Final Program

ANZHNCS
Annual Scientific Meeting

and the

IFHNOS
2016 World Tour

Australian and New Zealand Head & Neck Cancer Society (ANZHNCS)
International Federation of Head and Neck Oncologic Societies (IFHNOS)

www.ifhnosauckland2016.org

25 – 27 October 2016

The Langham Auckland
Auckland, New Zealand

AUSTRALIAN AND NEW ZEALAND
HEAD & NECK
CANCER SOCIETY

Contents

Welcome Letter

Dear Colleagues,

On behalf of the organising committee, it is our pleasure to welcome you to the ANZHNCS Annual Scientific Meeting and the IFHNOS 2016 World Tour in Auckland.

We are very pleased to welcome back the IFHNOS World Tour after the last successful joint meeting in Brisbane in 2012. This year's tour is again led by Professors Jatin Shah and Ashok Shaha. Joining them are Professors Carol Bradford, David Brizel, Claudio Cernea, Robert Ferris and Lisa Licitra. ANZHNCS are very grateful to IFHNOS for providing this opportunity to hear from respected leaders in the areas of Head and Neck Surgery, Radiation Oncology and Medical Oncology.

We also welcome our keynote speaker, Dr Bryan McIver who will deliver the Chris O'Brien Oration in the opening session. There are several invited Australasian faculty members also contributing to the program along with speakers selected for the free paper sessions. We thank all of the presenters for their contributions and look forward to hearing from them throughout the program.

We would like to thank our major sponsors and all the companies participating in the industry exhibition. Your support of the meeting and continuing education is greatly valued by the Society.

Delegates will have the opportunity to meet with exhibitors during the breaks and to also view the scientific posters.

We hope you enjoy the ANZHNCS ASM and the IFHNOS 2016 World Tour in Auckland.

Yours sincerely,

Associate Professor Martin Batstone
Oral & Maxillofacial Surgeon, Brisbane
President ANZHNCS

Dr John Chaplin, FRACS
Otolaryngologist Head & Neck Surgeon, Auckland
Convener ANZHNCS ASM and
the IFHNOS 2016 World Tour

Australian and New Zealand Head & Neck Cancer 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 December 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. Members are eligible for reduced rates to the Annual Scientific Meeting. For further information about the Society and becoming a member visit **www.anzhncs.org**

Members of the ANZHNCS Executive Committee

President	A/Prof Martin Batstone – Oral & Maxillofacial Surgeon, Brisbane
Vice President	Dr Julia Maclean – Speech Pathologist, Sydney
Secretary	Dr Tim Iseli – Otolaryngologist Head & Neck Surgeon, Melbourne
Treasurer	Dr Michael Collins – Radiation Oncologist, Townsville
Executive	Dr John Chaplin – Otolaryngologist Head & Neck Surgeon, Auckland Dr Richard Lewis – Otolaryngologist Head & Neck Surgeon, Perth Dr Nicholas Marshall – Plastic Surgeon, Adelaide Dr Tsien Fua – Radiation Oncologist, Victoria Dr Brian Stein – Medical Oncologist, Adelaide Dr James Bowman – Otolaryngologist Head & Neck Surgeon, Brisbane Dr Kerwin Shannon – Head & Neck Surgeon, Sydney
Immediate Past President	Dr Kerwin Shannon – Head & Neck Surgeon, Sydney

ANZHNCS ASM and the IFHNOS 2016 World Tour Organising Committee

Convener	Dr John Chaplin – Otolaryngologist Head & Neck Surgeon, Auckland
Organising Committee Members	Ms Noelle Farrell – Palliative Care Nurse Specialist, Waikato Ms Lisa Guest – Dietitian, Auckland Dr Andrew Macann – Radiation Oncologist, Auckland Dr Nick McIvor – Otolaryngologist Head & Neck Surgeon, Auckland Dr Mark McKeage – Medical Oncologist, Auckland Ms Esther Ong – Speech and Language Therapist, Auckland Ms Vicki Thomson – Cancer Nurse Specialist, Auckland Mr David Vokes – Otolaryngologist Head & Neck Surgeon, Auckland

Sponsors and Exhibitors

Major Sponsors of the ANZHNCS ASM and the IFHNOS 2016 World Tour

Gold Sponsor: VARIAN medical systems — A partner for life

Silver Sponsors: Bristol-Myers Squibb; Medtronic Further, Together; stryker

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Exhibitors

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Atos Medical
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Bristol-Myers Squibb Pharmaceuticals
Elekta Pty Ltd
Ethicon
Ignyta
INKA Surgical Instruments
Inline Medical & Dental
JR Medical Pentax
Medtronic
Merck
NORGINE
Olympus
Roche Products
Stryker
Varian Medical Systems
Zeiss

Invited Speakers

IFHNOS Travelling Faculty

Professor Jatin Shah
Head & Neck Surgeon, USA

Professor Jatin Shah is an international leader who holds The Elliott W. Strong Chair in Head and Neck Oncology at Memorial Sloan Kettering Cancer Center in New York City.

