Node Metastasis in Squamous Cell Carcinoma of the Lip

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Keywords: lip, squamous, node

Purpose/Aim: Traditionally in Queensland, squamous cell carcinoma (SCC) of the lip has been less aggressively treated compared with oropharyngeal SCC, with respect to treatment of the nodal basin. Surgical management is more in line with that of cutaneous SCC.

We set out to define the rate of lymphatic metastasis in Lip SCC, identify risk factors and explore the role of sentinel node Biopsy and elective neck dissection in high risk patients.

Materials and Methods: We performed a retrospective review of all lip resections performed at the Royal Brisbane Hospital over 5 years (2013 - 2018). Histological and clinical data was collated for every invasive SCC of the lip. Nodal disease at presentation or regional lymph node recurrences were recorded.

Results: 572 patients underwent lip resection during the study period. 10 of 162 patients with invasive SCC of the lip (6.2%) presented with nodal metastases or had recurrence within the neck after initial treatment. Tumour size was found to be a significant predictor of nodal metastasis. In tumours greater than 20mm (T2), there was an 16.3% rate of nodal metastases. Depth of invasion, invasion into skeletal muscle, and smoking status were also positively correlated with lymph node metastasis.

Conclusions: In our population, we report a high rate of metastatic nodal spread from lip SCC. Several factors including tumour size and depth of invasion were found to be significant predictors of metastasis. We propose a change in treatment paradigm whereby patients are offered sentinel node biopsy or elective neck dissection for high risk tumours.

Reconstruction after Radical Parotidectomy

Jonathan Clark

Abstract not submitted

Verbal Presentation Abstracts (continued)

PD-1 Blockade with Cemiplimab in Advanced Cutaneous Squamous-Cell Carcinoma

Alesha Thai, Rischin, Danny; Midgen, Michael; Thai, Alesha; Fury, Matthew

Background: No systemic therapies have been approved for the treatment of advanced cutaneous squamous-cell carcinoma. This cancer may be responsive to immune therapy, because the mutation burden of the tumor is high and the disease risk is strongly associated with immunosuppression. In the dose-escalation portion of the phase 1 study of cemiplimab, a deep and durable response was observed in a patient with metastatic cutaneous squamous-cell carcinoma.

Methods: We report the results of the phase 1 study of cemiplimab for expansion cohorts of patients with locally advanced or metastatic cutaneous squamous-cell carcinoma, as well as the results of the pivotal phase 2 study for a cohort of patients with metastatic disease (metastatic-disease cohort). In both studies, the patients received an intravenous dose of cemiplimab (3 mg per kilogram of body weight) every 2 weeks and were assessed for a response every 8 weeks. In the phase 2 study, the primary end point was the response rate, as assessed by independent central review.

Results: In the expansion cohorts of the phase 1 study, a response to cemiplimab was observed in 13 of 26 patients (50%; 95% confidence interval [CI], 30 to 70). In the metastatic-disease cohort of the phase 2 study, a response was observed in 28 of 59 patients (47%; 95% CI, 34 to 61). The median follow-up was 7.9 months in the metastatic-disease cohort of the phase 2 study. Among the 28 patients who had a response, the duration of response exceeded 6 months in 57%, and 82% continued to have a response and to receive cemiplimab at the time of data cutoff. Adverse events that occurred in at least 15% of the patients in the metastatic-disease cohort of the phase 2 study were diarrhea, fatigue, nausea, constipation, and rash; 7% of the patients discontinued treatment because of an adverse event.

Conclusions: Among patients with advanced cutaneous squamous-cell carcinoma, cemiplimab induced a response in approximately half the patients and was associated with adverse events that usually occur with immune checkpoint inhibitors. (Funded by Regeneron Pharmaceuticals and Sanofi; ClinicalTrials.gov numbers, NCT02383212 and NCT02760498.)

Sentinel Lymph Node Biopsy for Cutaneous Squamous Cell Carcinoma

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Massachusetts Eye and Ear Infirmary, Surgical Oncology and Reconstructive Surgery, Boston, MA, USA

Keywords: sentinel lymph node biopsy, cutaneous squamous cell carcinoma, parotid, neck

Purpose/Aim: High-risk squamous cell carcinoma has a high mortality when a regional metastasis is present. Sentinel lymph node biopsy (SLNB) offers the potential to identify microscopic metastasis at its earliest detectable point in time. This study examines the Brigham and Women's staging system as a predictor of occult metastasis and patient outcomes based on SLNB status.

Materials and Methods: A retrospective review of a prospectively collected database of SLNB was performed to identify all patients undergoing SLNB for cutaneous squamous cell carcinoma. Criteria for SLNB, outcome of biopsy, adjuvant treatment, recurrence, and survival were all recorded.

Results: Eighty-nine patients were identified having undergone SLNB. All patients had at least two of the following criteria: tumor >2cm in diameter, invasion beyond the subcutaneous fat, poorly differentiated, or perineural spread. 7% of patients had positive SLNB. 10 local recurrences, seven satellite metastasis and three distant metastases occurred in this population. In the absence of other recurrent disease, one patient developed recurrent regional lymph node metastasis. Adjuvant radiation was not given to SLNB negative patients in the lymph node basin with only one recurrence (1%). Treatment of SLNB positive patients was mixed. Overall survival for the cohort was 88%. Disease Specific Survival was 94%. No patients with positive SLNB died of disease. All patients who died of disease had satellite metastasis or distant metastasis.

Conclusion: BWH staging system is a reasonable predictor of occult lymph node metastasis. SLNB is a reliable technique for identifying occult regional metastasis. SLNB negative patients who do not receive adjuvant radiation have a very low risk of regional recurrence. Positive SLNB does not predict a higher risk of overall recurrence and death.

Verbal Presentation Abstracts (continued)

Panel Case

Hadi Seikaly, Martin Batstone, Jonathan Clark, Richard Barton

Abstract not submitted

Techniques for Managing Locoregionally Advanced Thyroid Cancer

Mark Zafereo

This presentation will demonstrate in video format principles in the surgical management of locoregionally advanced thyroid cancer, including principles of lateral neck dissection specific to thyroid cancer, retropharyngeal dissection, and tracheal resection and reconstruction.

Functional Outcomes in Managing Early Glottic Cancer

Amanda Richards

Abstract not submitted

Management of Advanced and Recurrent Laryngeal Tumors

Julia Crawford

Abstract not submitted

Management of the Dysfunctional Larynx after (Chemo)-Irradiation

Caroline Jefferey

Direct and indirect laryngeal irradiation can have long-term impacts on swallowing, voice, and airway function. Vocal fold decreased pliability, paresis, paralysis, laryngeal stenosis, and fibrosis are problems that often require multidisciplinary and varied approaches to management.

Objectives:

By the end of the talk, the audience will:

1. Gain an understanding of the normal functions of the larynx
2. Appreciate the pathophysiology of chemo-radiation induced laryngeal dysfunction
3. Understand contemporary medical and surgical strategies for managing laryngeal dysfunction

Use of Statistical Models in Head and Neck Cancer Survival

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Keywords: models, prediction, cancer survival

Purpose/Aim: Statistical models are used to predict which patient, disease and treatment factors influence cancer-specific survival (CSS) in head and neck cancer (HNC) patients. Interpreting models can aid healthcare professionals to make better decisions in the management of HNC patients. Due to the increasing development of statistical software, the need to comprehend models and translate cancer research into practice, has become increasingly important. Thus, we compared four statistical models; Support Vector Machine (SVM), Bayesian Network (BN), Logistic Regression (LR) and Chi-square Automatic Interaction Detector (CHAID), in determining factors that impact upon CSS.

Materials and Methods: Patients treated for laryngeal squamous cell carcinoma at the Prince of Wales Hospital between 2000 and 2015 were analysed. Factors that potentially impact on CSS were identified using Kaplan-Meier in SPSS Statistics-v25. Subsequently, eight factors were analysed in SPSS Modeler-v18. Model outputs were then compared.

Results: Analysis was conducted on 249 patients. SVM was the most accurate model (77%), identifying ECOG status, fitness for surgery, tumour site, T, N and clinical stage, radiotherapy dose and treatment length, as influencing factors of CSS. BN also identified these factors but with lower accuracy (60%). With 72% accuracy, CHAID identified all factors except N stage and radiotherapy treatment length. T and clinical stage were the only factors identified by LR with 66% accuracy.

Conclusions: Comparison of the four statistical models demonstrated that each model performed differently in the prediction of CSS. Therefore, researchers should consider evaluating multiple models simultaneously when predicting outcomes in HNC patients to ensure accurate and well-informed patient management.

Verbal Presentation Abstracts (continued)

Open Surgical Management of Upper Airway Tumours

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Keywords: Cricotracheal, Airway, Tumour

Purpose/Aim: Subglottic and tracheal tumours constitute an extremely rare and often life-threatening entity. Surgical resection of these tumours and reconstruction of the airway is both complex and challenging. While numerous procedures have been described single staged resection with primary anastomosis has long been regarded as the 'gold standard' treatment modality.

Materials and Methods: Data from 60 patients who have undergone a single staged open laryngotracheal, cricotracheal or tracheal resection with primary anastomosis was retrospectively collected. Demographic and surgical outcomes between neoplastic and non-neoplastic sub-groups were compared. The operative technique was described.

Results: The mean age was 56.8 years with 71.7% female. Tumours accounted for 16.7% of airway stenosis cases. The average stenosis length, minimum airway diameter and distance below the vocal cords for neoplastic cases were 21.2mm (SD 10.75), 9.4 mm (SD 4.4), and 28mm (SD 23.59) respectively. Mean follow up was 42.7 months. Early and definitive success rates were 70% and 90% for neoplastic cases and 88% and 96% for non-neoplastic cases. A minor complication occurred in 36.7% patients. There were 2 peri-operative deaths.

Conclusions: Neoplasia creates additional complexity to the operative management of airway stenosis that does not exist in the resection of non-neoplastic lesions. In general, there are two types of neoplastic stenosis, infiltrating lesions and intraluminal lesions. Resection requires consideration of clear margins in two dimensions; a clear stenosis margin and a clear neoplastic margin. Like their non-neoplastic counterparts, neoplastic airway lesions can be successfully and definitively managed using open surgical resection and primary anastomosis.

Postoperative Pulmonary Complications Following Major Head and Neck Cancer Surgery

Shaw, Leonie *, Granger, Catherine

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Purpose/aim: To determine the incidence of post-operative pulmonary complications (PPC) in patients following surgery for head and neck cancer (HNC) who required a tracheostomy using two different measurement techniques. The secondary aim was to examine the risk factors for PPC development in this population.

Materials and Methods: This prospective observational study assessed 60 consecutive patients undergoing major HNC surgery requiring a tracheostomy. PPCs were assessed daily with the Melbourne Group Scale (a reliable and validated measurement technique to detect PPC) and by retrospective review of Health Information Service coding for identification of any respiratory complications.

Results: PPC occurred in 9 (15%) of patients based on the Melbourne Group Scale; and in 27 (45%) of patients based on Health Information Service coding. The development of a PPC did not statistically correlate with preoperative variables of age, smoking history or comorbidities. However, higher BMI was seen in patients who developed a PPC based on HIS coding ($p=0.022$). There was a statistically significant relationship between diagnosis of PPC by the MGS and a shorter time to sit out of bed post-surgery ($p=0.038$).

Conclusions: Patients undergoing major HNC surgery requiring a tracheostomy have a significant incidence of PPC. The incidence of PPC is higher when measured using HIS coding, compared with the Melbourne Group Scale. Further research is required to establish the role of physiotherapy in the management of PPCs in this population.

Verbal Presentation Abstracts (continued)

Providing Head and Neck Cancer Care in the Developing World

Mark Zafereo, Dr. Vince Biron, Craig Howes

Purpose: The purpose of this study is to understand the feelings of patients and family members regarding an “allow natural death” (AND) protocol at the end of life at Tembisa Provincial Tertiary Hospital and whether it is acceptable in this environment. In addition, this study aims to understand the knowledge and beliefs of healthcare workers who deal with patients at the end of life regarding end of life directives and to identify potential barriers that would prevent the implementation of such a protocol at Tembisa Hospital.

Methods: A qualitative phenomenological strategy and design was chosen for this project. Data collection took the form of in depth, guided interviews with study participants and later examined for patterns. Data was translated where needed and transcribed.

Results: A total of 18 participants were interviewed, comprising 6 patient participants, 5 family member participants and 7 healthcare worker participants (including 2 doctors and 5 nursing sisters). In total 6 hours and 18min of data were collected for analysis.

Being a descriptive qualitative study in a multicultural environment, the data collected were diverse and varied greatly both within and across study groups (patients, family members and healthcare workers). In addition to the mixed response to “allow natural death” directives and their application in a clinical context there was significant conflation of the topics of end of life directives and euthanasia. This is in keeping with other research in the field but was an incidental finding in the context of this project. Factors influencing the decisions around the use or refusal of end of life directives appear to be in keeping with other similar studies internationally including inadequate understanding of the disease process, poor understanding and unrealistic outcomes of CPR

(including health professionals), religion and culture and the feeling of being a burden. An interesting finding of this study was that healthcare workers often performed CPR inappropriately on patients for a number of reasons including practicing the skill and for more complex external emotional needs of other patients and family members. Finally, it was noted that AND directives were very rarely offered to patients or family members and as a result poorly documented leading to inappropriate resuscitation and underutilisation of these directives.

Conclusions: This study appears to support the use of AND directives in the multicultural South African context despite a fair number of negative responses. Negative reactions to such directives could be avoided with appropriate explanation and understanding CPR and the application of end of life directives. The data appears in line with other similar international studies.

Changes in Treatment Patterns for Medullary Thyroid Cancer

Mark Zafereo

Guidelines have become increasingly important in healthcare as consumers and governments demand accountability in quality metrics and cost. There is some controversy in international medullary thyroid cancer guidelines specifically in reference to elective management of the lateral neck. The American Thyroid Association and the British Thyroid Association Medullary Thyroid Cancer guidelines suggest varying approaches for management of the radiographically negative neck in patients with medullary thyroid cancer. Differences among national guidelines highlight varying treatment practices and rationale for these practices within individual countries and practice settings. This presentation will outline guidelines for the evaluation and surgical management of medullary thyroid cancer; to understand differences in guidelines between countries and the rationale and evidence for such differences; to discuss advances in targeted therapy and changes in indications for postoperative radiation therapy; and to define future trends and areas of study to work toward consensus in international medullary thyroid cancer evaluation and management.

Molecular Imaging and Radionuclide Therapy for Advanced Thyroid Cancer

David Pattison

Abstract not submitted

Systemic Options in Advanced Thyroid Malignancies

Ben Solomon

Abstract not submitted

Verbal Presentation Abstracts (continued)

Mutation Profiling of Thyroid Nodules Using Ddpcr

Biron, Vincent *, Matkin, Ashlee; Kostiuk, Morris; Williams, Jordana; Cote, David; Harris, Jeffery; Seikaly, Hadi; O'connell, Daniel

University of Alberta, Surgery, Division of Otolaryngology-Head and Neck Surgery, Edmonton, Alberta, Canada

Keywords: droplet PCR, BRAF, RAS

Purpose/Aim: This study aimed to assess the analytic and clinical validity of RAS and BRAF ddPCR mutational testing as a diagnostic tool for thyroid fine needle aspirate biopsy (FNAB).

Materials and Methods: Patients with thyroid nodules meeting indication for FNAB were prospectively enrolled from March 2015 to September 2017. In addition to clinical protocol, an additional FNAB was obtained for ddPCR. Optimized ddPCR probes were used to detect mutations including HRASG12V, HRASQ61K, HRASQ61R, NRASQ61R, NRASQ61K and BRAFV600E. The diagnostic performance of BRAF and RAS mutations was assessed individually or in combination with Bethesda classification against final surgical pathology.

Results: A total of 208 patients underwent FNAB and mutational testing with the following Bethesda cytologic classification: 26.9 % non-diagnostic, 55.2 % benign, 5.3 % FLUS/AUS, 2.9 % FN/SPN, 2.4% SFM and 7.2 % malignant. Adequate RNA was obtained from 91.3 % (190) FNABs from which mutations were identified in 21.1 % of HRAS, 11.5 % of NRAS and 7.4 % of BRAF. Malignant cytology or BRAFV600E was 100 % specific for malignancy. Combining cytology with ddPCR BRAF600E mutations testing increased the sensitivity of Bethesda classification from 41.7 to 75 %. Combined BRAFV600E and Bethesda results had a positive predictive value (PPV) of 100% and negative predictive value (NPV) of 89.7% for thyroid malignancy in our cohort.

Conclusions: DdPCR offers a novel and ultrasensitive method of detecting RAS and BRAF mutations from thyroid FNABs. BRAFV600E mutation testing by ddPCR may serve as a useful adjunct to increase sensitivity and specificity of thyroid FNAB.

Pre-Treatment Protocols to Optimize Outcome with Vascularized Bone Free Flap Reconstruction of Maxillo-Mandibular Defects USA

Devin J. Okay

Mount Sinai Health System, New York, New York

Reconstruction of acquired maxillo-mandibular defects demand an interdisciplinary defect-oriented approach to attain favorable patient outcomes. This presentation will address the growing importance of prosthodontic treatment planning for functional recovery. Implant-supported dental restoration with surgical reconstruction of acquired defects advances the level of patient care and rehabilitation. It requires a better understanding among the specialties for the restorative decision-making process.

Factors involved to help guide this approach include:

1. A defect-oriented approach to surgical reconstruction.
2. Treatment algorithms for optimal functional recovery.
3. Computer-assisted surgery and rehabilitation.
4. Importance of prosthodontic framework design.
5. Potential for immediate restoration.
6. Awareness of problems, pitfalls and treatment sequelae.

Comparative diagnostic performance of pre-operative standard cytology and ddPCR mutation testing.