Professor Shah has served as President of The New York Cancer Society, The New York Head and Neck Society, The Society of Head and Neck Surgeons, The North American Skull Base Society, and the International Academy of Oral Oncology. He is Founder and CEO of The International Federation of Head and Neck Oncologic Societies (IFHNOS).

Professor Shah has been the recipient of numerous awards from all continents and is an honorary member of several head and neck societies in Europe, Asia, Australia and South America. He serves on the Editorial and Review Boards of 18 scientific journals and has published more than 500 peer-reviewed publications, 78 book chapters and 10 books. His textbook of Head and Neck Surgery and Oncology won First Prize from The British Medical Association and The Royal Society of Medicine, and was awarded the George Davey Howells Prize from the University of London for the best published book in otolaryngology in the preceding five years. He is a much sought-after speaker who has delivered 87 named lectures and keynote addresses and over 1,200 scientific presentations in 49 countries. In recognition of his outstanding contributions and world leadership in head and neck surgery, Memorial Sloan Kettering Cancer Center has established an endowed Chair in his name, the American Head and Neck Society has named an annual symposium in his honor, and the IFHNOS has established an eponymous lecture in his name at its World Congresses.

Professor Ashok Shaha
Head & Neck Surgeon, USA

Professor Ashok Shaha is an Attending Surgeon on the Head and Neck Service at Memorial Sloan Kettering Cancer Center, Professor of Surgery at Cornell University Medical College, and holds the Jatin Shah Chair in Head and Neck Surgery at MSKCC. Dr Shaha completed his surgical training at M.S. University of Baroda and at The Tata Memorial Hospital in India. He completed his surgical training at Downstate Medical Center in Brooklyn, New York and a fellowship in head and neck surgery at Memorial Hospital. He joined the Department of Surgery at Downstate Medical Center in 1982 as a Head and Neck Surgeon, rising to the rank of Professor of Surgery in 1992. During this period, he was also Chief of Head and Neck Surgery at King's County, Brooklyn VA Hospital and University Hospital. He joined the full time faculty of MSKCC in 1993.

Dr Shaha has been awarded many honors throughout his career. He has served as President of the New York Head and Neck Society, the American Society for Surgeons of Indian Origin, the Brooklyn Surgical Society, the New York Cancer Society, the New York Surgical Society, the American Head and Neck Society, and the American Association of Endocrine Surgeons. His CV includes more than 500 publications. Dr Shaha has dedicated his professional career to the training of medical students, residents and fellows. He is Chairman of the Advanced Training Council for Head and Neck Surgery and Oncology Fellowships in the USA.

Professor Carol Bradford
Otolaryngologist, USA

Dr Carol Bradford serves as chair of the Department of Otolaryngology-Head and Neck Surgery at the University of Michigan Medical School and the Charles J. Krause, M.D., Collegiate Professor of Otolaryngology. She is an internationally recognized leader in the treatment of head and neck cancer.

Dr Bradford specializes in head and neck cancer surgery and reconstruction, as well as cutaneous oncology and sentinel lymph node biopsy. Her research focuses on identifying and evaluating biomarkers that can predict outcomes in head and neck cancer patients and developing therapies to combat certain types of head and neck cancer that are resistant to traditional forms of treatment. Bradford has published more than 200 peer-reviewed articles.

During her 16-year tenure as co-director of the Head and Neck Oncology Program at the U-M Comprehensive Cancer Center, she helped to advance it from a small program with a few members to one with 30 members from 10 departments and five schools. She continues to play an active role within the program. Bradford is the honored recipient of several awards, including the Jeanne Cady Solis Award for American Medical Women's Association Mentorship and the 2009 Physician of the Year Award from Castle Connolly. More recently, she was elected into the prestigious Institute of Medicine.

Dr Bradford has been an active member of the American Head and Neck Society since 1994. She served as President of this Society from 2011-2012. In addition, she has served as a Trustee of the American Head & Neck Society

Invited Speakers (cont'd)

Foundation (2008-2012), Chair of the Finance Committee (2003-2004), member of the Advanced Training Council (2002-2008), council member (2002-2005) and member of the Finance Committee (2000-2004). She is presently serving on the Board of Directors of the American Academy of Otolaryngology-Head and Neck Surgery.

Professor David Brizel
Radiation Oncologist, USA

Professor David Brizel is co-Director of the Head and Neck Cancer Program at the Duke Cancer Institute. He holds the Leonard Prosnitz Chair in Radiation Oncology and is also a Professor in Surgery at Duke University Medical Center. He joined the faculty at Duke after completing his residency at the Harvard Joint Center for Radiation Therapy in 1987.

Dr Brizel's research has focused on several areas related to head and neck cancer: concurrent chemoradiation for advanced stage disease, radioprotective strategies to reduce toxicity, tumor hypoxia as a therapeutic target, and functional metabolic imaging for adaptive treatment planning. Dr Brizel has served as an invited speaker and visiting professor at many institutions around the world. He has published more than 125 peer reviewed articles and book chapters. He has worked on the editorial boards of Radiation Research and the Journal of Clinical Oncology. He is a co-editor of the head and neck section of Up to Date Oncology.

Dr Brizel served 5 years on the National Cancer Institute's Radiation Therapeutics and Biologics Study Section. In 2014 he completed a 4-year term as co-Chair of the NCI's Head and Neck Steering Committee, which is charged with the development of phase 2 and 3 cooperative group clinical trials in head and neck cancer. Currently, he co-chairs the Duke Cancer Protocol Review Committee and is co-PI of the Duke site in its role in the NCI's National Clinical Trials Network. Dr Brizel has also been a member of the National Comprehensive Cancer Center's Head and Neck Committee since 2002.

Professor Claudio Cernea
Head & Neck Surgeon, Brazil

Professor Claudio R. Cernea is Professor of Surgery of the Department of Head and Neck Surgery of the University of São Paulo Medical School, in São Paulo, Brazil. He is also an Attending Surgeon of Hospital Das Clínicas of the University of São Paulo Medical School, in São Paulo, Brazil.

Professor Cernea has served as President of the Brazilian Society of Head and Neck Surgery, as well as a member of its Executive Council. In addition, he also served as a member of the Executive Council of the American Head and Neck Society, and he served as a member of the Executive Council of IFHNOS, where he is presently Treasurer.

Professor Cernea has published more than 160 peer-reviewed papers, 42 book chapters and 4 books. Some of his most important publications are related to the surgical classification of the external branch of the superior laryngeal nerve, as well as a surgical maneuver to detect chyle leak during neck dissections. He was the Chief Editor of the book "Pearls and Pitfalls in Head and Neck Surgery", which offers several practical surgical tips in Head and Neck Surgery and was published in English, Portuguese and Mandarin. He received several scientific awards. He also acted as Visiting Professor in some of the most prestigious Institutions of the world; for example: Harvard Medical School, Memorial Sloan-Kettering Cancer Center, MD Anderson Cancer Center, Johns Hopkins Medical School, University of Hong Kong, Albert Einstein College of Medicine, Baylor College at Dallas, University of Pennsylvania, University of Göttingen, Free University at Amsterdam, Universitá Católica di Roma and University of Pittsburgh, among many others. He has delivered several key note lectures and conferences in meetings around the world, as well as over 400 scientific presentations in national and international meetings.

Professor Robert Ferris
Otolaryngologist, USA

Dr Robert Ferris completed his training at Johns Hopkins, focused on head and neck oncologic surgery and cancer immunology. He moved to the University of Pittsburgh Department of Otolaryngology in 2001, where Dr Ferris is currently the UPMC Endowed Professor, Vice-Chair and Chief of Head and Neck Surgery, and Fellowship Director in Head and Neck Oncologic Surgery. At the University of Pittsburgh Cancer Institute, he is Co-Leader of the Cancer Immunology Program and Associate Director for Translational Research. Dr Ferris serves on the Editorial Boards of JNCI, Clinical Cancer Research, Cancer Immunology Research and Section Editor for Cancer, Oral Oncology, and Head and Neck. Dr Ferris has published over 200 peer-reviewed manuscripts and was recently elected co-chair of the NCI Head and Neck Steering committee to facilitate prospective clinical trials.