MEASURE	BETHESDA N=91	BETHESDA V/V ¹	BRAFV600E	BRAFV600E + BETHESDA V/V ¹	BRAFV600E + HRASQ61K + BETHESDA V/V ¹
SENSITIVITY	41.7 (27.5-58.3)	41.7 (27.5-58.3)	50 (30.7-68.4)	75.0 (55.3-88.3)	77.8 (57.3-91.4)
SPECIFICITY	76.7 (54.3-89.3)	100 (92.6-100)	100 (94.1-100)	100 (94.1-100)	98.4 (91.5-100)
PPV*	68.4 (49.7-79.8)	100	100	100	95.3 (74.8-99.3)
NPV**	12.7 (4.8-40.4)	80 (54.1-89.8)	81.1 (75.1-86.3)	89.7 (82.1-94.3)	91 (83.4-95.4)
LR	1.58 (0.86-2.72)	-	-	-	48.2 (33.9-68.9)
NLR	0.79 (0.5-1.1)	0.4 (0.3-0.8)	0.5 (0.4-0.7)	0.25 (0.1-0.5)	0.2 (0.11-0.5)

NLR, negative likelihood ratio; NPV, negative predictive value; LR, positive likelihood ratio; PPV, positive predictive value.
¹Because the sample sizes in disease positive and disease negative groups may not reflect the true population prevalence of the disease, PPV and NPV may be inaccurate. 95 % confidence interval is shown in brackets where appropriate.
²Combined BRAF and Bethesda V/V¹ classifies test as positive if BRAFV600E and/or Bethesda V/V¹ is present.

Verbal Presentation Abstracts (continued)

Pre-Treatment Protocols Netherlands

Harry Reintsema*, Anke Korfage, Willem Noorda, Nathalie Vosselman

University Medical Center Groningen and University of Groningen. Dept. for Oral and Maxillofacial Surgery and Maxillofacial Prosthetics, Groningen, the Netherlands

Prevention of oral sequelae ensuing from the treatment of malignant disease in the head and neck region, as well as to restore (oral) functioning (rehabilitation) are the main goals of a pre-therapy (oral) screening as part of the multidisciplinary work flow in head and neck cancers. Curing the disease has the main priority but should be simultaneously accompanied with the planning of care needed to bring the patient back to normal life. Many disciplines might become involved in this process and should be included in the head and neck oncology team. Multidisciplinary consulting and treatment planning has become the standard.

The OMS care team (oral maxillofacial surgeon, maxillofacial prosthodontist, and oral hygienist) see all head and neck oncology patients on the first day of admission to identify dental/oral risk factors (foci). Possible sources for dental / oral complications during or after oncological treatment have to be eliminated by dental treatment or extraction on beforehand.

To ensure functioning after oncological treatment an oral / maxillofacial rehabilitation plan has to be framed, which might require the preservation of strategic teeth for prosthetic success. Based on an individualized risk analysis of each tooth and weighing the general situation as well, a specific pre-therapy dental – prosthetic treatment plan has to be developed. This plan should minimize the risks on dental / oral complications and optimize the possibilities for prosthodontic recovery. Early application of an oral prevention protocol is essential in especially all dentate patients. In edentulous patients the use of dental implants has to be considered to retain instable prostheses. Preferably to be installed during ablative surgery ensuring initial osseointegration before the onset of radiotherapy. Also for facial rehabilitation implant retention of facial prostheses has to be considered. Proper prosthetic implant planning is needed, in which digital technology has become most helpful in the planning process and for developing and producing guides.

In a multidisciplinary reconstruction meeting the pro's and con's of combinations of plastic surgical reconstruction, implant retention and prosthetics in oral maxillofacial rehabilitation will be considered and later on to be discussed with the patient.

Head and Neck Rehabilitation: How Pretreatment Choices Impact the Final Outcomes?

Meriting Thokoane BDS, DPH, MDent

Department of Oral Rehabilitation, School of Oral Health Science, Faculty of Health Sciences, University of the Witwatersrand

It has been long established that the treatment of any cancer if it is to be done well, requires a multidisciplinary team approach. The management of the head and neck cancer patient is no different and each team member should be involved from the treatment planning phase if the patient is to benefit. Cancer management must plan for and include patient rehabilitation if we are to address patient centred outcomes and not only achieve diseases eradication without giving thought to patients' quality of life.

The head and neck region is a complex framework of the skull and facial bones. This structure houses vital structures and some organs necessary to accomplish essential daily activities (speech, mastication & deglutition), and all five senses essential for us to interact with our environment as well as with each other are to be found in the head region.

The management of head and neck cancer may have an effect on function and/or aesthetics and these outcomes can be expected and planned for, even if only to address them.

Verbal Presentation Abstracts (continued)

Application of Prefabricate Denture in The Rehabilitation of Oralmaxillofacial Deformity

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Keywords: Computer Aided Design, Oral-Maxillofacial Defect and Deformity, Rehabilitation

Purpose/Aim: The teeth, jaws and TMJ are important components of oral-maxillo-facial system. However, trauma or tumor resection might cause serious problems to these structures simultaneously. The treatment effect should be very difficult to ensure since there is no reference that can be relied. We developed a new treatment process for these patients.

Materials and Methods: The relative position between upper and lower jaw, as the profile of bone structure were evaluated on three-dimensional reconstructed model. Treatment scheme was decided to ensure the ideal maxilla-mandibular relationship and the normal facial profile requirements at the same time. The most important item is the prefabrication of removable denture; the preoperative oral impressions were obtained, scanned and registered into the CT model; then the relative position between upper and lower models was determined, and a recording splint was designed and fabricated; the real models of both jaw were mounted and removable dentures were fabricated before surgery; the prefabricated removable dentures could be used to help surgeon define the right maxilla-mandibular relationship and intermaxillary fixation in operation.

Results: Ten patients were treated with this new method. Just only one surgery, a good relationship between the jaws could be obtained; all the patients restored their oral function as well as facial appearance within 1 year.

Conclusions: All the treatment procedures and outcomes by far have proved that, with the method mentioned above, patients could get shorter treatment cycle, more-reliable outcome, and better treatment quality. Meanwhile, with the help of the prefabricate removable dentures, the requirements of function and aesthetics could be achieved.

Evaluation of Peel-Bond Strength Between Plexiglas-Acrylic and Maxillofacial Silicone

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Keywords: Maxillofacial Silicone, Peel bond strength, Plexiglas acrylic

Purpose/Aim: To evaluate peel-bond strength between Plexiglas-acrylic and maxillofacial silicone A-2186 by using different primers and adhesives.

Materials and Methods: The 180-degree Peel bond strength between maxillofacial silicone A-2186 and Plexiglas acrylic was assessed by using three different primers (A-306, A-304 and A-330G) and two different adhesives (A-564, Silastic adhesive type-A). Prefabricated heat cured plexiglas acrylic was used to bond with maxillofacial silicone A-2186. Specimens were fabricated in metal mold and peel bond strength was evaluated by using universal testing machine. Analysis of specimens was done by One-way ANOVA and Tukey post hoc test ($\alpha=0.05$). Modes of failure were assessed by SEM images and categorized into cohesive, adhesive and mixed failures.

Results: There was significant difference in peel bond strength among all test groups ($p < 0.05$). The primer A-330 had highest peel bond strength of 4.67N/mm among primers while the primer A-306 with Silastic adhesive type-A combination showed the highest peel bond strength of 1.93N/mm among adhesive groups. Cohesive failures were seen with primer A-330, while mixed failures were found with primer A-306. Adhesive failures were commonly seen with primer A-304 and combination (primer A-306 and adhesives) groups.

Conclusions: The primer (A-330) and primer & adhesive combination (A-306 & Silastic medical adhesive type-A) had shown highest bond strengths as compared to remaining test groups. Primer A-306 had significantly enhanced the bond strength for respective adhesive groups. Cohesive failures were seen predominantly with primer A-330. Plexiglas acrylic might be used as an alternative material to conventional acrylic resin due to comparable results with previous studies.

Verbal Presentation Abstracts (continued)

Digital Technology to Design and Fabricate Obturators

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Keywords: Digital design of obturator, maxillectomy patient, CAD/CAM prosthesis

Purpose/Aim: The purpose of this study is to develop a total digital technology for designing and fabricating maxillofacial obturators based on integrating multi-source data.

Materials and Methods: Three maxillectomy patients were recruited in this study. Patients were asked to get both intraoral optical scanning and spiral CT at the same visit. Multi-source data were exported to Geomagic software. A complete digital maxilla model, which includes the defect of the maxilla, the residual dentition and palatal area, was established. The metal framework of the obturator was designed by CAD software and fabricated by Selective Laser Melting. In addition, the whole maxilla composite cast was manufactured through 3D printing. After checking the fitness of the framework, the final obturator was fluently processed with the composite cast. Silicone rubber lining was used to judge the adaption of the digital maxilla obturator prosthesis. Subjective evaluation from maxillofacial specialist and quality of life of the patients was recorded.

Results: All the three cases were successfully finished, and a complete digital process of the integrative obturator prosthesis was established. Additional relines were still necessary for some cases. The adaption evaluation showed that the digitized obturators were well fit in the mouth and met the clinical requirements. Patients were satisfied with the prostheses.

Conclusions: This experiment initially explored a complete digital method to design and fabricate obturator prostheses and proved its feasibility through fitting evaluation. Large sample clinical trials and long-term follow-up are needed for further improvements.

President ENT H&N Nurses Group OHNNG

Cheryl Kelly

Abstract not submitted

H&N Cancer Awareness – Spreading the Word

Julie McCossin

There is a growing epidemic of HPV-related Head & Neck Cancers, as well as those caused by tobacco & alcohol. Yet the level of awareness of prevention, symptoms, treatment & recovery remains low among the public, many GPs & other clinicians. Throat cancer survivor, Julie McCossin will share real-life examples of partnerships between patients, nurses & other clinicians to spread the word about H & N cancers to save lives & improve recovery.

Immunotherapy and H&N Cancer

Courtney Thornely

Abstract not submitted

Addressing Communication Challenges in Cancer Care

Meg Chiswell

Abstract not submitted

Strategies to Reduce Radiation Treatment Toxicity in Oropharyngeal Cancer: What can be Accomplished Now

Jolie Ringash

Survival rates for oropharyngeal cancer patients are improving, especially in those with HPV-associated cancers. What can we do to improve the function and quality of life for these young patients who are likely to be long-term survivors? I will provide a classification for general approaches to reducing radiation toxicity in HNC patients, and review evidence from the literature on the impact of making these changes. I will also speculate about potentially fruitful future approaches.

Verbal Presentation Abstracts (continued)

Optimising Swallow Outcomes in Oropharyngeal Cancer

Jo Patterson

Dysphagia following treatment for head and neck squamous cell carcinoma has a devastating impact on survivors' social and emotional well-being. Furthermore, dysphagia is an independent predictor of survival, being associated with dehydration, malnutrition and pulmonary complications. Human papillomavirus-positive oropharyngeal squamous cell carcinoma (OPSCC) survivors have received particular attention in the challenge to reduce treatment toxicities, due to them being younger at diagnosis, having improved survival outcomes, hence living longer with significant functional deficits.

The management of swallowing difficulties is one of the most challenging aspects of care. A number of different strategies to reduce and remediate this side effect have evolved. At diagnosis, patients may now be offered a choice of treatments where survival outcomes are in equipoise, with differing swallowing profiles in the short and long-term. De-escalation of non-surgical treatment is currently under-investigation for the prevention of significant dysphagia. The selection of feeding tube and prophylactic swallowing exercises can affect swallowing outcome. Early assessment and targeted swallowing rehabilitation are crucial to getting the best result for OPSCC survivors. This presentation will draw together recent advances in knowledge and the current research strategy in optimising swallowing outcomes in this population.

Surgical Approaches to the Oropharynx in the Era of TORS: Do We Really Need the Robot?

Dan O'Connell

Introduction: Transoral robotic surgery (TORS) has become an accepted treatment approach to the management of T1 and T2 oropharyngeal carcinomas (OPC) worldwide. Single modality surgical management of T1 and T2 OPC has been shown to provide excellent survival and functional outcomes while de-escalating therapy by reducing the adjuvant radiation therapy requirements in certain patient groups. However due to significant costs, and infrastructure needs many economic barriers exist for resource limited centers wanting to expand the surgical management of early stage OPC.

Methods/Design: Traditional transoral (TO), transcervical (TC) and a novel transoral Endoscopic Assistant Articulated Surgery (TEAS) techniques were used to treat patients with early stage OPC. TEAS is a transoral surgical technique that utilizes a 70-degree rigid endoscope secured by a flexible tension arm and an articulating grasper (SerpENT, Smith & Nephew, Andover MA) and hand-held cautery to visualize,

palpate and remove T1 and T2 OPC. Surgical set-up, technique, as well as surgical results on a case series of consecutive patients treated with these techniques are presented. All trans-cervical approaches via lateral or suprahyoid pharyngotomy required formal locoregional reconstruction. Surgical adequacy, survival, functional outcomes and cost analysis compared to TORS were examined.

Results: Patients presenting with T1 and T2 tumors underwent primary surgery for their OPC treatment. All patients in this cohort had tumours localizing to the base of tongue and/or tonsil only. All surgeries were completed via transoral, combine transoral – transcervical or TEAS approaches. Discordance in 2 patients led to delayed revision resections (1 with TEAS, and 1 with TORS) that subsequently cleared margins. There were no treatment related deaths or major morbidities. Follow-up ranges from 1-63 months, there were no cancer related deaths post treatment in the cohort treated with transoral, transcervical or TEAS. Overall costs were significantly reduced in the TEAS cohort due to the lack of utilization of the robotic surgical system and negating the need for robotics related disposables required in TORS programs.

Conclusions: Non-robotic surgical approaches including TO, TC and TEAS represents a potentially viable alternative to TORS for the majority of tumors presenting in the oropharynx that meet criteria for surgical resection. In TEAS although TORS style 3D visualization is not possible with a single endoscope, many advantages of TEAS are identifiable. Direct 3D visualization enhanced with 2D endoscopy provides an excellent visualization field for surgery in the oropharynx. The tactile feedback provided to the operator via operating through the mouth with hand-held instruments as well as first person positioning at the oral cavity to deal with possible complications including hemorrhage from the lingual vessels showing TO, TC and TEAS may enhance surgical efficiency. The reduced need for infrastructure with TO, TC and TEAS might prove beneficial to resource limited health care environments.

Verbal Presentation Abstracts (continued)

Role of Epigenetic Profiling in Oropharyngeal Cancer Management

Vincent Biron

Abstract not submitted

Primary Trans-Oral Surgery and Risk-Adapted Radiotherapy for Early Tonsillar SCC

Chua, Benjamin *, Dowthwaite, Samuel; Panizza, Benedict; O'Neill, John; Porceddu, Sandro; Jackson, Jim

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Purpose/Aim: Patients treated for early oropharyngeal squamous cell carcinoma (OPSCC) have an excellent prognosis, especially in the setting of human papillomavirus (HPV) associated disease. Trans-oral robotic surgery (TORS) is an increasingly available treatment modality. A prospective, multicentre phase II study was conducted to test appropriate patient selection for unimodality TORS, with the primary endpoint being presence of unexpected pathologic risk factors prompting a recommendation for adjuvant radiotherapy (RT) or chemoradiation (CRT).

Materials and Methods: Patients with biopsy-confirmed OPSCC had comprehensive clinical and radiologic evaluation before final staging (AJCC 7th edition) was assigned in a multidisciplinary team meeting (MDT). Primary TORS was offered to patients with early disease, defined as T1-2 lateralised tonsillar tumours, N0-1 with no evidence of extracapsular spread (ECS). Adjuvant RT or CRT were recommended if prespecified pathologic criteria were met, including close or positive margins, ECS and N2b disease.

Results: 26 patients were recruited and underwent primary TORS, all with negative margins. 7 patients (27%) met one or more upstaging criteria prompting a recommendation for RT or CRT, most commonly pN2b (5 patients, 9%) and close margin (3 patients, 11%). Surgical morbidity was acceptable with two patients (7.7%) returning to theatre for bleeding, and all patients resuming oral alimentation by day 2. At a median 39 months follow-up, disease free survival was 100% and overall survival 96%.

Conclusions: Unimodality TORS as treatment of OPSCC is feasible amongst patients who undergo comprehensive evaluation including MDT review, and oncologic outcomes are excellent. Functional outcome data will be reported separately.

Neck Dissection Rate in Node+ Hpv-Associated Oropharyngeal Carcinoma Following Chemoradiotherapy

Liu, Howard *, Bernard, Anne; Tam, Laura; Milne, Rob; Foote, Matthew; Mcgrath, Margie; Cartmill, Bena; Brown, Elizabeth; Panizza, Benedict; Porceddu, Sandro

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Purpose/Aim: With results of chemoradiotherapy de-escalation trials for Human Papillomavirus (HPV)-associated oropharyngeal carcinoma (OPC) pending, any reduction in toxicity may be offset by the increased need for post-therapy neck dissection (PT-ND) for suspected residual nodal disease. We report the rate of PT-ND and overall regional failure rate following radiotherapy (RT) with or without chemotherapy [(chemo)RT] in node positive HPV-associated OPC.

Materials and Methods: Patients treated between Jan 2005-Jan 2016 on a pre-defined (chemo)RT protocol and 12-week restaging PET/CT (treatment package) with a minimum of 18 months follow up (FU) were analysed. Patients receiving concurrent chemotherapy were prescribed high-dose cisplatin or weekly cetuximab and 70Gy/7 weeks to gross disease. PT-ND was performed if residual nodal disease was suspected on the restaging scan with complete response at the primary site and no evidence of distant disease.

Results: 343 patients were eligible. Median FU was 60 months, with 88% alive at the close-out date. Median age was 59 yrs. The predominant AJCC/UICC 7th Edition (Ed) T- & N-stage were T2 (37.3%) & N2b (44.9%), respectively. The 8th Ed group staging were; Stage I-49%, Stage II-28% & Stage III-23%. 95.6% patients received chemotherapy. At completion of the treatment package, 4.6% (16pts) underwent a PT-ND, 10 patients (62.5%) were pathologically positive. Overall regional failure rate was 6.4%.

Conclusions: Following the treatment package, PT-ND rate was low and regional failure uncommon. These findings serve as a benchmark to assess the benefit of de-escalation trials, which may be offset by an increased need for PT-ND.

Verbal Presentation Abstracts (continued)

Optimising Radiotherapy to Swallowing Organs at Risk in Oropharyngeal Tumours

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Keywords: Optimisation, radiotherapy, dysphagia

Purpose/Aim: Reducing radiotherapy dose delivered to swallowing organs at risk (SWOARs), without reducing required dose to the planned tumour volume (PTV), may improve swallowing outcomes. However, as the PTV for oropharyngeal tumours overlaps many SWOARs structures, clinically meaningful dose optimisation for this population may be unachievable. In this study, differences in mean dose to the SWOARs between a standard IMRT (ST-IMRT) and a SWOARs optimised IMRT (SW-IMRT) plan were examined, as was the impact of different contouring guidelines.

Materials and Methods: The CT data from 25 patients managed with (chemo)radiotherapy for oropharyngeal tumours were used to generate the in-silico radiotherapy plans for comparison. Mean dose to the 5 SWOARs, and the V50 and V60 for pharynx and larynx were directly compared. Percent dose saved, percent overlap between PTV and SWOARs, and number of optimisation sequences to develop each plan were collected. A concordance index (CI) was used to examine differences in contour volume per SWOARs structure between 2 different contouring guidelines.

Results: Significant ($p < 0.05$) reductions in mean dose to the whole pharyngeal constrictor, supraglottis, glottis, and cricopharyngeal inlet, and V50/V60 for pharynx and larynx were achieved with the SW-IMRT plans. Mean PTV overlap with the pharyngeal constrictors was 41%, and percent dose saved was 4.81%. The CI per structure was low (0.15-0.45) between the 2 guidelines.

Conclusions: Although there was large PTV overlap with the pharyngeal constrictors, the SW-IMRT plan achieved small dose reductions to the SWOARs, as well as for the volume of the pharynx and larynx receiving 75-60Gy, which may be of clinical benefit.

Characterisation of Breath Volatile Compounds in Mucosal Squamous Cell Carcinoma

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Keywords: Breath, Volatile, Cancer

Purpose/Aim: In current clinical practice, there are no biomarkers available for screening, diagnosing or post treatment monitoring of head and neck cancer (HNC), despite being the 6th most common cancer world-wide. Human breath analysis provides a potential non-invasive and point of care method for detecting HNC.

Materials and Methods: 124 patients were recruited from two tertiary hospitals, and a standardised method was used to collect, transport and analyse breath samples. Hydrogen and methane levels were quantified by Quintron® BreathTracker®, breath $^{13}\text{CO}_2$ was measured using isotope ratio mass spectrometry and breath volatile organic compounds (VOC) were detected using selected-ion flow tube mass spectrometry (SIFT-MS, Syft®). 44 separate VOCs reported in literature were compared between patient groups and room air.

Results: Breath $^{13}\text{CO}_2$ was used to confirm fasting status. Paired room air analysis indicated that most VOCs had statistically significant differences to human breath. Hydrogen was 13% ($p < 0.05$) lower in patients with cancer. 3-methylbutanoic acid, hydrogen sulfide, butanoic acid and pentanoic acid were higher in cancer patients by 40%, 61%, 24% and 40% respectively ($p < 0.05$). Butanal and toluene were higher in current smokers, 39% and 45% respectively, while isoprene was 51% lower in current smokers ($p < 0.05$). 2-furfuryl mercaptan was 21% lower in patients with gastro-oesophageal reflux (GORD) ($p < 0.05$).

Conclusions: Human breath provides a potential non-invasive biomarker for detection of head and neck squamous cell carcinoma with multiple VOCs significantly elevated in SCC patients. On-going recruitment and planned validation studies would provide adequate statistical power for further subgroup analysis.

Verbal Presentation Abstracts (continued)

Second Hand Smoke in Patients with Head and Neck Cancer

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Purpose/Aim: Tobacco smoke is a known risk factor for the development of cancers of the head and neck. The role of second-hand smoke in patients treated for head and neck cancer remains unknown. The purpose of the present study was to evaluate the role of second-hand smoke in treated head and neck cancer patients.

Materials and Methods: Prospective longitudinal cohort study conducted at a tertiary referral teaching center. A total of one hundred thirty-five patients were enrolled. Patients filled out an exhaustive smoking and alcohol questionnaire on presentation. They completed abbreviated questionnaires at each follow-up appointment. All data were measured prospectively at routine follow-up visits which occurred every 6 months. All patients were followed for a minimum of 4 years. Primary outcome measures were recurrence, development of second primary, and overall mortality. ANOVA methods were used to for comparing of means between exposure and no-exposure groups. Cox proportional hazards modeling was employed to assess the possible relationships between second hand smoke exposure and primary outcomes.

Results: One hundred twenty-four patients completed the study, 71% (88 patients) of whom had been exposed to secondhand smoke. We observed an odds ratio 4.6 (95% CI 1.34 – 5.6) between exposure to second hand smoke and recurrence, and an odds ratio of 4.4 (95% CI 1.65 – 11.68) between second hand smoke and mortality.

Conclusions: Second hand smoke exposure is an independent predictor of recurrence and survival after head and neck cancer treatment. Smoking cessation in the home environment should be addressed with patients with head and neck cancer.

Cxcr4 And Pd-1 Expression in Head and Neck Cancer with Perineural Spread

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Keywords: Perineural, SCC, CXCR4

Purpose/Aim: Perineural spread (PNS) is a marker of aggressiveness and has been shown to occur in cranial nerves due to advanced mucosal and cutaneous head and neck cancer. Receptors CXCR4 and PD-1 have been shown to be overexpressed in a variety of cancers with PNS, with the inhibition of these pathways offering a potential future treatment. The aim of this study was to investigate whether CXCR4 and PD-1 overexpression occurs in the tumor cells of head and neck cancer patients that demonstrated PNS of cranial nerves.

Materials and Methods: Retrospective immunohistochemical staining for the CXCR4 and PD-1 receptors was performed on 28 head and neck specimens that demonstrated PNS from January to August 2017, at Royal Brisbane and Women's Hospital (RBWH), Brisbane, Australia.

Results: CXCR4 staining was positive in 52% and 60% of the SCC and ACC PNS specimens, respectively. Cutaneous SCC tumors with no PNS stained positively 33%. No significant staining for PD-1 in peri-tumoral lymphocytes or tumor specimens was seen.

Conclusions: CXCR4 is overexpressed in advanced skin cancer and head and neck tumors that demonstrated PNS to large cranial nerves. Overall, these results provide strong support for using CXCR4 as a biomarker and further investigation of immunotherapeutic agents that could inhibit tumor progression via targeting CXCR4 expression.

Verbal Presentation Abstracts (continued)

Exploring Mismatch Repair Protein Loss in Head and Neck SCC

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Purpose/Aim: The incidence of non-HPV Head and Neck Squamous Cell Carcinoma (HNSCC) in young patients (<50 years) is increasing globally. This cohorts' molecular pathways remain unexamined. Anecdotal reports describe mismatch repair (MMR) protein loss in HNSCC. This study explores the incidence and clinicopathologic features of MMR deficient HNSCC.

Materials and Methods: 461 cases underwent Immunohistochemical staining to assess the expression of MMR proteins (hMLH1, hMSH2, hMSH6, and hPMS2). This included 285 cases of non-HPV mucosal SCC (HNmSCC) and 176 cases of cutaneous HNSCC (HNcSCC) (2000-2016). A designation of Microsatellite instability-low (MSI-L) was given where one MMR protein was lost and MSI-high (MSI-H) for two or more protein loss. Data on smoking, alcohol and metachronous malignancy history was collected.

Results: There were 319 males, a mean age of 66.2 (71 young patients). MMR deficiency was seen in 32 patients (7%); 16 cutaneous (9%) and 16 mucosal (5.6%). Of these, 28 (88%) were older than 50 years at the time of diagnosis of HNSCC. HNcSCC had a higher incidence of MMR deficiency (9.1% vs 5.6%), MSI-H (7.8% vs. 2.5%) and metachronous malignancies (3.4% vs 1.5%) as compared to HNmSCC. The median overall survival was 4.38 in MSI-H patients as compared to a median overall survival of 8.98 years in the entire cohort. MMR deficient patients had poorer disease free (HR: 1.13; p=0.72) and overall survival (HR: 1.38; p=0.34).

Conclusions: MMR deficient patients demonstrated a trend of poorer OS and DFS, however this was not a significant result. HNcSCC had an increased incidence of MMR deficiency and metachronous malignancies.

Are There Inherited Genomic Predisposing Variants in Metastatic Cutaneous SCC?

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Keywords: cutaneous squamous cell carcinoma, head and neck carcinoma, single nucleotide polymorphism

Purpose/Aim: The CLPTM1L / TERT related super enhancer (66421) is located on chromosome 5p15.33. Genome-wide association studies (GWAS) have demonstrated an association between single nucleotide polymorphism (SNP) of 66421 and risk of developing basal cell carcinoma, bladder cancer, prostate cancer and lung cancer. However, there are conflicting epidemiological associations between single nucleotide polymorphisms (SNPs) of CLPTM1L / TERT complex and carcinomas of the head and neck. GWAS have shown that SNPs of 66421 confer a borderline increase in risk for oral cavity, laryngeal and hypopharyngeal squamous cell carcinoma (SCC), but a reduced risk in oropharyngeal SCC and melanoma. We sought to identify SNP in 66421 in our study group of patients with metastatic cutaneous SCC to identify potentially predisposing variants.

Materials and Methods: Whole genome sequencing (WGS) data of 20 patients with metastatic SCC was interrogated for SNP. We employed a bespoke bioinformatics platform to call variants in the haplotype. These SNPs were identified in the region of interest and compared to known rates of SNP in healthy subjects in large genomic databases.

Results: We identified three highly recurrent SNPs within the CLPTM1L / TERT super-enhancer 66421. These SNPs had an incidence in healthy individuals that would normally exclude them from consideration as pathogenic, but the comparative incidence in our study was highly significant (p=0.0002).

Conclusions: The combination of these SNPs in our study group raises the spectre of previously unknown SNPs in high risk and metastatic cutaneous SCC.

Verbal Presentation Abstracts (continued)

Head and Neck Cutaneous Squamous Cell Carcinoma Cancer Stem Cells

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Purpose/Aim: Cancer stem cells (CSCs), the putative origin of cancer, accounts for local recurrence and metastasis. This study aimed to identify and characterise CSCs within head and neck cutaneous squamous cell carcinoma (HNSCC) using markers associated with induced pluripotent stem cells (iPSCs).

Materials and Methods: 10 formalin-fixed paraffin-embedded sections of HNSCC samples underwent 3,3-diaminobenzidine (DAB) immunohistochemical (IHC) staining for iPSC markers OCT4, NANOG, SOX2, KLF4 and c-Myc. Immunofluorescence (IF) IHC staining was performed to localise the expression of these markers. Transcriptional activation of markers was determined using colourimetric in-situ hybridisation (CISH) and RT-PCR.

Results: DAB IHC staining demonstrated expression of all 5 iPSC markers within HNSCC. IF IHC staining showed co-expression of OCT4 with SOX2 and KLF4 in cells within the tumour nests (TNs) and the peritumoural stroma (PTS). The OCT4+ CSC subpopulation within the TNs expressed NANOG, and an OCT4+/NANOG- CSC subpopulation and an OCT4+/NANOG+ CSC subpopulation were present within the PTS. SOX2 and c-Myc were co-expressed throughout the TNs and the PTS. All iPSC markers were expressed by a CSC subpopulation on the endothelium of the microvessels within the PTS. CISH and RT-PCR confirmed transcriptional activation of all iPSC five markers.

Conclusions: This study demonstrated the presence of four putative CSC subpopulations within HNSCC: an OCT4+/NANOG+/SOX2+/KLF4+/c-Myc+ subpopulation within the TNs, PTS and the endothelium of the microvessels; and an OCT4+/NANOG-/SOX2+/KLF4+/c-Myc+ subpopulation within the PTS. This novel finding suggests the presence of a CSC hierarchy and highlights CSCs as a potential therapeutic target for HNSCC.

Multiplex Gene Analysis of High Risk and Metastatic Cutaneous SCC

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Keywords: SCC, skin, metastasis

Purpose/Aim: Metastatic cSCC has the highest mutational burden of any disease described. Understanding the translated effects of variants in this group of tumours offers the promise of targeting driver genes and pathways. This study describes our experience in interrogating gene expression in a cohort of high risk and metastatic cSCC.

Materials and Methods: High impact short variants and significant copy number variants were identified within our metastatic cSCC cohort by DNA whole genome sequencing. RNA from the same tumours was analysed to identify translated effects in a multigene analysis. We employed the Nanostring 770 gene cancer progression panel.

Results: From our WGS analysis, we identified high impact variants in both tumour suppressor genes and oncogenes. These genes were then targeted for differential expression using Nanostring. We found key differences between normal skin, primary tumours and metastatic tumours. Of particular note were the translated effects in extracellular matrix remodeling (including the COL gene group) and DNA repair genes. Pathway analysis identified key impacts in PI3K-Akt signaling, focal adhesion and extracellular matrix receptor interaction pathways. We have identified potential targets for knockout in gene edited organotypic cell culture models using novel cSCC cell lines developed in our laboratory.

Conclusions: Multiplex gene analysis directed by variant calls using WGS has enabled the identification of potential targetable mutations in high risk and metastatic cSCC.

Verbal Presentation Abstracts (continued)

From Basic Research to Stratification of Therapies in Head and Neck Cancer

Charbel Darido

Abstract not submitted

Oral Function for Quality of Life in Cancer Patients

Dennis Rohner

Patients suffering from extended oral cancer have to undergo combined treatments including radiotherapy, chemotherapy and surgery. The scientific outcome will be measured in 5-year survival rates, whereas for the single patient functional outcome and social rehabilitation are more important. How complex shall we treat a patient with limited chance for a decent survival time? Who decides about the treatment regimen? How important is the quality of life for the last few months in a human's life?

Screening for Molecular Dysplasia in Oral Potentially Malignant Disorders

Tami Yap

Oral swirls are a noninvasive, rapidly collected source of microRNA, potentially useful to detect oral squamous cell carcinoma (OSCC) -associated molecular aberration in individuals with oral potentially malignant disorders (OPMDs).

In this study next generation sequencing (NGS) was used to identify an OSCC-associated panel of microRNAs found to be dysregulated in both formalin-fixed paraffin embedded specimens and a fresh frozen data set from The Cancer Genome Atlas. This panel was then tested using qPCR in a total of 190 prospectively collected oral swirls from individuals with OSCC (n=53), histological normal epithelium (n=9), OPMDs (n=74) and no oral mucosal abnormalities (controls) (n=54). The impact of variation in RNA yield, demographics, habits, comorbidities, oral condition and diagnosis was assessed by comparison of microRNAs expression, a cumulative dysregulation score and a categorical algorithm-determined risk category.

Next generation sequencing (NGS) of microRNAs was successfully completed on diagnostic biopsy formalin fixed paraffin material. Upregulation of miR-31, miR-21 and downregulation of miR-99a, let-7c, miR-125b and miR-100 was found between OSCC and controls in both FFPE and fresh frozen samples. These microRNAs were studied in a training set of 15 OSCC vs 15 control oral swirls to develop a dysregulation score (AUC 0.95 (95% CI, 0.88-1.03)) and HIGH-risk identification algorithm to indicate all (15/15) OSCC and 73.3% (11/15) of controls. Utilizing the presence of HIGH risk in 54 OSCC vs 53 controls, the test was 86.8% sensitive and 81.5% specific. The HIGH risk signature was present in 23.1% of non-dysplastic leukoplakia and 46.2% of histopathological dysplasia. One case of malignant transformation within the OPMD cohort demonstrated longitudinal utility of the test.

We present the first analysis of microRNA sourced from oral swirls from individuals with and without mucosal abnormalities including OSCC and OPMDs. A HIGH-risk dysregulation signature was found to be accurate in indicating the presence of OSCC and exemplified to parallel malignant transformation. Further longitudinal studies are warranted to assess this tool as a non-invasive assessment of molecular dysplasia.

Verbal Presentation Abstracts (continued)

Oral Cavity Squamous Cell Carcinoma Survival in Australia. Time for Some Modern Data

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Introduction: Despite the falling rates of smoking in Australia, Oral cavity Squamous cell carcinoma remains a significant clinical problem and amongst the most common subsite affected in the Head and Neck. All too frequently scientific publications lament the lack of progress in survival improvement in this subsite, and the figure of 50% survival is frequently quoted. The aim of this study is to examine contemporary survival figures in a modern health system with universal access.

Methods: All cases of Oral Squamous cell carcinoma presenting to two large Head and Neck clinical services (Royal Brisbane and Women's Hospital, and COB Lifehouse,) from 2008 to 2013 were examined. Data was collected on patient demographics, tumor characteristics, treatment characteristics and survival.

Results: Five hundred and twenty-six patients were treated with curative intent in that time at the two institutions. 61% were male with a mean age of 62 years (range 18-105). The overall survival was 78%. Disease specific survival was 85%. Increasing stage of disease correlated with increasing chance of recurrence, and death due to disease.

Discussion: The survival from oral cavity squamous cell carcinoma in Australia in the modern era is excellent. This validates the treatment approach of upfront surgery, with radiotherapy and chemotherapy in appropriate cases. The oft quoted figure of 50% survival is inaccurate.

Impact of Age on Prognostic Factors for Non-HPV Mucosal HNSCC

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Purpose/Aim: Young patients (YP) develop mucosal squamous cell carcinoma (mSCC) in the context of minimal exposure to the traditional risk factors, alcohol and tobacco, compared to their older counterparts. There is an increasing trend in cancers in these YP. Our study aimed to conduct a case matched analysis of prognostic factors by age group in non-human papilloma virus (HPV) mSCC.

Materials and Methods: A retrospective review of all mSCC patients treated with surgical resection was conducted. Patients with HPV positive and oropharyngeal cancer were excluded. Cases were matched on gender, treatment, pathological T-stage and N-stage. Using a propensity scoring approach, 290 older patients (OP) were matched in a 2:1 ratio with 145 YP (age <50). Prognostic factors were assessed against disease specific survival (DSS).

Results: Matching variables were similar between the two groups, with a mean age of 42.7 in YP and 66.7 in OP. The median follow up was 40.8 months (IQR: 15.0 to 64.8). Lymphovascular invasion demonstrated the greatest difference of hazards on DSS in YP (HR: 10.56 vs 3.29), and this was a significant interaction ($P = 0.05$). YP had significantly poor DSS prognosticated by extracapsular spread (HR: 4.06 vs 2.47), tumour differentiation (HR: 3.49 vs 2.03), margin involvement (HR 3.12 vs 2.12) and lack of radiotherapy (HR: 4.05 vs 2.01), however their interactions with age (YP vs OP) did not reach statistical significance.

Conclusions: Lymphovascular invasion prognosticated a 10-fold risk of disease recurrence or death and a greater relative effect in YP. Further investigation is required for treatment protocols in this sub-group.

Verbal Presentation Abstracts (continued)

Post-Operative Radiotherapy for Intermediate-Risk Oral SCC

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Purpose/Aim: To examine the effective of post-operative radiotherapy (PORT) on the treatment outcome of intermediate-risk oral SCC.