Dr Ferris's NIH-funded laboratory is focused on reversal of immune escape and immunotherapy using monoclonal

Invited Speakers (cont'd)

antibodies and cellular vaccines. Dr Ferris is leading several prospective randomized trials, including ECOG 3311, testing radiation dose-deintensification after transoral robotic surgery (TORS) for HPV+ oropharynx cancer, and several randomized phase II-III trials of anti-PD-1 and anti-CTLA-4 immunotherapy. He is Principal Investigator of the University of Pittsburgh Specialized Program of Research Excellence (SPORE) grant for translational head and neck research, and a T32 training grant, "Training of Head and Neck Oncologists," both funded by the National Cancer Institute until 2020. Dr Ferris has authored numerous book chapters and co-edited two textbooks, Salivary Gland Disorders and Master Techniques in Head and Neck Surgery.

Professor Lisa Licitra
Medical Oncologist, Italy

Lisa Licitra is Board-certified in medical oncology, with special expertise in the treatment of head and neck cancers. She is currently assistant physician in charge of the Head and Neck Cancer Medical Oncology Unit at the Istituto Nazionale Tumori in Milan, Italy.

Dr Licitra is Free-contract Professor at State University of Milan, a member of the Clinical Editorial Board of the Journal of Clinical Oncology, Editor of START – State-of-the-Art Oncology in Europe (www.startoncology.net) a project of Alleanza Contro il Cancro – Ministry of Health – Italy, a reviewer of the PDQ Summaries on head and neck cancers, a Board Member of EORTC and European Organization for the Research and Treatment of Cancer and Elected Chair of Head and Neck Cancer Cooperative Group of EORTC, co-founder and member of IGEO – Italian Group for the Evaluation of Outcomes in Oncology, Member of The Educational Committee of ESMO (European Society for Medical Oncology), Chair of the Head and Neck Faculty of ESMO, Co-founder and member, as medical oncologist, for the European Head and Neck Cancer Society, a member of the American Society for Clinical Oncology (ASCO), a member of the Italian Association for Medical Oncology (AIOM) and honorary member of the European Society for Therapeutic Radiology and Oncology (ESTRO). Recently Awarded with the "Guido Venosta" Prize of the Italian Foundation for Cancer Research.

Her main fields of interest are head and neck neoplasms, evidence-based medicine, clinical methodology in oncology, and quality of life. Dr Licitra has written five book chapters and approximately 70 scientific articles.

Keynote Speaker

Dr Bryan McIver
Endocrinologist, USA

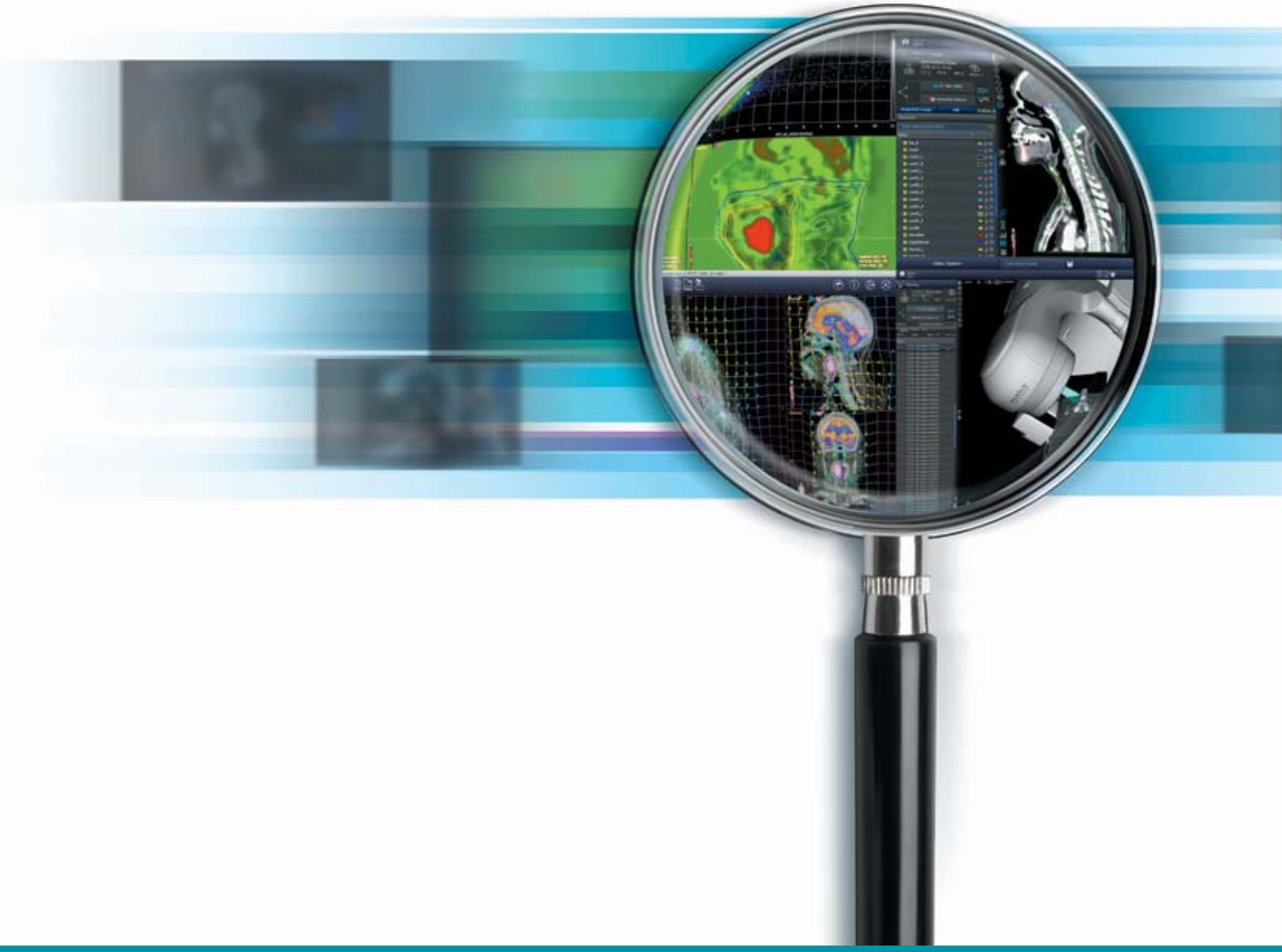
Dr McIver received his MB ChB degree from the University of Edinburgh Medical School in Scotland, following undergraduate work in Edinburgh and a PhD in Physiology and Biophysics at the University of Vermont. He completed an Internal Medicine Residency at the Royal Infirmary of Edinburgh, followed by a Clinical Fellowship and Clinical Investigator Fellowship in Endocrinology at the Mayo Graduate School of Medicine.