Materials and Methods: Subjects with oral SCC who were treated with curative intent between 2008 and 2013 were included. Exclusion criteria were subjects who did not have surgery, contra-indicated to PORT, and had distant metastasis at presentation. Intermediate-risk oral SCC was defined by presence of close surgical margins, N1 nodal disease, tumour thickness ≥ 4 mm, perineural invasion (PNI), and/or lymphovascular invasions (LVI). The primary outcomes were recurrences, and overall survival.

Results: 405 subjects were included in the analysis. Over two thirds of subjects received neck dissection (69%), while 28% had PORT. The recurrence rate was 24% and overall survival was 83%. On multivariate analysis, PNI and LVI were significantly associated with increased risk of recurrences (hazard ratios 1.72 and 2.08, respectively) and decreased overall survival (hazard ratios 2.30 and 3.46, respectively). PORT was found to have significant impact in preventing disease recurrence by 50% but was not statistically associated with improved overall survival. Subjects treated with neck dissections had better outcome in both recurrence-free and overall survival (hazard ratios 0.49 and 0.47, respectively).

Conclusions: The presence of PNI and LVI adversely affects the treatment outcome for patients with otherwise low-risk oral SCC. The benefits of neck dissections were demonstrated in reducing both disease recurrence and patient mortality. While PORT appears to have a role in disease control, this does not translate to overall survival. Decision for PORT in this group of patients needs to be approached with caution.

Survivorship in Surgery: Post-Treatment Swallowing Outcomes in Glossectomy

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Keywords: dysphagia, glossectomy, survivorship

Purpose/Aim: Dysphagia can contribute to the survivorship burden for patients with H&N cancer. However, to date little systematic research has been conducted on the nature of swallowing deficits experienced by surgical patients. The aim of this study was to examine the nature and severity of swallowing outcomes in a cohort of glossectomy patients at both acute and subacute stages.

Materials and Methods: Outcomes were collected prospectively for 36 glossectomy patients (excluding mandible involvement) at: baseline; 3-4 days, 2 weeks and 1-month post-surgery; and 6 months post-treatment. Swallowing measures included: Functional Oral Intake Scale (FOIS), SWAL-QOL2, Performance Status Scale Eating in Public (PSS), and swallowing strategies. Admission characteristics, presence of tracheostomy and post-op complications were recorded.

Results: FOIS and PSS scores significantly improved from 1 to 6 months in the whole cohort ($p < 0.05$), with 32% experiencing dysphagia at 6 months (below baseline levels) and 40% with eating in public restrictions (above baseline levels). Additionally, 29% ate more slowly and 60% used swallowing strategies at 6 months. Majority of swallowing-related outcomes were comparable at 1 and 6 months in the primary closure vs free flap groups, and surgery only vs adjuvant groups.

Conclusions: Dysphagia is an early consequence for most H&N patients and remains a long-term deficit for a third of this cohort. All 6-month outcomes were comparable across reconstruction and treatment groups, with a large proportion of patients continuing to experience swallow-related deficits. This data on functional swallowing outcomes and patient related swallowing burden can be used to assist service delivery, patient education and management.

Verbal Presentation Abstracts (continued)

Oral Functioning After Maxillectomy in Patients with Obturator or Reconstruction

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Keywords: Surgical design and simulation, 3D planning, free vascularized fibula flaps

Purpose/Aim: The purpose of this study is to compare masticatory performance, maximum mouth opening, maximum bite force and Health-Related Quality of Life in patients after maxillectomy, reconstructed using the Rohner or the Alberta Reconstructive Technique with patients rehabilitated by an obturator.

Materials and Methods: Masticatory performance, maximum bite force, maximum mouth opening, dental state, and the outcome of the EORTC-H&N35 questionnaire were assessed.

Results: Patients reconstructed by the Rohner or the Alberta Reconstructive Technique (n=11) a significant better masticatory performance, bite force, and dental state than patients with an obturator (n=13). Also, the overall mean EORTC H&N35-score was significantly better in patients reconstructed by the Rohner or the Alberta Reconstructive Technique especially in the EORTC H&N35 domains sexuality, feeding tube, and weight loss.

The study groups only differed also in age, neck dissection and surgical time, although the latter two are causative to one another and partially dictated by the reconstructive approach.

No significant differences were found between the Rohner and the Alberta Reconstructive Technique.

Conclusions: Maxillary reconstruction can be beneficial over prosthetic rehabilitation in terms of masticatory performance and overall quality of life.

The Anaplastology Perspective: Clinical & Surgical Considerations in Head & Neck Reconstruction & Facial Prosthetic Rehabilitation

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People living with a facial difference are presented with day-to-day physical, psychological and social challenges that are unknown to the person with an otherwise "normal" appearance. In an ideal world any facial defect could be restored surgically to its original form and function. Surgical interventions offer the possibility of reconstructing form and physiological function; however, the surgeon is limited by the biological conditions presented by the individual patient. While reconstructive surgery is the preferred first choice, surgical reconstruction of the facial anatomy is not always possible. In circumstances where surgical reconstructive options have been exhausted, facial prosthetic rehabilitation offers the patient a real and viable option for restored facial anatomy and function. Equally important, facial prosthetic rehabilitation provides the opportunity for improved quality of life and the ability to return to normal daily living activities. Facial prostheses offer hope to a population of individuals who live with the loss of a facial feature due to congenital conditions, disease or trauma.

Successful prosthetic rehabilitation relies upon appropriate, reliable and carefully-planned surgical and prosthetic treatment. This is only possible when the restorative and rehabilitative specialists in anaplastology work closely, collaboratively and cohesively with the surgical reconstructive team. The essential nature of this collaborative approach to patient care is often not well appreciated by clinical professionals and the general public alike.

Case presentations and technical protocols from a patient-driven, multidisciplinary approach to care will be presented. Important aspects of rehabilitative care including patient/family education and expectations; coordinated care & surgical planning; reconstructive options and psychological considerations; wound care, tissue management and lifetime maintenance; 3D printing and augmentive technologies will be demonstrated in patient case example representing global best practices and state-of-the-art facial reconstructive care.

Verbal Presentation Abstracts (continued)

Patient Perception of Outcomes After Treatment of Oral Cancer

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Keywords: survivorship, oral cancer, distress

Purpose/Aim: This project aimed to: better understand the functional, appearance and psychosocial impact of oral cancer treatment and evaluate the feasibility of integrating patient-reported outcome measures into standard care to help optimise outcomes.

Materials and Methods: A cross-sectional mixed-methods study recruited adults who had undergone surgery at two Melbourne hospitals. Eligible participants were recruited immediately, 1, 2 or 5 years after surgery. Participants completed questionnaires from the Memorial Sloane-Kettering FACE-Q Head and Neck Cancer™ suite: Cancer Worry, Drooling Distress, Eating Distress, Appearance, Appearance Distress, Smiling Distress and Speaking Distress. Open-ended questions explored the impact of treatment on employment and other potential methods of supporting patients post-treatment.

Results: From December 2017 to March 2018, more than 2000 patients were screened to identify 126 eligible patients, 116 of whom consented (consent rate ~ 92%). A further 50 patients will be recruited by study closure. To date, missing forms and items have been negligible. FACE-Q scores will be summarised using summary statistics (mean, sd, range) and compared between groups based on time since surgery using analysis of variance. Effect size estimates will be used to characterize the size of observed differences; in all calculations, participants immediately after surgery will be used as the reference.

Conclusions: Results will provide a comprehensive description of the impacts of oral cancer treatment at the stipulated times post-treatment. The appropriateness of using the FACE Q HEAD & NECK Scales in standard clinical follow-up will be discussed including supportive care interventions and referrals generated along with resource allocation at two major hospitals in Melbourne.

Reactive Feeding Tube Use in Head and Neck Cancer

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Keywords: Reactive feeding, head and neck cancer, weight loss

Purpose/Aim: Nutritional depletion and weight loss during treatment for head and neck cancer continues to be a major issue. Feeding tubes are frequently required, however controversy remains over when to insert them. We aimed to investigate the use of reactive feeding tubes (RFTs) within our Cancer Centre and the impact, if any, on weight loss and cancer specific survival (CSS).

Materials and Methods: A retrospective review was conducted on all newly diagnosed adult head and neck cancer patients treated with radiotherapy (RT) ± chemotherapy at the Prince of Wales Hospital from 2005-2017. Use of feeding tubes, weight loss and CSS relating to tube type were investigated.

Results: A cohort of 462 patients were analysed: oropharynx (40%), larynx (29%), oral cavity (15%), nasopharynx (11%), hypopharynx (5%). Ninety-one RFTs were used during treatment, the majority inserted in patients with oropharynx cancer (55%). Those with RFTs lost significantly more weight during RT than the rest of the cohort (mean loss 8.6%, $p < 0.001$), and this continued up to 3 months post-RT. A higher proportion of patients with RFTs experienced critical weight loss ≥5% ($n=80$, 88%, $p < 0.001$). Patients with larynx or nasopharynx cancer who required a RFT, had worse CSS than the rest of the cohort within each tumour group ($p=0.009$ and $p=0.022$ respectively).

Conclusions: RFTs are usually inserted in response to clinically significant weight loss as a result of treatment toxicities. This weight loss and reduced survival associated with RFTs is of concern and warrants further evaluation of current practice.

Verbal Presentation Abstracts (continued)

Eras Care Pathway or Major Head and Neck Cancer Patients

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Keywords: ERAS, HNC

Purpose/Aim: Surgical head and neck cancer (HNC) often requires complex, labour-intensive surgery, especially when free flap reconstruction is required. Recommendations for improved peri-operative care for HNC patients have been adopted by the Enhanced Recovery After Surgery (ERAS) Society. Our aim was to audit peri-operative management of patients undergoing major HNC surgery; against the streamlined perioperative care pathway adopted by ERAS Society

Materials and Methods: We retrospectively reviewed consecutive patients undergoing major HNC surgery at our institution over a 12-month period. We measured 61 variables including patient demographics, types of surgical procedures including free flap reconstruction, length of stay and acute complications.

Results: There were 59 major HNC operations including 18 free flap reconstructions, in 56 patients. Neck dissection was the most common procedure. SCC was the most common primary pathology. HNC patients had some difficulty accessing education material for their specific operations. 47% of patients received a second dose of intra-operative antibiotic within the recommended time frame. Majority of our patients mobilised and had their in-dwelling catheter removed within 24 hours of surgery. All patients received calf-stimulators intra-operatively and 50% did not receive post-operative enoxaparin. There were 21 surgical complications (37%) with haematoma being the most common complication. Allied health referrals were informal

Conclusions: Our audit identified a number of areas where management can potentially be improved. As a result, we have revised peri-operative anaesthetic and surgical protocols and developed formal allied health referral criteria. We aim to develop a pilot ERAS protocol for major HNC surgery based on our findings and currently published evidence.

A Private Allied Health Hn Service: Opportunities, Challenges, Outcomes

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Purpose/Aim: In 2015, Epworth HealthCare established a head and neck service.

This paper aims to discuss our experience with establishing a service in a private hospital setting. Our clinical cohort will be outlined, and functional outcomes of our largest subgroup described.

Materials and Methods: Descriptive (clinical and service) data was extracted retrospectively from local databases from August 2015 – February 2018, including outcome measures collected prospectively during clinical care.

Results: 434 operations were performed, with 101 patients referred to SP / DT during their acute admission. 23 were post Transoral Robotic Surgery (TORS) for oropharyngeal cancer (18 primary, 5 salvage).

Of the primary TORS cases, 100% commenced oral diet during their acute stay, scoring a FOIS of 5 or above on discharge. 100% scored 75 and above on the PSS-HN Understandability of Speech scale. 83% had NGT placement, but only 53% of these were used for feeding. Median duration of tube use was 1 day (IQR 0-6.5).

19 TORS patients were referred to our outpatient service. Mean length of service was 12 weeks (average 15.42 sessions across all disciplines). On discharge, improvements were seen in swallow, speech and nutritional measures, at or nearing pre-operative status.

Outcomes were generally poorer for salvage cases, with greater tube feeding and worse speech / swallow scores.

Opportunities / challenges include private health funding, no defined patient catchment areas and data collection.

Conclusions: Our early learning suggests a successful multidisciplinary head and neck service in a private setting is feasible and functional outcomes comparable with current evidence.

Verbal Presentation Abstracts (continued)

Pathways to Treatment of Oropharynx, Oral Cavity and Cutaneous SCC

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Keywords: Diagnosis; epidemiology

Purpose/Aim: Early cancer diagnosis is a critical component of comprehensive cancer control, however more than 50% of head and neck cancers (HNCs) are diagnosed at advanced stage. HNC patients from regional/remote areas have poorer survival than metropolitan patients. The study aim was to examine pathways to treatment for patients with HNC in NSW, and associations between duration of components of the pathway with survival.

Materials and Methods: Patients diagnosed with squamous cell carcinoma (SCC) of the oral cavity or oropharynx, or cutaneous SCC from 1st July 2008 to 30th June 2013 were identified from a prospectively maintained database. Data were extracted and supplemented by a retrospective audit of hospital and specialists' medical records.

Results: Two hundred and fifty eligible patients were identified (78% male) with mean (SD) age 64.5 (13.5) years. At diagnosis, 75%, 24% and 1% lived in metropolitan, regional and remote NSW, respectively. Twelve per cent of patients lived >100km from a hospital with a HNC multidisciplinary team (median [IQR] 7.5 [25.1] km). More than two-thirds (69%) of tumours were diagnosed as advanced stage, and mean follow-up time was 3.5 years. We will present findings quantifying intervals along the pathway to treatment (from symptom onset, first specialist visit, diagnosis and treatment), and associations with survival, comparing findings to those from a second site on the Mid North Coast of NSW.

Conclusions: An increasing proportion of the NSW population resides outside major cities. This study is the first step in understanding patient and health system factors that facilitate and impede early diagnosis of HNC.

Quality Indicators in Head and Neck Cancers

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Keywords: Quality indicators, Survival, Audit

Purpose/Aim: There is a lack of readily available data on quality of care and outcomes for patients with head and neck cancer. Previous studies have identified an association between high-quality cancer care and improved survival (Gourine et al, 2014, Peter et al, 2010). Additionally, there is evidence suggesting that centres with high caseloads have better clinical outcomes (Cheung et al, 2009). To evaluate the quality of care and its influence on outcomes at our regional centre we performed a retrospective audit.

Materials and Methods: We assessed quality of care with respect to previously validated quality indicators for pre-treatment work-up, treatment and follow-up care. Additionally, we performed time to event analysis for loco-regional control and overall survival.

Results: 273 patients with head and neck squamous cell carcinoma were treated radically between June 2011 to June 2015. Over 95% of patients met pre-treatment quality indicators for staging, biopsy, MDT presentation, dietician and speech pathology review, but just under 80% of patients had documented evidence of dental assessment. 90% of patients had adequate surgical margins but less than half received timely post-operative radiation therapy. 92% of patients received appropriate IMRT. Post-treatment, 93% of patients had adequate follow-up, but very few received appropriate thyroid function assessment. 3-year overall survival for the entire cohort was 79.7% (95% CI 0.743-0.842).

Conclusions: This analysis demonstrates good outcomes with respect to overall survival despite some quality indicators which require improvement in our cancer facility. Further evaluation with regards to loco-regional control and patterns of failure will be conducted to identify areas for quality improvement.

Verbal Presentation Abstracts (continued)

Advanced Dietetics Practice – Maximizing Dietitian Function, Optimizing Patient Outcomes

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Keywords: Dietitian, Gastrostomy, Allied Health

Purpose/Aim: Optimising nutrition support for patients with head and neck (HN) cancer is essential, with many reliant on enteral tube nutrition at some point in their cancer journey.

Materials and Methods: To address identified gaps in care for HN patients utilising a gastrostomy tube (G-tube) for long term feeding, an advanced practice credentialing program in G-tube management for HN Dietitians at St Vincent's Hospital Melbourne (SVHM) was developed.

Results: Since December 2015, three Dietitians have been credentialed. Advanced practice Dietitians now independently change and remove G-tubes and provide stoma site care, procedures historically undertaken by other professions. Of the 42 G-tube changes completed, 22 of those (52%) were for patients from the HN unit. A Dietitian-led "Gastrostomy Consult" service has resulted in 90 service events, of which 59 (66%) were for patients from the HN unit. This work was traditionally performed by medical staff. There have been 13 diversions from the emergency department, 29 diversions from endoscopy, and 113 diversions from Gastroenterology unit review. Patient related outcomes include reduced wait times to care (from 2 months to 1-2 days), reduction in unnecessary appointments and decreased travel time. Importantly there have been zero adverse events.

Conclusions: Further opportunities to maximise skills of SVHM Dietitians and optimise outcomes for HN cancer patients have been identified in the co-located Genesis Radiation Oncology service, with work commencing to develop a credentialing program for Dietitians to perform nasogastric tube insertions.

Developing a Biopsychosocial Approach to Dysphagia Care

Jo Patterson

Head and neck cancer squamous cell carcinoma (HNSSC) patients report substantial rates of clinically significant depression and/or anxiety, with dysphagia being a predictor of distress and poorer quality of life. Evidence-based dysphagia interventions largely focus on the remediation of physical impairment. This feasibility study evaluates an intervention which simultaneously uses a psychological therapy approach combined with swallowing impairment rehabilitation.

Patients and methods: This prospective single cohort mixed-methods study, recruited HNSSC patients with dysphagia, from two institutions. The intervention combined Cognitive Behavioural Therapy with swallowing therapy (CB-EST), was individually tailored, for up to 10 sessions and delivered by a speech and language therapist. Primary acceptability and feasibility measures included recruitment and retention rates, data completion, intervention fidelity and the responsiveness of candidate outcome measures. Measures included a swallowing questionnaire (MDADI), EORTC-QLQ-H&N35, dietary restrictions scale, fatigue and function scales and the Hospital Anxiety and Depression Scale (HADS), administered pre-, post-CB-EST with three-month follow-up and analysed using repeated measures ANOVA. Qualitative interviews were conducted to evaluate intervention processes.

Results: A total of 30/43 (70%) eligible patients agreed to participate and 25 completed the intervention. 84% were male, mean age 59yrs. Patients were between 1-60 months (median 4) post-cancer treatment. All patients had advanced stage disease, treated with surgery and radiotherapy (38%) or primary chemoradiotherapy (62%). Pre to post CB-EST data showed improvements in MDADI scores ($p=0.002$), EORTC-QLQ-H&N35 ($p=0.006$), dietary scale ($p<0.0001$), fatigue ($p=0.002$) but no change in function scales or HADS. Barriers to recruitment were the ability to attend regular appointments and patient suitability or openness to a psychological-based intervention.

Conclusions: CB-EST is a complex and novel intervention, addressing the emotional, behavioural and cognitive components of dysphagia alongside physical impairment. Preliminary results are promising. Further research is required to evaluate efficacy and effectiveness.

Verbal Presentation Abstracts (continued)

Dysgeusia Prevalence and Impact During-Post Head and Neck Cancer Treatment

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Keywords: Dysgeusia, taste, diet

Purpose/Aim: Dysgeusia is a common deficit during and post head and neck cancer (HNC) management. Systematic, longitudinal studies of taste changes and its impacts are limited. Study aims: (primary) examine physiological taste intensity/recognition, patient self-ratings of taste deficits, and impact of taste on eating during and post HNC management; (secondary) investigate relationships between taste change, oral intake and weight.

Materials and Methods: Eighteen HNC patients undergoing chemo/radiation therapy assessed at baseline, treatment weeks 2/4, and post-treatment 1/3/6 months, using: 1) whole mouth liquid taste test (salt/sweet/sour/bitter) recognition/intensity, 2) Chemotherapy-Induced Taste Alteration Scale (CITAS) subscales: 'Decline in Basic Taste', 'General Taste Alterations', 3) Head and Neck Patient Symptom Checklist (HNSC) questions: "How often do you have taste issues?", "Has taste impacted eating?", 4) Performance Status Scale for Head and Neck Cancer: 'Normalcy of Diet,' 5) % of total intake, and 6) weight change.

Results: Taste recognition and intensity were impaired by week 2, with most severe deficits by week 4. By 6 months, there was some resolution, though deficits persisted. Patient perceptions (CITAS, HNSC) correlated highly with objective measures. Perceived taste deficits interfered with eating at treatment week 4 without full recovery by 6 months post-treatment. Decreased percent of oral intake and normalcy of diet correlated with weight loss.

Conclusions: Taste alterations impacts were greatest during treatment with persistent long-term deficits. Taste changes impacted oral intake and co-occurred with altered normalcy of diet during and post-treatment. This study highlights the need to monitor and manage taste issues to optimize oral intake and lessen weight loss during and post-treatment.

Chronic Lymphoedema Following Head and Neck Cancer Management

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Keywords: head and neck lymphoedema

Purpose/Aim: Lymphoedema is a recognised side effect of head and neck cancer (HNC) treatment; however, current data on its nature and prevalence is limited and varies by assessments used. The aim of this study was to examine the prevalence and severity of external lymphoedema (EL) and internal lymphoedema (IL) in a prospective cohort and explore its relationship with treatment modality.

Materials and Methods: Forty-five patients (84% male; 71% oropharynx tumours) presenting at 1-3 years post chemoradiotherapy (n=32) or postoperative radiotherapy (n=13) were prospectively recruited. EL prevalence and severity was assessed with the ALOHA system, and IL was assessed via trans-nasal endoscopy and rated using Patterson's Scale.

Results: In the total cohort, combined EL and IL was observed in 37.7% of patients, 57.8% had IL only, and 2.2% had EL only. IL was moderate-to-severe in 69.7% of patients, and 18.7% had moderate-to-severe EL. Analysis by treatment modality revealed that patients who were treated with postoperative radiotherapy were significantly more likely to experience EL than those treated with chemoradiotherapy (p=.01). However, there were no statistically significant differences in IL outcomes (p>.05); with comparable prevalence and severity rates between the two treatment groups.

Conclusions: Findings demonstrate that rates of chronic EL and IL are high following HNC management. Patients treated with postoperative radiotherapy were more likely to experience chronic EL than chemoradiotherapy patients. However, there was no significant differences in IL rates. Further longitudinal research is required to determine the trajectory of EL and IL post treatment and examine its pattern of progression and/or recovery.

Verbal Presentation Abstracts (continued)

Physician and Patient-Reported Outcomes in Imrt-Treated Nasopharyngeal Carcinoma

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Keywords: Nasopharynx, survivorship, toxicity

Purpose/Aim: To report toxicity, quality of life (QOL) and emotional distress in nasopharyngeal carcinoma (NPC) survivors treated with intensity-modulated radiotherapy (IMRT).

Materials and Methods: A cohort study enrolled NPC patients disease-free ≥ 4 years post-IMRT \pm chemotherapy. Study instruments included: physician-reported adverse events (AE, CTCAE v4.03), patient-reported QOL (FACT-H&N), fatigue (FACIT-F), utilities (EuroQOL-5D), head and neck symptoms (MDASI-HN) and emotional distress (HADS). Consenting patients underwent endocrine screening and audiometry.

Results: Among 107 enrolled patients: 69(64%) were male; median age and time since treatment were 57y(32-81) and 7.5y(4.2-11.1), respectively. Most received 70Gy/35# (99%) and concurrent CT (93%). Grade 3 or higher AEs were recorded in 50(47%), most commonly hearing (46, 43%). Only 4(4%) recorded grade 4 AEs. Three (3%) required late feeding tube insertion. Eighteen (17%) had ≥ 1 cranial neuropathy. Temporal lobe necrosis was identified in 23(21%). Mean FACT-H&N, FACIT-F, and EQ-5D mean index scores were 105.0(46-148), 116.6(44-160), and 0.85(0.29-1.00) respectively. Highest scoring MDASI-HN items were dry mouth, mucus, swallowing/chewing, memory and teeth/gum problems. Sixteen (16%) and 28(28%) patients reported at least moderate pain and fatigue, respectively. Factors significantly associated with QOL: (1) social – marital, employment and living status; (2) treatment - time since IMRT and chemotherapy use; (3) physician reported events – dysphagia, trismus, dysarthria, aspiration and cranial neuropathies; and (4) MDASI-HN inventory – all items. Depression (25%) and anxiety (37%) were common and correlated with QOL ($r > 0.5$, $p < 0.001$). Audiometry revealed significant hearing loss in 68 patients (72%). Hypothyroidism developed in the majority (69%). One patient (1%) developed pituitary dysfunction.

Conclusions: IMRT-treated NPC survivors experience ongoing physical and emotional symptoms, which are

associated with lower QOL many years after concurrent chemo-radiotherapy.

Naso-Gastric Tube Feeding During (Chemo) Radiotherapy: Patient Compliance and Perceived Barriers

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Peter MacCallum Cancer Centre, Nutrition, Melbourne, Victoria, Australia

Purpose/Aim: Peter MacCallum Cancer Centre treats approximately 400 patients with head and neck cancer (HNC) yearly with treatment often resulting in poor nutritional outcomes. Naso-gastric tube (NGT) feeding is frequently indicated but often delayed, increasing risk of admissions and poor outcomes. It is hypothesised that delayed NGT insertion is predominantly due to patient refusal, and reasons for this are likely known social risk factors. This study will provide guidance of future strategies to combat this often-overlooked barrier to nutritional optimisation.

Materials and Methods: A 6-month retrospective data collection ($n=44$) was completed of curative HNC (chemo)radiotherapy patients. Patients were grouped by presence and timeliness of NGT insertion; 1) Timely insertion ($< 5\%$ weight loss), 2) Delayed insertion ($\geq 5\%$ weight loss), 3) Nil insertion despite $\geq 5\%$ weight loss. Groups were analysed by staff support, social factors and nutritional status. A qualitative interview investigated patient-perceived attitudes and reasons for delayed/nil insertion.

Results: There was no statistical significance in social factors investigated. Of patients with nil ($n=12$) or delayed NGT insertion ($n=19$), refusal was 67% and 37% respectively. Qualitative analysis identified the predominant reason for refusal was perceived noticeable appearance or discomfort. Patients with delayed insertion acknowledged perceived effects were worse than reality. A favourable strategy to improve compliance included access to peers with positive NGT experiences.

Conclusions: Quantitative data revealed no characteristics for refusal. Qualitatively, refusal was based on perceived discomfort/appearance. Support from patients with NGT experience cited a possible strategy for promotion of timely insertion therefore, future interventions lean towards peer support to assist improving compliance and outcomes.

Verbal Presentation Abstracts (continued)

Surgical Assessment and Management of Perineural Invasion at the Skull Base

TBC

Abstract not submitted

Perineural Spread and the Base of Skull- A Radiologist's Perspective

Karda Cavanagh

The base of skull is a region of complex anatomy often examined via cross sectional imaging in the diagnosis and workup of head and neck cancer. Perineural spread is an adverse prognostic feature, decreasing overall survival. Sometimes it is the only region of metastatic disease, and appropriate treatment options are essential in the presence of perineural spread. This presentation will review key elements of anatomy and the imaging of perineural spread via CT and MR.

Skull Base Reconstruction

Damien Grinsell

Abstract not submitted

Endoscopic Surgery for Malignancy: When Minimal Access Doesn't Imply Limited Surgery

Richard Harvey

Abstract not submitted

Predicting Survival in Head & Neck Cancers

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Keywords: calculator, prediction, head and neck cancer

Background: Accurate prediction of prognosis is an essential step for planning treatment and a valuable tool for researchers. A comprehensive predictive tool for head and neck cancer outcomes has yet to be developed.

Methods: Data were obtained from the Survey, Epidemiology, and End-Results (SEER) 2009 dataset provided by the National Cancer Institute of the US National Institute of Health. Survival data were fit to a mathematical framework, the binary-biological model, developed previously by our laboratory. The resulting model was verified on a sample of 50145 patients with head and neck cancer from the SEER dataset, as well as on a 1300 patient cohort treated at Massachusetts General Hospital/Massachusetts Eye and Ear Infirmary.

Results: The risk of death increases monotonically with tumor size and is well captured by the SizeOnly equation. Each positive lymph node up to 5 is associated with ~14% extra risk of death, as calculated by the Size+Nodes method. Tumor site, age at diagnosis, and race, but not gender, were also found to make significant contributions to lethality. SEER does not provide information on HPV status, but its impact is probably latent in the parameters for site and age; the binary-biological mathematics is capable of exploring this issue explicitly, once an HPV status/size/survival dataset becomes available. Our model provides accurate estimates of head and neck cancer mortality risk, as validated by both the SEER and MGH datasets, and provides the basis for a web-based calculator (www.lifemath.net/cancer/headneck/outcome).

Conclusions: The binary-biological model provides a basis for a web calculator that accurately estimates the survival expectation for each patient. It also provides a framework for quantifying the prognostic factors that contribute to head and neck cancer lethality, both the prognosticators that are currently recognized and those that we will identify in the coming years.

Verbal Presentation Abstracts (continued)

Predicting Toxicity from Systemic Therapy in Elderly Patients

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Systemic therapy is a central part of cancer management both in the curative and palliative setting. It now comprises cytotoxic chemotherapy, signal transduction inhibition (STI, aka "targeted therapy") and immunotherapy. Over the last 20 years it has become apparent that older patients can achieve the same benefits from systemic therapy as their younger counterparts.

However, it has also become clear that the substantive heterogeneity of the older human must be considered: the fit patient may get the same benefit with no more toxicity than the younger, but the frail older patient is likely to suffer excessive toxicity and thus gain no benefit. It is also clear that toxicity in older patients is more complex: classical predictive variables such as performance status still matter, but factors frequently used in geriatric assessment such as instrumental activities of daily living also provide powerful prognostic information.

Chemotherapy toxicity prediction has been based on geriatric assessment applied to oncology. It has moved from simple schemes such as Balducci's classification into fit, vulnerable, frail to the use of validated multidimensional tools such as CRASH and CARG (mycarg.org) that are available on the Web. These tools can give a numerical prediction of toxicity by integrating key aspects of geriatric assessment in a manner that is readily and swiftly usable at the bedside and is more accurate than clinical evaluation alone.

It unclear how well the more specific models will perform in predicting toxicity from signal transduction inhibition or immunotherapy. Studies are underway to evaluate the accuracy of current models with these newer therapies. On first principles it is still likely that the broader qualitative models will be relevant with transduction inhibitors, but there are some reasons to suspect immunotherapy might play out differently.

Treatment for Elderly Patients with HN Cancer

Jolie Ringash

Cancer is a disease of aging. With improved management of chronic medical illness, we are seeing an increasing proportion of our HNC patients who are in their 70s, 80s or even 90s. What do we know about their tolerance for treatment? What can or should we do differently faced with an elderly patient who may have a curable cancer, but would conventionally require very toxic treatment? I will review clinically practical strategies for patient risk evaluation, counselling, decision-making and ongoing care.

Poster Presentation Abstracts (listed in alphabetical order according to Presenter's surname)

Digitized Evaluation of Facial Appearance and Asymmetry of Segmental Mandibulectomy

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Keywords: digital evaluation, mandibular prostheses, facial asymmetry

Purpose/Aim: Mandibulectomy defects usually cause dysfunctions and facial deformities associated with hard tissue loss and soft tissue recession. Conventional prosthetic rehabilitation can restore mandibulectomy defect area and improve facial deformity. In recent years, with the development of optical scanning technology, three-dimensional (3D) facial scanners can be used in dental clinic. This study aimed to evaluate the effect of the mandibular prostheses on the facial appearance and the facial asymmetry in reconstructed segmental mandibulectomy patient using digital technique

Materials and Methods: A total of 10 reconstructed segmental mandibulectomy patients that rehabilitated by conventional prostheses were participated in this study. Facial scans with and without prostheses were performed for all participants using a noncontact 3D digitizer. The 3D facial data were imported into 3D modeling software to produce the mirrored data for facial asymmetry evaluation. The acquired data with and without prostheses were aligned and the facial appearance were geometrically evaluated using 3D evaluation software. The original and mirrored data were also aligned with respect to the surface features to calculate the prostheses effect on facial asymmetry. Statistical analyses were applied ($P < 0.05$)

Results: The facial appearance in the defect area was improved with the prosthesis in all participants. The median value of the absolute 3D deviation of the facial scans of with and without prostheses was (302.8 μm). There were significant differences in asymmetry in reconstructed segmental mandibulectomy patients between the with and without mandibular prosthesis ($P = 0.047$).

Conclusions: This study approved the effectiveness of mandibular prostheses on facial appearance and asymmetry of reconstructed segmental mandibulectomy patient.

Effect of Reinforcements on Fracture Prevention after Extensive Marginal Mandibulectomy

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Keywords: marginal mandibulectomy, three-dimensional finite element analysis, plate reinforcement

Purpose/Aim: The aim of this study was to investigate the effect of reinforcements on fracture prevention of two reconstruction plate designs after extensive marginal mandibulectomy by using a three-dimensional finite element analysis.

Materials and Methods: The basic solid model of mandible was built from computed tomography image and was imported into ABAQUS 6.13-2 software (Dassault Systèmes, USA). Cancellous bone and screw parts were meshed with ten-node tetrahedral elements; cortical bone and plate parts were meshed with three-node triangular shell elements. Total number of nodes was about 73000 and element was about 80000.

The defect of the mandible was designed over left molar region with 48 mm of anterior-posterior distance and different height of residual ridge (5mm to 20mm). Two plate designs, a traditionally continuous reconstruction plate and two separated mini-plates, were tested to compare the effect of reinforcement on fracture prevention. Thresholds of 3000 ?? in tension and 4000 ?? in compression were used to evaluate the fracture risk of the resected mandible.

Results: Either continuous reconstruction plate or two separated mini-plates did reinforce the mandible and decreased the maximum tensile and compressive strain. However, it failed to reach the threshold of fracture prevention when the residual bone height was under 15 mm.

Conclusions: With current results, further studies to evaluate other factors such as plate positions or shapes on the efficacy of reinforcement of mandible after extensive marginal mandibulectomy are necessary. This study was supported by National Taiwan University Hospital (NTUH-106-S3485)

Poster Presentation Abstracts (continued)

Minimizing Forearm Donor Site Morbidity with Negative Pressure Wound Therapy

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Keywords: Cancer, reconstruction, woundcare

Purpose/Aim: This study aimed to determine subjective and objective hand and wrist function following radial forearm free flap (RFFF) with skin graft reconstruction for head and neck cancer healed with negative pressure wound therapy (NPWT) compared to static pressure dressings (SPD).

Materials and Methods: Single-center; single-blinded, randomized control trial examining the effect of NPWT on donor site morbidity in RFFF for head and neck cancer reconstruction. NPWT involved a single-use, portable device capable of applying 80mmHg of negative pressure to the forearm donor site. Univariate and multivariate comparisons of means were utilized to determine differences between study groups.

Results: Twenty-four patients undergoing RFFF were randomized to receive NPWT or SPD. Range of motion, strength, wound complications, and rates of graft failure were similar between groups. Patients treated with NPWT had improved self-reported functional scores on the Michigan Hand Outcomes Questionnaire as compared to those treated with SPD at 7 days post-operatively (P=0.039). No differences were seen at subsequent follow up visits.

Conclusions: In the immediate post-operative period, negative pressure wound therapy was associated with improved patient reported functional outcomes including hand and wrist function. Wound care to optimize hand and wrist function could allow for improved patient outcomes in the immediate post-operative period. This may allow for improved patient self-care and may help to facilitate discharge in this complex patient population.

Chemotherapy... The Overlooked Treatment in Head and Neck Cancer

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Keywords: Nutrition outcomes, chemotherapy, radiotherapy

Purpose/Aim: Common treatment for patients with oropharyngeal cancer is concurrent chemoradiotherapy. Systemic therapies that are used in combination with radiotherapy include cisplatin, cetuximab and carboplatin. This study aimed to explore the relationship between different systemic therapies and nutrition outcomes in patients with oropharyngeal cancer.

Materials and Methods: A retrospective audit of patients with oropharyngeal cancer undergoing (chemo)radiotherapy was completed over a 6-month period. Patients were divided into subgroups based on systemic therapy dose and regimen. Nutritional outcomes including weight loss during treatment, 4 weeks post treatment and hospital admissions were analysed.

Results: Forty-eight participants with oropharyngeal cancer were included, median (IQR) age 58.5 (52-68) years and 85% (n=48) male. Systemic therapies included weekly cisplatin (CP, 25%), high dose cisplatin delivered in weeks 1, 4 and 7 (HDCP, 42%), weekly carboplatin (CB, 21%) and weekly cetuximab (CT, 12%). Weight change by systemic therapy regime revealed those receiving CP had the largest weight loss (mean (SD) at both time points, during treatment (10.07 (4.36)%) and at 4 weeks post-treatment (10.36 (5.04)%). Conversely, patients receiving CT lost the least amount of weight (mean (SD) both during treatment (3.66 (1.78)%) and at 4 weeks post-treatment (5.90 (3.32)%).