Dr McIver joined the staff of Mayo Clinic and spent 15 years as a Consultant in Endocrinology and Internal Medicine at the Mayo Clinic and Foundation and spent 7 years as the Chairman of the Mayo Clinic Thyroid Group. In 2013, he moved to Moffitt Cancer Center, to become the Program Leader of the Endocrine Tumor Program, and was appointed as the Interim Chair of Moffitt's newly created Department of Head and Neck, and Endocrine Oncology. He was also appointed as the Interim Chair of the Department of Breast Oncology. Recently, he was appointed as Deputy Physician in Chief of the Moffitt Medical Group.

During his almost 20 years of clinical practice, Dr McIver has gained broad experience in the evaluation and management of patients with thyroid nodules and thyroid cancer, with a particular focus on advanced and aggressive forms of thyroid cancer.

Dr McIver has a long-standing basic research interest in the genetic regulation of growth, invasion and spread of thyroid tumors of all types. His primary research focus is the use of genetic and molecular techniques to: improve the accuracy of diagnosis of thyroid nodules; more accurately predict outcomes in the disease; tailor appropriate treatment to a patient's unique needs; and guide the use of novel therapies for progressive and life-threatening disease.

Amongst his most proud accomplishments, Dr McIver counts his two Mayo Clinic "Teacher of the Year" awards, recognizing his commitment to education of medical students, residents and fellows; his involvement as a founding member of the World Congress on Thyroid Cancer, an International conference held every four years; and his appointment as a founder member of the Endowed and Master Clinician Program at the Mayo Clinic in Rochester, Minnesota, recognizing excellence in patient care.



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Chris O'Brien Oration

Chris O'Brien

Christopher O'Brien, A.O. 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, Profession 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. 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 world class comprehensive cancer centre, and the centre opened in November 2013, named as The Chris O'Brien Lifehouse Centre at 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 Lifehouse Centre at Royal Prince Alfred Hospital".

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.

2016 ANZHNCS Chris O'Brien Orator

Dr Bryan McIver
Deputy Physician-in-Chief Leader, Endocrine Oncology Program, Moffitt Cancer Center, USA

General Information

Registration

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

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 day registrants. Please enquire at the registration desk for availability.

Registration Desk

The registration desk is located in The Great Room Pre-Function Area of The Langham Auckland.

Opening Hours:

Tuesday 25 October 2016:	7:30am – 5:00pm
Wednesday 26 October 2016:	7:30am – 5:00pm
Thursday 27 October 2016:	7:30am – 12noon

Name Badges and Tickets

Your name badge is essential for entry to the meeting rooms and industry exhibition at The Langham Auckland. Tickets are essential for the Breakfast Symposium, Welcome Reception and Meeting Dinner.