Fifty-two percent of participants (n =48) required inpatient admission during treatment. Forty-four percent (n=25) of patients admitted received HDCP and 31% (n=25) received CP.

Conclusions: This study showed a trend towards greater decline in nutritional outcomes for patients receiving cisplatin-based treatment, compared to others. Further research is needed.

Poster Presentation Abstracts (continued)

Interactive Visualization of 3D Maxillofacial Prosthetic Data into PDF publications

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International Journal of Maxillofacial Prosthetics, Editor-In-Chief, Tokyo, Tokyo, Japan

Case Presentation: Representing three-dimensional (3D) structures of maxillofacial prosthetic within a single two-dimensional (2D) document offers great opportunities for the readers of scientific publications to interactively visualize 3D data with more in deep perception. Portable document format (PDF) has the capability to fulfil this approach specially that PDF is a common file format for publishing articles. This presentation briefly reviews the application of PDF in the visualization of 3D data within scientific publications. It also introduces an effective interactive visualization approach by embedding 3D data into PDF file for journal publication and discuss its impact on maxillofacial prosthetic publications. As a conclusion, it has proved that PDF is beyond an electronic document for exchanging and viewing the static 2D publications. It is an electronic document that can be illustrated for embedding 3D interactive maxillofacial prosthetic data which can be viewed and manipulated by the reader without the need of dedicated visualization software.

Airway Management in Cervical Necrotizing fasciitis – A Case Series

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Keywords: airway management, tracheostomy, necrotising fasciitis

Case Presentation: Purpose: Cervical necrotizing fasciitis (CNF), is a severe infection with high morbidity and mortality. It requires urgent surgical management and is complicated by involvement of critical structures such as the airway. Here we review the management and functional outcomes of CNF at The Alfred.

Method: Retrospective review of patients with CNF admitted between 2007 and 2017 was conducted. Alfred Health is a quaternary referral center that provides statewide hyperbaric oxygen service in Victoria.

Results: Six patients with CNF were identified. Majority (5/6) were men, mean age of 47 years. Mean length of stay (LOS) was 41 days with mean ICU LOS of 12 days. Origin of infection was retropharynx (3), odontogenic (2), Ludwigs angina (1) and left arm ascending to neck (1). All presented with upper airway obstruction requiring urgent airway management. Two received urgent tracheostomies, 3 underwent RSI with median 4 days intubated before undergoing tracheostomy and 1 remained intubated for 10 days. Mean number of debridement's was 4. All had spread to mediastinum superiorly with 2 requiring cardiothoracic washout and 2 requiring ultrasound drainage of empyema. All required inotropic support and hyperbaric therapy with an average of 6 dives. 83% grew *Streptococcus constellatus* and 50% received IVIG. 3 required haemodialysis, 3 suffered cardiac arrhythmias, 1 developed a DVT and one had a pharyngeal hole to the skin managed conservatively. None required reconstruction and all survived.

Conclusion: Urgent airway control is required in CNF, however, management differs. More research into management options and their functional outcomes are required.

Poster Presentation Abstracts (continued)

An Unusual Case of Herpes Zoster Mandibularis Post Total Parotidectomy

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Keywords: squamouscellcarcinoma, parotidectomy, herpeszoster

Case Presentation: A 62-year-old immunocompromised man presented with three days of left facial pain, otalgia and vesicular rash along his left lower lip and chin, anterior two-thirds tongue (Fig. 1) and around his external auditory meatus (EAM) (Fig. 2). On examination vesicles were distributed along the mandibular division of the trigeminal nerve (V3). Pain and debris at EAM precluded viewing his canal or eardrum. There were no new cranial nerve deficits, no meningism, vertigo or pneumonitis. Medical history includes chronic lymphocytic leukaemia and squamous cell carcinoma (SCC) of the parotid gland treated with total parotidectomy and neck dissection (levels 2-3) 6 months prior. The tumour was encasing the left facial nerve and macroscopically dissected off. Post-operatively, he developed permanent CNVII palsy (HBE-4). Histopathology revealed poorly differentiated SCC. He received adjuvant radiotherapy (60 Gy, 30 fractions). Current presentation occurs three months after completing radiotherapy. He was treated empirically with valaciclovir, nilstat and ciprofloxacin ear-drops. Polymerase chain reaction of varicella zoster virus DNA was positive. He was seen three months later with complete resolution of rash albeit with post-herpetic neuralgia.

This case is unusual as the skin distribution doesn't involve the whole V3 but but spares the mandibular angle. Reactivated VZV uses anterograde axonal transport to the skin, however, exact mechanisms are unknown(1, 2). Its possible V3 was injured when raising the skin flap during parotidectomy, impairing elements of axonal transport used by the virion in reactivation. Furthermore, pre-existing CNVII palsy and inability to see the tympanic membrane, preclude comment on CNVII involvement.



Does Access to Dental Care affect Quality of Life?

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Keywords: access, dental, survivorship

Purpose/Aim: Improved survival rates in of patients with head and neck cancer (HNC) have led to an increased focus on survivorship. It has been found that treatment related toxicity has an extensive impact on the oral cavity. Timely pre and post-operative care by dentists can minimize such complications and improve quality of life (QoL).

Many HNC units do not provide access to dental services as part of their multidisciplinary teams, relying on patients to seek dental care independently, which is subject to a high degree of individual variability. There is minimal data available regarding access to dental services for patients with HNC in Australia. This research aims to examine the supportive dental needs of patients with HNC by focusing on access to dental care, oral health impact and subsequent QoL implications.

Materials and Methods: A retrospective analysis will be an audit of medical records for patients treated for HNC at the respective treatment centres. The prospective analysis includes a questionnaire and the option of taking part in a telephone or face-to-face interview. The questionnaire includes the Oral Health Impact Profile (OHIP-14). The statistical approach would be descriptive statistics, ANOVAs and chi-squared tests.

Results: Projected findings will showcase that access to dental care significantly impacts QoL, with patients living in regional areas having greater dental needs compared to their urban counterparts.

Conclusions: Expected conclusions include identifying and highlighting barriers in access to dental care. This is likely to provide a platform on which current protocols can be improved for the management of HNC patients.

Poster Presentation Abstracts (continued)

Chemotherapy for Locally Recurrent Cancer of the Head and Neck

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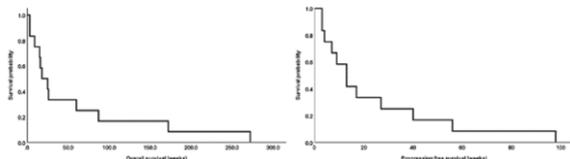
Keywords: head and neck squamous cell cancer, local recurrence, chemotherapy

Purpose/Aim: There is a dearth of literature that reports local disease control and survival outcomes with chemotherapy in patients with locally recurrent head and neck squamous cell cancer (HNSCC). We performed this study to estimate disease control rate (DCR) and overall response rate (ORR) in this setting, which were primary objectives. Secondary objectives were the estimation of progression free survival (PFS), overall survival (OS) and the evaluation of adverse events in all patients included in the study.

Materials and Methods: This was single institution review of all head and neck cancer patients from 1998 to 2012. We identified twelve patients with a diagnosis of locally recurrent head and neck squamous cell cancer, who received systemic chemotherapy alone at the time of local recurrence as they were deemed inoperable at the time of recurrence and considered not suitable for palliative radiotherapy.

Results: ORR in this study was 25%. We also observed 41.6 % DCR. Median OS in this cohort was 18 weeks [95% confidence interval (CI) 3-33]. Median PFS was 13 weeks (95% CI 6-19.6). Overall chemotherapy was tolerable. Incidence of grade 3 and grade 4 toxicities was 66 percent (%).

Conclusions: This is the first study that has demonstrated a meaningful overall response rate and disease control rate with cytotoxic chemotherapy for locally recurrent head and neck squamous cell carcinoma patients. It has shown similar efficacy comparing its use in the metastatic setting. Hence, chemotherapy could be considered for those patients who are unsuitable for surgery or radiotherapy.



Lymphoma Relapse in the Floor of Mouth

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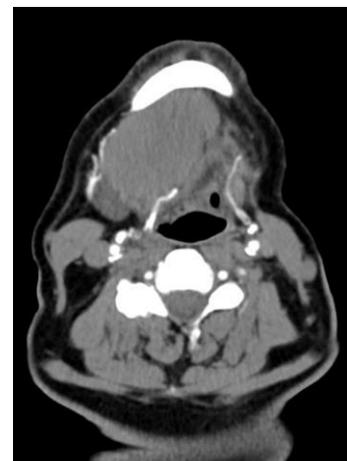
Case Presentation: Lymphomas are a diverse group of malignant lymphoproliferative diseases, characterised by the abnormal clonal expansion of lymphocytes. In the head and neck region, they are the third most common malignant neoplasm, following squamous cell carcinoma, and salivary gland tumours. With squamous cell carcinoma accounting for over 90% of malignancies here, lymphoma accounts for 5% (1). Around one third of lymphomas in the head and neck arise as extranodal disease, with Waldeyer's ring being the most frequently involved site. (2)

The case highlighted here is a 70-year-old man who presented with a bulky, firm, fast-growing mass of the right floor of mouth. Biopsy showed this lesion to be a high-grade B-cell lymphoma, with additional tests consistent with a recurrence of the patient's original aggressive lymphoma, diagnosed 12 months prior. Despite urgent radiotherapy and salvage chemotherapy, the patient ultimately succumbed to his disease 3 months after presentation.

This case illustrates a most unusual site for lymphoma relapse, with similar cases sparse within the literature. It therefore serves to remind us of the myriad possible pathologies within the field of head and neck cancers.

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Poster Presentation Abstracts (continued)

Reduction of Skin Graft Contraction by Using a Dermal Substitute

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Keywords: Skin graft contraction, dermal substitute, Integra

Purpose/Aim: Skin graft contraction has functional and esthetical implications in head and neck reconstruction. Our objectives:

- establish a new mouse model for studying the inhibitory effect of dermal substitutes on skin graft contraction
- use the model for quantitative assessment of the specific effect of Integra on skin graft contraction
- examine if full thickness skin grafts can be used in one stage procedures with Integra

Materials and Methods: 18 male Wistar mice had full thickness skin grafts harvested from their backs and then were divided into a control group (skin sutured back) and an interventional group (Integra placed under the FTSG in one stage, 30% the defect surface and split in equal squares to allow vascular perfusion of the skin graft)

Results: Wound contraction in the two groups was accurately measured. The difference in wound contraction at week 1 was not statistically significant, however the differences increased dramatically after that (once Integra was vascularized) and became statistically significant at week 2 ($p < 0.05$). By week 3 a striking 17% difference in skin graft contraction was seen and the difference in contraction remains stationary in week 4 (at 18%). There was no total or partial graft loss.

Conclusions: We demonstrated that Integra could be safely grafted with full thickness skin graft in a one-step procedure when split dermal template used. The technique could make the application of a dermal substitute easier, more versatile and also enhance skin graft survival. The application of split dermal template also led to a significant decrease in wound contraction.



Head and Neck Cutaneous Squamous Cell Carcinoma Express Cathepsins

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Purpose/Aim: We have demonstrated the presence of multiple cancer stem cell (CSC) subpopulations within head and neck cutaneous squamous cell carcinoma (HNCSCC) that express components of the renin-angiotensin system (RAS). This study investigated the expression and localisation of cathepsins B, D and G that provide bypass loops for the RAS, in relation to the HNCSCC CSC subpopulations we have identified.

Materials and Methods: 3,3-Diaminobenzidine (DAB) immunohistochemical (IHC) staining was performed on 10 HNCSCC samples for cathepsins B, D and G. Western blotting (WB) and real-time reverse transcriptase polymerase chain reaction (qRT-PCR) were used to confirm protein and transcription expression of these cathepsins, respectively. Immunofluorescence (IF) IHC staining was performed to determine co-expression of these cathepsins in relation to the CSC subpopulations. Enzymatic activity assays (EAA) were performed to confirm activity of these cathepsins.

Results: DAB IHC staining showed expression of cathepsins B, D and G in HNCSCC. IF IHC staining demonstrated localisation of cathepsins B and D to the CSCs in tumour nests (TNs). All 3 cathepsins were also expressed by the CSCs in the peri-tumoural stroma (PTS). WB and qRT-PCR confirmed protein and transcription expression of cathepsins B and D, respectively. EAA showed that cathepsins B and D were functionally active.

Conclusions: This study demonstrates the expression of cathepsins B, D and G by HNCSCC CSC subpopulations, localised to the TNs and the PTS, suggesting the presence of bypass loops for the RAS. CSCs in HNCSCC may be a novel therapeutic target through more effective RAS modulation by cathepsin inhibition.

Poster Presentation Abstracts (continued)

Correlation Between Clinical and Pathological Stage in Oral Cavity Cancer

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Keywords: Cancer Staging

Purpose/Aim: Accurate clinical staging for oral cavity cancer (OCC) is an important part of treatment and patient counselling. Discrepancies in clinical and pathological stage of disease have been anecdotally observed. We investigated the correlation between clinical and pathological stage of OCC.

Materials and Methods: Consecutive patients with OCC treated surgically were identified from our prospectively maintained Head and Neck Cancer Database 2005 – 2017 at our Head and Neck centre. Clinical stage at the time of diagnosis was compared to pathological stage following surgical excision. Secondary variables included age, sex, smoking status and mortality rate.

Results: There were 211 patients including 94 women (44%) and 117 men (56%) with a mean age of 62 (22 - 95) at diagnosis. SCC was the most common tumour (93%) and oral tongue was the most common (41%) subsite affected. 83% of clinical T1; 53% of T2; 31% of T3; and 59% of T4 tumours were associated with the corresponding pathological stage. 84% of clinical N0; 25% of N1; 28% of N2a; 58% of N2b; and all N2c cases were associated with the corresponding pathological N stage. 83% of clinical stage I; 40% of stage II; 22% of stage III and 66% of stage IV cases were associated with the corresponding pathological stage.

Conclusions: Early OCC clinical stages correlate well with pathological stages (Spearman correlation = 0.72). There are, however, significant discrepancies between clinical and the corresponding pathological stages for patients with advanced clinical disease. These findings may have implications in treatment planning and patient counselling in clinically advanced OCC.

Computer Simulation of Velopharyngeal Closure

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Keywords: Computer simulation, finite element, velopharyngeal closure

Purpose/Aim: The object of the study was to construct a three-dimensional computer model for the analysis of velopharyngeal closure and to evaluate the influence of the muscle activation on the pattern of velopharyngeal closure.

Materials and Methods: In this study a three-dimensional computational model was developed to simulate a human velopharyngeal closure from a healthy subject's CT data and sectioned images of a donated cadaver. Segmented data were converted into geometry files and they were imported into ArtiSynth, a three-dimensional biomechanical modeling platform, and computer models were created. After normal velopharyngeal closure was performed by muscle activations, changing velopharyngeal pattern was tried by changing activation level of muscles. Normal closure and velopharyngeal insufficiency situation were simulated by controlling muscle activations. To evaluate the change of the pharynx, the area of the pharynx on horizontal planes was calculated.

Results: When the levator veli palatine muscle, the uvula muscle and the superior pharyngeal constrictor muscle were activated, motion that was close to velopharyngeal closure could be obtained. Patterns of three simulations were similar, however, the area changes showed different results. As the activation level of the muscle activation changed, the cross-sectional areas of the pharynx were changed.

Conclusions: Patient-specific computer models of the human using CT or MRI data are expected to be useful in the diagnosis and treatment of the patients with velopharyngeal insufficiency.

Poster Presentation Abstracts (continued)

Do Renin-Angiotensin System Inhibitors Improve Outcomes of Oral Cavity Cancer?

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Keywords: renin-angiotensin system

Purpose/Aim: Renin-angiotensin system inhibitors (RAS inhibitors) have potential anti-tumour effects. Epidemiological studies and meta-analysis examining many different types of cancer have shown reduced risk of metastasis and improved survival for patients who are administered RAS inhibitors. However, their effects on head and neck cancer is less clear.

Materials and Methods: 211 oral cavity cancer (OCC) patients treated at Hutt Hospital were identified from our Head and Neck Database, and medications that directly or indirectly inhibit the RAS (NSAIDs, aliskerin, β -blocker, ACE inhibitor and angiotensin receptor blocker), as well as histology type, stage, Charlson comorbidity index (CCI), demographics, surgery, recurrence and survival were retrospectively examined. Analysis was performed by a biostatistician.

Results: 84 patients (39.8%) took at least one RAS inhibitor. Patients taking RAS inhibitors were significantly older (66.8 vs 58.9 years old, $p=0.001$) with more comorbidities (CCI= 4.58 vs 3.61, $p<0.0001$). The disease stage, pathology and subsites were comparable. Patients without RAS inhibition had a greater chance of dying from the cancer (1:7.5) than those with higher levels of RAS inhibitors (1:8.5). Medications that promote the RAS (calcium channel blockers and thiazides) did not correlate with mortality outcomes. Age ($p=0.014$) and the Charlson Comorbidity index ($p=0.001$) were correlated with higher 5-year all-cause mortality.

Conclusions: RAS inhibition was associated with improved mortality outcomes after OCC treatment, despite the older age, and higher comorbidities in the RAS inhibition group. A prospective trial of RAS inhibition is recommended.

Impact of Smoking on (chemo)Radiotherapy Outcomes in HPV-Associated Oropharyngeal Cancer

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Purpose/Aim: The purpose of this study was to identify if smoking history impacted on locoregional recurrence free survival (LRRFS), distant metastasis-free survival (DMFS) and overall survival (OS) in patients with Human Papillomavirus (HPV)-associated oropharyngeal cancer (OPC) treated with (chemo)radiotherapy.

Materials and Methods: Patients treated with a predefined policy of radiotherapy with or without chemotherapy and 12-week re-staging PET/CT directed management of the neck ('treatment package') between January 2005 and January 2016 at our institution were included and divided into 3 smoking categories; non-smoker, <10 pack-years, ≥ 10 pack-years. Kaplan-Meier method was used to determine LRRFS, DMFS and OS with log-rank test used for group comparisons.

Results: 372 consecutive patients were eligible. Median follow-up was 57 months. Patient numbers by smoking category was non-smoker: 115 (31%), <10 pack-years: 83 (22%) and ≥ 10 pack-years: 174 (47%). 94% patients had concurrent chemotherapy. No significant differences in age ($p=0.71$), Stage ($p=0.97$) or use of chemotherapy ($p=0.55$) were observed between smoking categories. 5-year LRRFS by smoking category was non-smoker: 95.3%, <10 pack-years: 88.2% and ≥ 10 pack-years: 88.8%. 5-year DMFS by smoking category was non-smoker: 88.1%, <10 pack-years: 92.6% and ≥ 10 pack-years: 84.2%. 5-year OS by smoking category was non-smoker: 87.2%, <10 pack-years: 87.8% and ≥ 10 pack-years: 85.3%. No significant difference in LRRFS ($p=0.172$), DMFS ($p=0.233$) and OS ($p=0.865$) were observed between smoking categories.

Conclusions: Smoking history did not impact on LRRFS, DMFS or OS in this large cohort of patients with HPV-associated OPC following the 'treatment package'. These findings have implications for future trial design involving this group of patients.

Poster Presentation Abstracts (continued)

Influence of Lycopene on Cytotoxicity of PMMA Used in Obturators

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Keywords: Lycopene, oral cancer, PMMA

Purpose/Aim: Obturator Prosthesis for a maxillectomy patient is fabricated with Polymethyl Methacrylate (PMMA). Dental polymer leaches its unreacted residual monomer which induces biological responses on tissues retarding the healing of defect area in maxillectomy patients. This warrants a need for potent topical antioxidants for maxillectomy patients.

Purpose: To evaluate the influence of lycopene on cytotoxic effects of PMMA on L929 murine fibroblasts.

Materials and Methods: Qualitative Analysis of Auto polymerised PMMA test samples was done using GCMS. Lycopene was extracted by using Soxhlet's method, purified and quantified using HPLC. Antioxidant activity of Lycopene will be evaluated with DPHH assay. Experimental PMMA samples with and without lycopene in different concentrations will be subjected to cytotoxic studies on L929 cell lines. MTT assay was used to investigate the cell viability on the test and control samples. The results will be statistically analysed by one-way ANOVA test ($p < 0.05$).

Results: Lycopene improved the cell viability in a dose and time dependent manner in test group with PMMA samples. The effect of lycopene was more after 48 and 72hrs compared to 24hrs. A dosage of 7.8-15 μ ml exhibited more cell viability whereas increase in lycopene dosage reduced cell viability <50%.

Conclusions: The obturator prosthesis and its metabolites adds to the biological effects on tissues. Topical antioxidants are emerging in the field of dentistry. Within the limitations of this study it can be concluded lycopene can improve the healing in maxillectomy patients wearing an interim obturator made with auto polymerised PMMA.

Dysgeusia Assessments: What to Use Post Head and Neck Cancer

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Keywords: Dysgeusia, Oral Intake, Altered Taste

Purpose/Aim: Post Head and Neck Cancer (HNC), patients experience dysgeusia which impacts oral intake. Its prevalence is well-recognized, though rarely assessed systematically within the clinical setting beyond subjective comment. New assessment methods may enhance clinical detection. Study aims were: (primary) compare outcomes from a new taste strip assessment compared to a liquid whole-mouth taste test; (secondary) examine the relationship between physiological taste tests and patient-reported taste perceptions.

Materials and Methods: Thirteen HNC patients were assessed at baseline, during and post chemo/radiation therapy (CRT) (treatment weeks 2/4, 1/3/6 months post-treatment). Two physiological taste tests were used to assess recognition and intensity of the tastants salt/sweet/sour/bitter: 1) traditional solution-based (liquid) tastants, and 2) new taste strips (1-inch square tastant strips). Patients also self-rated function on the Chemotherapy-induced Taste Alteration Scale (CiTAS).

Results: Recognition agreement between the taste tests was somewhat comparable, however, lowest during treatment week 4 and at 1-month post-treatment. Recognition was highest overall for the sweet tastant. Taste intensity agreement (all four tastants) between the physiological tests across all time points and all data points was low. Sweet and sour were most in agreement. Salt and bitter were the least in agreement. Correlations between the CiTAS and both taste test methods were comparable.

Conclusions: Taste strips data show low agreement compared to the whole mouth liquid testing. Future cohort studies are warranted to determine taste assessment protocols that may provide important information that can be collected in a reasonable time frame in a clinical setting to improve functional outcomes.

Poster Presentation Abstracts (continued)

Material Change of Use - A Clinical Innovation

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Keywords: polyvinyl siloxane, Biocompatibility, Surgical obturator.

Purpose/Aim: Immediate surgical obturator fabrication is a taxing task regarding precision and retention. The application of a soft liner to recompense the imprecision has proven to reduce the quality and patient comfort.

Hypothesis

Material change of use is the look for alternative ways that standard materials can be used. The aim is to submit polyvinyl siloxane (PVS) impression material for biocompatibility testing and explore the possibility to use it in immediate obturators.

Materials and Methods: An in-vitro study was conducted to check the stability of PVS material in human saliva, artificial nasal fluid, and methanol using GCMS analysis. The specimens were immersed in methanol for two weeks and tested at material disintegration. The specimens immersed in human saliva and artificial nasal fluid were checked at the end of 24 hours for the same.

The samples were photographed using DSLR camera and then placed in human saliva and in artificial nasal fluid for 14 days. At the end of every 24 hours, the samples were taken out, cleaned, and replaced with fresh fluids. On the 14th day, the samples were photographed. The pre and post test images were compared for the surface characteristics.

Results: Octasiloxane and hexadecamethyl were released in methanol and both are non-toxic.

No release of PVS by-products in saliva; In nasal fluid, Cyclooctasiloxane and Cycloheptasiloxan were detected.

No noticeable surface changes observed in the image excluding the fluid residues

Conclusions: Our biocompatibility testing revealed the nontoxic nature and surface stability of PVS and therefore the chance to use PVS in immediate obturators

Retropharyngeal liposarcoma - A Rare Cause of Obstructive Sleep Apnoea

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Keywords: liposarcoma, retropharynx, surgery

Case Presentation: Background: Although common amongst soft tissue sarcomas, liposarcomas are relatively rare in the head and neck, accounting for 2-9% of head and neck sarcomas. We present an exceedingly rare case of a well-differentiated liposarcoma arising in the retropharyngeal space.

Case report: A 64-year-old male was diagnosed with a large retropharyngeal mass on CT after a long history of obstructive sleep apnoea. Areas of FDG-avidity on PET were suspicious for liposarcoma. Multi-disciplinary meeting discussion did not recommend neoadjuvant or adjuvant chemoradiotherapy and the patient was treated only with surgical excision. Histopathological analysis was consistent with a well-differentiated liposarcoma with MDM2 amplification on FISH assay. On review 6 months after his operation, the patient had an excellent functional outcome and his OSA had resolved on polysomnogram. There was no residual or recurrent disease on MRI.

Discussion: A review of the literature revealed this as only the twelfth reported case of retropharyngeal liposarcoma. The initial misdiagnosis of this patient illustrates the importance of adequate assessment of patients with sleep apnoea. Multi-disciplinary discussion is essential in formulating an appropriate management plan in cases of rare and unusual malignancies where treatment remains controversial. In particular, this case emphasises the importance of expert radiological opinion in identifying suspicious features in otherwise benign appearing pathology.

Poster Presentation Abstracts (continued)

Head and Neck Cutaneous Squamous Cell Carcinoma Express Renin-Angiotensin System

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Purpose/Aim: This study investigated the expression of components of the renin-angiotensin system (RAS): pro-renin receptor (PRR), angiotensin converting enzyme (ACE), angiotensin II receptor 1 (ATIIR1) and angiotensin II 2 (ATIIR2) in head and neck cutaneous squamous cell carcinoma (HNCSCC), in relation to the 4-cancer stem cell (CSC) subpopulations we have identified.

Materials and Methods: 3,3-Diaminobenzidine (DAB) immunohistochemical (IHC) staining for PRR, ACE, ATIIR1 and ATIIR2 was performed on 10 HNCSCC tissue samples. Immunofluorescence (IF) IHC staining was used to localise the expression of these RAS components in relation to the CSC subpopulations by co-staining with SOX2 and ERG. Western blotting (WB) and RT-PCR were performed on 6 HNCSCC tissue samples and 5 cell lines derived from these tissues.

Results: DAB IHC staining demonstrated the presence of all 4 RAS components within HNCSCC tissues. IF IHC staining showed expression of ATIIR1 on the SOX2+ CSCs within the tumour nests (TNs) and the peri-tumoural stroma (PTS). ACE was localised to the CSCs on the endothelium of the microvessels within the PTS. WB confirmed the presence of ATIIR1, PRR and ACE in HNCSCC tissues and PRR and ATIIR1 in cell lines. RT-PCR showed transcriptional activation of all four RAS components in HNCSCC tissues, whilst the cell lines showed transcriptional activation for all, except for ATIIR2.

Conclusions: Components of the RAS are expressed by CSC subpopulations within the TNs, the PTS and the endothelium of the microvessels within the PTS. This novel finding suggests CSCs could be a potential therapeutic target by modulation of the RAS.

Quantifying Outcomes of Mandibular Reconstruction by Using a Digital Method

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Keywords: mandibulectomy, mandibular rotation

Purpose/Aim: Medial rotation and displacement of two residual segments of mandible was common following a segmental mandibulectomy even the mandible was restored with grafts or reconstruction plates. This problem seems to be eliminated by application of preoperative computer simulation, preformed reconstruction plates and surgical guides fabricated with 3D printing techniques. However, the outcomes of those modern techniques were seldom evaluated quantitatively. The purpose of this study was to develop an objective method to quantify outcomes of mandibular reconstruction.

Materials and Methods: Presurgical & postsurgical CBCT data were used for analysis. Six patients were included in this study. Their mandibles were reconstructed with preformed reconstruction plate and positioning guides fabricated on the presurgical 3D printed models. A simulation software (ImplantMax, Saturn Imaging Inc., Taiwan) was applied to overlap two sets of CT data to calculate 4 geometric parameters: (1) change of intercondylar distance (ICD), (2) change of inter-gonion distance (IGD), (3) angle formed by mandibular lower borders from frontal view (AMF), and (4) angles formed by mandibular lower borders from axial view (AMA). The type of defect location, distance of resection lines, experiences of operator, type of bone grafts, and postoperative conditions were also recorded.

Results: Size of defect, skill of surgeons, type of surgery, range of resection, and postoperative care were all contributing factors to cause mandibular rotation.

Conclusions: By using mapping of presurgical & postsurgical CBCT data and calculation of geometric parameters, the pros & cons of different surgical techniques and factors could be evaluated in segmental mandibulectomy.

Poster Presentation Abstracts (continued)

Metastatic RCC to the Base of Tongue Treated with TORS

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Keywords: TORS

Case Presentation: Renal cell carcinoma (RCC) rarely metastasises to the head and neck region with distant disease at these sites accounting for less than 2 percent of metastases. There are few case reports detailing metastasis to the oral tongue and no reports to date describing resection using transoral robotic surgery.

Case Report Summary: We present the case of a 70-year old man who was diagnosed with metastatic RCC to the base of tongue (BOT), 20 years after undergoing a nephrectomy for the primary disease. He presented with a short history of haemoptysis and globus pharyngeus. He was referred to a local ENT surgeon who identified a right BOT lesion and accordingly performed a microlaryngoscopy and biopsy, which confirmed the diagnosis of metastatic RCC. He was subsequently referred to a Head and Neck surgeon for ongoing care and management. However, he chose to pursue alternate therapies.

He re-presented following symptom progression and ongoing haemoptysis approximately 1 year after diagnosis. On examination and imaging, the patient was noted to have a 3x4cm endophytic mass within the right BOT. There was no associated cervical lymphadenopathy. The case was presented at a head and neck multidisciplinary meeting and surgical resection with adjuvant radiotherapy was advised.

He underwent preoperative embolisation of his right facial and lingual arteries prior to trans-oral robotic resection of the BOT tumour. His post-operative course was uneventful. The patient declined adjuvant radiotherapy and opted for close observation. He remains disease free 1-year post op.

Evaluation of Oral Stereognosis in Maxillectomy Patients with Definitive Obturators

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Keywords: Stereognosis, Definitive obturators, Maxillectomy

Purpose/Aim: This study aimed to see whether there was difference between stereognostic abilities before and after insertion of definitive obturators in maxillectomy individuals. To analyse sensory abilities of maxillectomy patients and interpreting the role of adaptation and adjustment to the definitive obturators

Materials and Methods: Oral Stereognosis Tests (OST) was conducted on twenty maxillectomy patients in the age group of 40-60 years. Four shapes were chosen. Square, Rectangle, Circle, Oval were the shapes included in the study as some shapes shared similar characteristics to increase the difficulty of discrimination. Test specimens were made from self cure acrylic resin to permit free oral manipulation by participants. 5mm thick and diameter varying from 10 -15 mm were used as test specimens. The test was conducted before and after definitive obturator insertion and pictures of all the four test specimens were shown to the subject in the chart. For each of the tests the four shapes were presented in random order.

Results: The data gathered were analyzed by means of SPSS software. Comparison of the OSA scores before and after insertion of the definitive obturator was analyzed using Wilcoxon signed rank test. Chi square test was used to compare the OSA scores between groups. $P > 0.05$ was set for statistical significance.

Conclusions: It was concluded that Oral Stereognostic Test is reliable for measuring oral stereognostic perception in maxillectomy patients with definitive obturators and may be used as one of the clinical aids in appreciating the functional limitations imposed by the prostheses.

Poster Presentation Abstracts (continued)

Laryngeal Synovial Sarcoma: A Rare Tumour in a Rare Location

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Keywords: Synovial sarcoma, synovioma, laryngeal cancer

Purpose/Aim: Primary laryngeal synovial sarcoma is an extremely rare tumour predominantly affecting young adults. There are currently no well-defined guidelines to direct investigation and management, and treatment is based largely on what is known of synovial sarcoma of the upper and lower limbs. This PROSPERO-registered study reviewed the diagnostic methods, treatment regimens and survival outcomes for patients with synovial sarcoma of the larynx.

Materials and Methods: A systematic search of databases Medline, Embase, SCOPUS and Web of Science was undertaken. The literature search identified 1031 potentially relevant studies and, after the deletion of duplicates and excluded papers, 98 full text articles were screened. A total of 39 cases were reviewed.

Results: The average age at the time of laryngeal synovial sarcoma diagnosis was 32 years (range 11-79). In all cases (n=39) patients underwent wide surgical excision, with 20 patients requiring a partial or total laryngectomy. 18 received adjuvant and 3 received neoadjuvant radiotherapy. Chemotherapy was used in 10 cases, with ifosfamide the most frequently used agent. There was considerable variability in the order and combinations of the abovementioned treatments. No clinicopathologic factors or treatment regimens were associated with improved overall survival or lower rate of recurrence.

Conclusions: Overall demographic and clinicopathogenic data for synovial sarcoma of the larynx are consistent with the findings of studies from more common sites of disease. However, there is a paucity of literature and heterogeneity in clinical approaches to this highly aggressive sarcoma. Reporting of cases must be standardised and formal guidelines established to guide clinical management.

Virtual Surgical Planning for Mandibular Reconstruction with Free Fibular Flap

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Keywords: Mandibular reconstruction, virtual surgical planning, free fibular flap

Case Presentation: The reconstruction with free fibular flaps following segmental mandibulectomy is the gold standard because of its high success rate and improvement of QOL. However, it requires long and complex procedure and the results were sometimes influenced by surgeon's experiences and manual skills. The computer-aided design (CAD) and computer-aided manufacturing (CAM) has been introduced to improve the accuracy and efficiency of mandibular reconstruction. Although some studies reported positive outcomes, because most of these accessed the outsourcing laboratory or company, there are issues of cost, delivery time, and regional restriction. This study will report the mandibular reconstruction using with in-house surgical devices fabricated by 3D printer and evaluate the accuracy of the mandibular reconstruction.

Case report: Three consecutive patients presented with SCC of the mandible posterior regions and planned segmental mandibulectomy, reconstruction using free fibular flap and neck dissection at Tohoku University Hospital. The resection of mandible and apposition of fibula were simulated, and the osteotomy guides of mandible and fibula were designed using CAD software. The simulated mandibular models and the guides were fabricated by 3D printer. The reconstruction plates were pre-bent to fit the simulated models and the plate positioning guides were molded. The surgeries were performed as preoperative surgical planning and this technique provided appropriate results in function and esthetics. All cancer patients have a risk of the extensive resection in mandible because of positive margins intraoperatively. Therefore, we designed apposition of fibula to deal with the possibility of the extensive resection.

Poster Presentation Abstracts (continued)

Rendezvous Procedure for Treatment of Radiation Induced Oesophageal Stenosis

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Keywords: Survivorship, Radiotherapy, larynx

Case Presentation: Aim: To describe the technique and examine the safety and efficacy of a combined antegrade and retrograde dilation (Rendezvous procedure) for treatment of oesophageal stenosis occurring as a complication of curative intent radiotherapy for laryngeal squamous cell carcinoma.

Results: We present 2 cases of radiation induced oesophageal stenosis following curative intent radiotherapy for laryngeal SCC. In both cases, rendezvous oesophageal dilation was undertaken following recurrent failed attempts at endoscopic dilation. For these patients, the rendezvous procedure proved a safe and effective treatment for oesophageal stenosis.

Conclusion: Oesophageal stenosis poses a significant burden on quality of life in survivors following treatment for laryngeal SCC. Where endoscopic dilation fails, or is considered unsafe due to technical challenges, the rendezvous procedure may represent a viable alternative. With improved survival rates for early stage laryngeal cancer treated with radiotherapy further investigation into the treatment of this debilitating complication is warranted.

Applying an Emergence Framework of Carcinogenesis to Recurrence in OSCC

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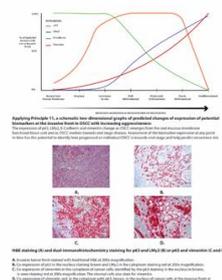
Keywords: oral squamous cell carcinoma, systems biology, translational research

Purpose/Aim: The aim was to apply 'An Emergence Framework of Carcinogenesis' (EFC) to identify predictors of recurrence in OSCC

Materials and Methods: Application of EFC Principles 12, 1 and 2 identified biomarkers p63, laminin $\gamma 2$ (LM $\gamma 2$), and vimentin. Dual immunohistochemistry was developed to enable co-staining of p63/LM $\gamma 2$ and p63/vimentin. Application of EFC Principle 11 produced the hypothetical equation: '% risk of recurrence over 5 years' = $\{ \%p63/LM\gamma 2, \%p63/vimentin \}$ at the invasive front' Patients with resected OSCC were followed for 5 years or until death. Tissue blocks were accessed. Three slides were cut from invasive front. First slide, stained with H&E, was assessed for histopathology features. Second slide, stained with p63/LM $\gamma 2$, and third slide, stained with p63/vimentin, were assessed for percentage of cells co-staining biomarkers and LM $\gamma 2$ staining in front of p63. Margins were determined from original histopathology report. Statistical analyses were performed using Stata software version 14. Time to disease recurrence was the primary end point. Univariate and multivariate analyses were performed using Cox proportional hazards regression to determine the association between demographic and surgical factors with disease recurrence. Results from the regression analyses were reported as hazard ratios and 95% confidence intervals (95% CI). All calculated P values were two-tailed. P<0.05 indicated statistical significance.