Speakers' Support

Presenters are required to provide an electronic PowerPoint copy of their presentation to the Speakers Support desk at the meeting at least one hour prior to the commencement of their session. The speakers' support desk is located at the rear of The Great Room IV. A technician will be available at the speaker's support desk one hour prior to the commencement of the first session and during the catering breaks from Tuesday 25 October to Thursday 27 October 2016.

Posters

Posters will be displayed in the industry exhibition and The Great Room Pre-Function Area and will be available for viewing throughout the meeting.

Best Overall Oral Presentation and Best Overall Poster Presentation Prizes – Amount $500.00 each

The above-mentioned prizes will be awarded at the meeting. Entries are assessed during the meeting and then announced in the last session.

Royal Australasian College of Surgeons CPD Points

This educational activity has been approved in the RACS CPD Program. Fellows who participate can claim one point per hour (maximum 18 points) in Maintenance of Knowledge & Skills. RACS CPD Online will be updated at the conclusion of the meeting for RACS Fellows who participate.

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 Langham Auckland throughout the meeting.

Connect to Langham Auckland WiFi and enter access code: **HN2016**

Industry Exhibition

The industry exhibition is located in The Great Room I and II at The Langham Auckland. 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 on Tuesday and Wednesday and morning tea on Thursday will be served in the industry exhibition area in The Great Room I and II. Lunch on Thursday will be served in The Great Room Pre-Function Area at the conclusion of the meeting.

Dietary Requirements

Please note that the venue is responsible for all catering at the meeting and ANZHNCS/RACS 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/RACS. If ANZHNCS/RACS requests information about your dietary requirements for a specific event ANZHNCS/RACS will endeavour to forward the information provided to the venue (time permitting). ANZHNCS/RACS 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/RACS 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/RACS refutes any and all liability for any failure to adequately provide your special dietary requirements or any consequential damage resulting from such failure.

General Information (cont'd)

Photography

During the meeting, the Meeting Organisers will take photographs of the 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 a photograph please advise the photographer.

Official Functions

Welcome Reception

Tuesday 25 October 2016
6:00pm – 8:00pm
The Great Room I and II
The Langham Auckland

Cost: Included for full registration categories, bookings essential.

Additional tickets: $80.00. Please enquire at the registration desk for availability.

Dress: Business attire or smart casual.

Beverages: The Langham Auckland is a licensed premises. Strictly NO outside alcohol permitted.

Meeting Dinner

Wednesday 26 October 2016
7:00pm – 10:30pm
Aquamarine Room, Level 1
Hilton Auckland
Princes Wharf, 147 Quay Street
Auckland

Cost: Included for full registration categories, bookings essential.

Additional tickets: $155.00. Please enquire at the registration desk for availability.

Coach Transfers: Coaches depart The Langham Auckland at 6:45pm. Meet on the ground level, City Road entrance.

Coaches leave the Hilton Auckland from 10:30pm to return to The Langham Auckland.

Dress: Lounge suit/cocktail dress.

Beverages: Hilton Auckland is a licensed premises. Strictly NO outside alcohol permitted.

Dress

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

Business Meetings

ANZHNCS Executive Committee Meeting

(Executive Committee Members Only)
Monday 24 October 2016
5:00pm – 7:00pm
Aucklander Room, The Langham Auckland

Foundation Board Meeting

(Board Members Only)
Tuesday 25 October 2016
1:00pm – 2:00pm
Aucklander Room, The Langham Auckland

Annual General Meeting

(ANZHNCS Members Only)
Wednesday 26 October 2016
12:30pm – 1:30pm
The Great Room III and IV, The Langham Auckland

Breakfast Symposium

Molecular Testing for Head and Neck Tumors: The STARTRK-2 Trial of Entrectinib

Presenter: Associate Professor Hui Gan
Director of Cancer Clinical Trials,
Olivia Newton-John Cancer Research Institute,
Austin Health

Wednesday 26 October 2016
7:15am – 8:15am
A light breakfast will be available from 6:45am.
Crystal Room II, The Langham Auckland

Attendance to the symposium is complimentary for registered delegates however tickets are essential. Please enquire at the registration desk about availability.