Results: Of 55 cases, 23 had recurrence. p63/vimentin was significantly associated with disease recurrence on univariate (P=0.003, 95% CI) and multivariate (P=0.01, 95% CI). Every 1% of p63/vimentin co-staining increased risk of recurrence by 2%.

Conclusions: Application of EFC has identified p63/vimentin co-staining as an independent predictor of recurrence in OSCC.



Poster Presentation Abstracts (continued)

Thyroidectomy is Safe in the Octogenarian Population

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Keywords: thyroidectomy octogenarian elderly complications

Purpose/Aim: In western countries, the elderly represents one of the most rapidly growing subsets of the population. This has a significant impact in thyroid surgery, as we know the elderly experience a higher incidence of thyroid neoplasms and other pathologies. However, there are concerns that the elderly also experiences increased perioperative complications and are therefore poor candidates for thyroidectomy. We aimed to evaluate the safety and perioperative complication profile of thyroid surgery in the octogenarian population.

Materials and Methods: We included all patients who underwent thyroidectomy over the age of 80 between January 2004 to 2018. Data regarding age, gender, presenting symptoms, comorbidities, pre-operative investigations, type of surgery, post-operative complications, and final thyroid pathology were retrieved from hospital records. Descriptive data analysis was performed (SAS v9.4, SAS Institute, Cary NC, U.S.A.)

Results: Of a total of 23 patients (70% female, mean age 84), 21 presented with a combination of symptoms: shortness of breath (SOB), feeling of pressure in their neck, dysphagia and tiredness and two were asymptomatic. All patients underwent preoperative ultrasound, and six underwent computed tomography to assess for retrosternal extension. Post-operative complications were extremely low - one patient developed urinary retention which resolved by discharge, while another developed a temporary right vocal cord palsy which spontaneously resolved within 3 months. There were no ICU admissions or mortalities during the admission or immediate post-operative period.

Conclusions: Based on our small cohort of octogenarians, thyroid surgery appears to be a safe procedure with an acceptable complication profile.

Innovation in Ocular Prosthetics: Use of Imaging and 3D Printing

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Keywords: Ocular prosthesis, 3D printing, CAD/CAM

Case Presentation: Restoration of facial appearance in patients with anophthalmic defect requires a well fitting customized ocular prosthesis. Conventionally, an impression of the defect is done by injecting dental impression material through a tray. This is often uncomfortable to patients and pressure from the material may lead to tissue distortion resulting in inaccurate mould and poorly fitted prosthesis. An innovative method using CAD/CAM technology and 3D printing to fabricate the customized ocular prosthesis is described. This workflow obviates the need of impression taking and production of working model which can be time consuming. The 3-D printed mold serves directly as a trial working prosthesis after being converted to a wax pattern. This presentation showcases two patients with anophthalmia that were successfully restored using the new digital workflow.

Poster Presentation Abstracts (continued)

Good Impression then, Enhanced Retention Now

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Keywords: Poly vinyl Siloxane, long-term
Compatibility, Cell Culture

Purpose/Aim: Purpose: Obturators are an integral part in Post-surgical management of Maxillectomy patients. There are several techniques and materials used for taking impression in the post-surgical phase, but the choice of materials for fabrication of Obturators are Acrylic resins and Soft liners. Poly Vinyl Siloxane (PVS) is one of the best known accurate impression material with good short-term Biocompatibility, however its use in delayed surgical obturator is still under validation. There is no literature to substantiate its long-term effects of Biocompatibility and Anti-Inflammatory properties.

Aim: To evaluate long-term cytotoxicity and anti-inflammatory properties of polyvinyl siloxane on Oral cell-line.

Materials and Methods: Part 1: Experimental samples of PVS will be subjected to cytotoxic studies on oral cancer cell-line. The long-term cell viability (14 days) will be evaluated using MTT assay, cell cycle analysis and apoptosis. Part 2: Anti-inflammatory Analysis is done for evaluation of anti-inflammatory property of the experimental samples for a period of 14 days on the Normal Cell-line. The results will be statistically analyzed by one-way ANOVA test ($p < 0.05$).

Results: (Expected Outcome) The PVS is expected to reduce cell viability and induce apoptosis on oral cancer cell line and show a good anti-inflammatory response in the normal cell line.

Conclusions: The delayed surgical obturator placement is to restore and maintain oral function to a reasonable level during the postoperative period, without causing much discomfort. Hence, PVS will be good and convenient alternative for fabrication of delayed obturators.

Locally Recurrent Lentigo Maligna within a Skin Graft

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Case Presentation: An 81-year-old man presented with a new lentigo maligna (LM) of the right pre-auricular region demonstrated on biopsy in August 2014. He went on to have wide local excision and reconstruction with full thickness skin graft from the right groin in October that year. Histopathology revealed extensive melanoma in situ characterised by a lentiginous and nested proliferation of moderately atypical junctional melanocytes. No invasive melanoma was identified. The lesion was excised with a close radial margin (1mm), and the patient subsequently had a wider excision in December 2014 to obtain a minimum clearance of 5mm. No residual LM was identified at that time.

In early 2017 the patient represented with new areas of pigment within his right pre-auricular graft. This area was narrowly excised and re-grafted. Histopathology revealed residual LM extending to involve multiple radial margins.

The patient went on to have superficial radiotherapy to the right pre-auricular region. He recovered well and as of January 2018 had no evidence of disease recurrence.

Recurrent disease tends to present over time, with newly pigmented areas on the edge of a previous treatment area. Recurrence around an excision or graft is a previously described phenomenon in both LM and lentigo maligna melanoma. However, to have recurrent disease manifesting within a skin graft harvested from an unaffected area of skin is not typical and, to our knowledge, this is the first reported case of a within graft recurrence of LM.

Poster Presentation Abstracts (continued)

Review: Functional Outcomes Following Prosthetic or Surgical Obturation

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Keywords: functional, outcomes, obturation

Purpose/Aim: To critically review the existing literature on functional outcomes following either prosthetic or surgical obturation for acquired maxillary defects, to ascertain if an evidence-based approach to obturation method would emerge.

Materials and Methods: A PubMed search was performed with the terms "maxillary", "prosthetic", "surgical", "microvascular", "obturation", "outcomes" and "quality of life". Abstracts of articles meeting the search criteria were screened, and where deemed appropriate the full article was obtained and reviewed. Additional references were obtained from selected articles' reference lists.

Results: Speech, mastication and deglutition were the main functional outcomes reviewed. Qualitative analysis revealed speech outcomes appeared to be satisfactory or within normal limits for both obturation methods, especially when assessed objectively. Positive masticatory outcomes have been reported with prosthetic obturation but following surgical obturation these seemed to be dependent on the remaining dentition and the ability to subsequently rehabilitate the dentition. Prosthetic obturation improved deglutition outcomes but was related to the extent of the defect. Surgical obturation in turn showed higher quality deglutition outcomes over prosthetic obturation.

Conclusions: Although not a systematic review, it seems that functional outcomes post-rehabilitation are dependent on the method of obturation and governed by the size of the defect. Satisfactory functional outcomes can be achieved by prosthetic obturation for small defects. Once defects occupy greater than 50% of residual hard and soft palate structures, some form of surgical obturation with dental rehabilitation is indicated. Further studies assessing functional outcomes objectively post-rehabilitation are required to gain a better understanding of the patient's view on the quality of these outcomes.

Case-Matched Survival Outcomes of Young Adults with Non-HPV Mucosal HNSCC

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Purpose/Aim: Debate in the literature continues concerning the prognosis of young patients (YP) with mucosal squamous cell carcinoma (mSCC). Population studies demonstrate an increasing incidence of non-Human Papilloma Virus (HPV) related mSCC. No Australian studies have examined this patient population to date. We conducted a case matched analysis of survival in YP with non-HPV mSCC.

Materials and Methods: A retrospective review of the Sydney Head and Neck Cancer Institute Database from 1985-2016 was conducted for mSCC patients who underwent surgical resection. Patients with HPV positive cancers and oropharyngeal cancer were excluded. Cases were matched on gender, treatment modality, pathological T-stage and N-stage. Using a propensity scoring approach, 290 older patients (OP) were matched in a 2:1 ratio with 145 YP. Survival endpoints included disease free survival (DFS), overall survival (OS) and disease specific survival (DSS).

Results: Matching variables were similar between the two groups, with a mean age of 42.7 in YP and 66.7 in OP. The median follow up was 40.8 months (IQR: 15.0 to 64.8), with 70 deaths and 139 recurrences. The 3-year survival probability was similar across both groups for OS (YP: 85.0%, OP: 79.4%), DFS (YP: 66.9%, OP: 65.1%) and DSS (YP: 86.0%, OP: 80.2%). In both groups, disease recurrence or death frequently occurred in the first 2 years. On univariate analysis OP had a non-significant trend of poorer OS (HR: 1.57; p=0.10) and DSS (HR: 1.61; p=0.10). DFS was similar between the two groups (HR: 1.12; p=0.55).

Conclusions: Young patients with non-HPV related mSCC have similar survival outcomes to older patients.

Poster Presentation Abstracts (continued)

Outcomes of Octagenarian Patients Following Head and Neck Cancer

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Purpose/Aim: Following recent cases of octagenarians seen at the Royal Brisbane and Womens Hospital head and neck mdt we decided to assess the morbidity and outcomes of this patient subset to assist with future treatment algorithms.

Materials and Methods: Retrospective data collection from January 2014 to January 2018 from the head and neck database. 850 octagenarians were seen between January 2014 and January 2018. These patients were then divided into those seen and offered surgery compared to non-surgical or palliative management. The ECOG status of patients that proceeded to surgery was analysed pre and post operatively to see if the surgery had any negative impacts. The subset of patients was then further reviewed for immediate and delayed post operative complications, whether they returned home or needed rehabilitation. This data was then compared to the current literature.

Results: 850 cases divided between surgical non-surgical and palliative cases.

Conclusions: Based on the data subset that we obtained and in comparison, with the literature there is a consistent trend noted that patients over 80yrs of age are more likely to have extended hospital stays either as inpatient post operatively or in rehabilitation facilities. Substantial head and neck surgeries can have detrimental effects on patients return to life function that is reflected in their ECOG status. They are also just as likely to be offered surgery as a younger patient with similar comorbidities.

A Case of Implant-Supported Fixed Prosthesis after Mandibular Marginal Resection

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Keywords: Dental implant, Oral rehabilitation, Mandibular marginal resection

Case Presentation: The patient, 44-year-old woman, presented to the hospital with a chief complaint of the redness and pain throughout the mandibular gingiva bilaterally. A biopsy and the subsequent histological examination confirmed the diagnosis of squamous cell carcinoma (T3N0M0). Marginal resection of the mandible, neck dissection, and external femoral flap reconstruction surgery were performed. For the functional and esthetic rehabilitation, the dental implant supported prosthesis was selected. Then "shortened dental arch" was planned since the vertical prosthetic space was lacking for the occlusal restoration in molar regions bilaterally due to the thick transplanted flap. Four implants were inserted between the mental foramen. At the implant secondary surgery, a customized healing abutment made of self-curing resin, was used to enlarge the peripheral flap from inside for making the prosthetic space. The temporary superstructure was used for keeping the space as well as occlusal rehabilitation. The final impression was performed after using the temporary superstructure for about four months. At the final impression, a resin-made customized index by duplicating the temporary superstructure and the individual tray were used to simultaneously record the implant position and morphology of the mucosa around the implant. The index and impression coping were fixed together by the immediate polymerization resin and impression was taken using the elastomeric silicone material. Duplicated temporary superstructure was also used for the bite registration. A porcelain-veneered zirconia prosthesis was prescribed due to its excellent esthetics and mucosa compatibility. The implant supported fixed prosthesis was an effective for recovering her function and esthetics.

Poster Presentation Abstracts (cont'd)

Considerations in Customized on-Lay Implants to Correct Facial Skeletal Asymmetry

Zhao, Linping *, Morris, David; Alkureishi, Lee; Patel, Pravin

University of Illinois at Chicago; Shriners Hospitals for Children at Chicago, The Craniofacial Center, Chicago, IL, United States

Keywords: Customized on-lay implant; Facial skeletal symmetry; Mirror algorithm; Computer assisted design or C

Purpose/Aim: Facial skeletal asymmetry presents in patients with a variety of cleft and craniofacial conditions. Depending upon the clinical situation, an on-lay implant may be placed as a sole correction or following conventional orthognathic surgery to correct residual asymmetry. Customized implants can be designed from 3D CT scan using a Mirror algorithm. Theoretically, this approach would afford a greater degree of facial skeletal symmetry. However, clinical outcomes were less predictable. This study aims to revisit this approach so as to identify the problems and search for the solutions.

Materials and Methods: A consecutive series of ten (10) cases were included in which 3D custom fabricated patient-specific implants was used to correct facial asymmetry. For each case we reviewed the individual work flow from CT scan data, mirror algorithm-based implant design, and clinical results. Digital information of the customized implants were compared with post-operative CT scan. The differences were quantified and analyzed.

Results: Four critical factors in implant design were identified: (1) definition of the mid-facial plane or the mirror plane, (2) severity of the deformity, (3) constraints in surgical procedure and in manufacturing, and (4) soft tissue condition and responses.

Conclusions: Mirror algorithm is useful but insufficient in customized on-lay implant design and therefore additional considerations must be made during the design. A design guideline thus proposed.

Use of Facial Scanner for Manufacturing of an Orbital Prosthesis

Yu, Xiaonan *, Shizhu, Bai; Huan, Liu; Yimin, Zhao

School of Stomatology, the Fourth Military Medical University, Department of Prosthodontics, Xi'an, Shaanxi, China

Keywords: orbital defect, digital impression, rehabilitation

Case Presentation: For a patient with a unilateral orbital defect, an aesthetic orbital prosthesis that is symmetrical to the normal eye plays a critical role in enhancing the quality of life. The technique of computer aided design and computer aided manufacturing (CAD/CAM) has been used in producing facial prosthesis. The three-dimensional data of patients is the foundation for facial prosthesis design and manufacture. However, digital impression needs to enhance its precision for skin surface texture so far.

This technique presents a method of manufacturing an orbital prosthesis based on the data acquired by the combinational use of a facial scanner and an intraoral scanner. The digital impression acquired by the intraoral scanner offers precise surface features of the unaffected eye. After registrating this data to the data acquired by the face capture system, the combined digital impression could be used for further design of an accurate prosthesis.

The advantage of this method is that it could provide both the gross facial topography and the details of the healthy eye. The details scanned by the intraoral scanner could reach the accuracy needed to reconstruct skin surface textures. In addition, the use of 3D printer to make the negative mold could recreate these structures. Moreover, this workflow reduced the process of sculpting the skin textures manually. The present technique can be clinically applied to the restoration a unilateral defect such as a unilateral eye defect or a unilateral auricular defect.

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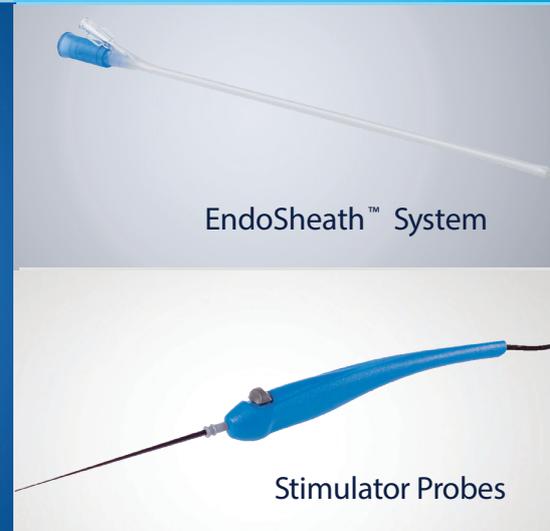
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References 1. Approved Product Information for Lenvima. Eisai Australia Pty Ltd. Date of most recent amendment: July 2017.

2. Schlumberger M *et al.* *NEJM* 2015; 372(7): 621-30. 3. Lenvima PBS Schedule listing. <http://www.pbs.gov.au/pbs/search?term=lenvima>. Accessed October 2017.

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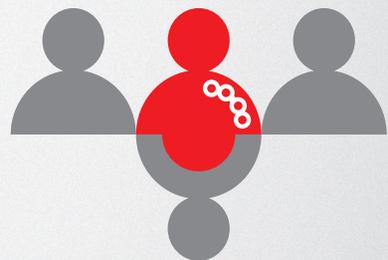
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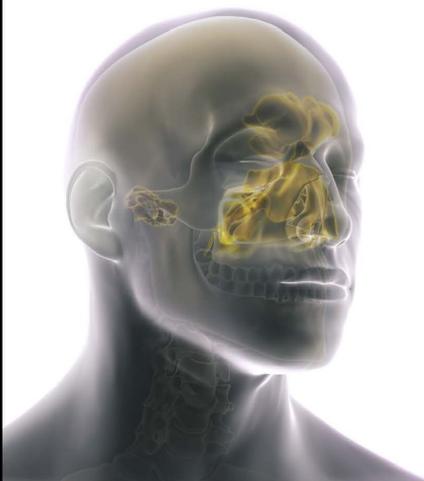
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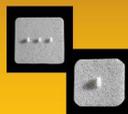
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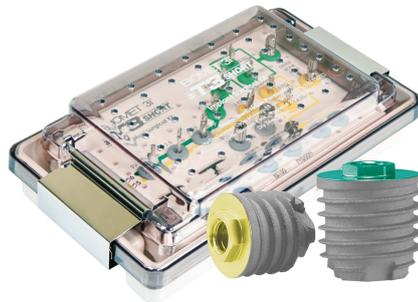
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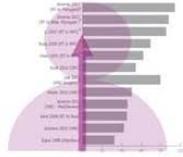
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