Proudly sponsored by IGNYTA

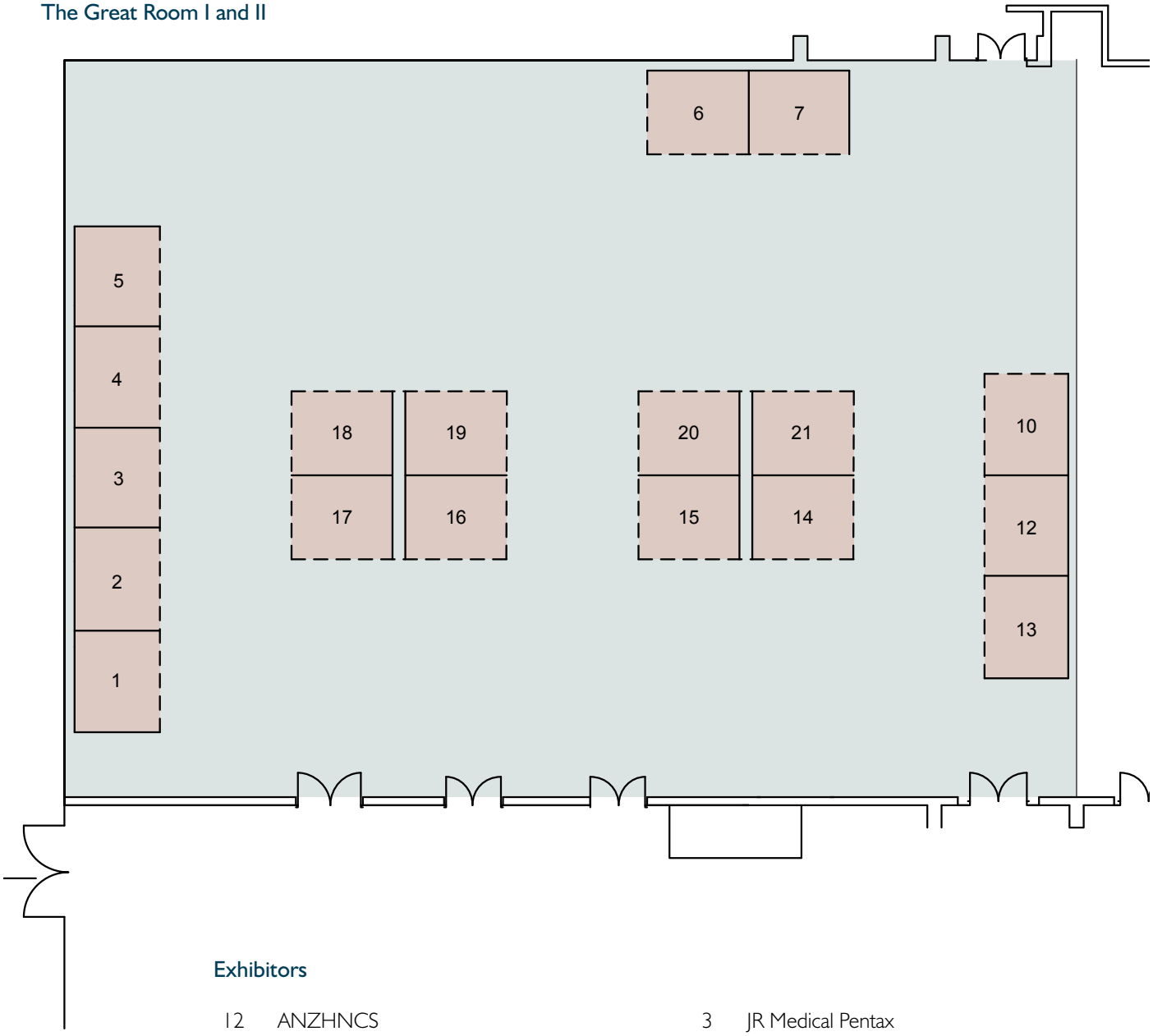
IFHNOS Presentations

Presentations delivered by the IFHNOS Faculty may be viewed on the IFHNOS website: www.ifhnos.org/world
The password to access the presentations is: **ifhnos**

Exhibition Floor Plan

Correct at time of printing

The Great Room I and II



Exhibitors

12	ANZHNCS
21	Atos Medical
12	Beyond Five
13	Bristol-Myers Squibb Pharmaceuticals
15	Elekta Pty Ltd
6	Ethicon
10	Ignyta
20	INKA Surgical Instruments
19	Inline Medical & Dental
3	JR Medical Pentax
16	Medtronic
17	Merck
7	NORGINE
5	Olympus
4	Roche Products
18	Stryker
1 & 2	Varian Medical Systems
14	Zeiss

Program at a Glance *Correct at time of printing*

MONDAY 24 OCTOBER 2016		
5:00pm - 7:00pm	ANZHNCS Executive Committee Meeting (Executive Committee Members Only) *Aucklander Room*	

TUESDAY 25 OCTOBER 2016		
9:00 am - 11:00am	Session 1 - Opening Session and Thyroid *The Great Room III and IV*	
11:00am - 11:30am	Morning Tea with the Industry *The Great Room I and II*	
11:30am - 1:00pm	Session 2 - Cutaneous Malignancy and Melanoma *The Great Room III and IV*	
1:00pm - 2:00pm	Foundation Board Meeting (Board Members Only) *Aucklander Room*	
1:00pm - 2:00pm	Lunch with the Industry *The Great Room I and II*	
2:00pm - 3:30pm	Session 3 - Thyroid Cancer *The Great Room III and IV*	
3:30pm - 4:00pm	Afternoon Tea with the Industry *The Great Room I and II*	
4:00pm - 6:00pm	Concurrent Session 4A: Salivary Tumours and Operative Techniques in Head & Neck Surgery: Part I *The Great Room III and IV*	Concurrent Session 4B: Allied Health / Nursing / Free Papers *Crystal Room II*
6:00pm - 8:00pm	Welcome Reception *The Great Room I and II, The Langham Auckland*	

WEDNESDAY 26 OCTOBER 2016	
7:15am - 8:15am	Breakfast Symposium: Molecular Testing for Head and Neck Tumors: The STARTRK-2 Trial of Entrectinib *Crystal Room II*
8:30am - 10:00am	Session 5 - Oral Cancer *The Great Room III and IV*
10:00am - 10:30am	Morning Tea with the Industry *The Great Room I and II*
10:30am - 12:30pm	Session 6 - Larynx Preservation *The Great Room III and IV*
12:30pm - 1:30pm	ANZHNCS AGM (Members Only) *The Great Room III and IV*

Program at a Glance (cont'd)

12:30pm - 1:30pm	Lunch with the Industry *The Great Room I and II*	
1:30pm - 3:30pm	Concurrent Session 7A: Reconstructive Surgery and Operative Techniques in Head & Neck Surgery: Part II *The Great Room III and IV*	Concurrent Session 7B: Allied Health / Nursing / Free Papers *Crystal Room II*
3:30pm - 4:00pm	Afternoon Tea with the Industry *The Great Room I and II*	
4:00pm - 6:00pm	Concurrent Session 8A: Multidisciplinary Therapy *The Great Room III and IV*	Concurrent Session 8B: Medical Free Papers *Crystal Room II*
6:45pm	Coaches depart The Langham Auckland for the Meeting Dinner. Meet on the ground level, City Road entrance.	
7:00pm - 10:30pm	Meeting Dinner *Hilton Auckland (refer to page 12 for details)*	
10:30pm	Coaches depart Hilton Auckland and return to The Langham Auckland	

THURSDAY 27 OCTOBER 2016		
8:30am - 10:00am	Session 9 - Oropharyngeal Tumours *The Great Room III and IV* *Session sponsored by* VARIAN medical systems A partner for life	
10:00am - 10:30am	Morning Tea with the Industry *The Great Room I and II*	
10:30am - 12noon	Concurrent Session 10A: Skull Base Surgery *The Great Room III and IV*	Concurrent Session 10B: ANZHNCS Research Foundation Session *Crystal Room II*
12noon	Awarding of ANZHNCS prizes Closing Remarks *The Great Room III and IV*	
12:15pm	Lunch *The Great Room Pre-Function Area*	
12:45pm	Meeting Close	

ESTRO European Society for RADIOTHERAPY & ONCOLOGY

ANZHNCS ASM and the IFHNOS 2016 World Tour recommended by ESTRO

Venue Map


Eight
Chandelier
IV
III
II
The Great Room
I
The Great Room Pre-Function
Lifts
Palm Court
Hotel lobby and entrance
Aucklander
Toilets
Greys
Outside Patio
Lobby
Crystal 2
Crystal 1
Pre-Function
Toilets
Gallery 4
Gallery 3
Gallery 2
Gallery 1

Scientific Program *Correct at time of printing*

TUESDAY 25 OCTOBER 2016		
9:00am - 11:00am	**Session 1 - Opening Session and Thyroid** *The Great Room III and IV* **Moderator: Nick McIvor (New Zealand)**	
9:00am	Welcome ANZHNCS President Convener	 Martin Batstone (Australia) John Chaplin (New Zealand)
9:15am	**ANZHNCS - Chris O'Brien Oration** New Guidelines from the American Thyroid Association: A Personalized Approach to Thyroid Cancer Management	Bryan McIver (USA)
9:45am	Pitfalls in the Diagnosis of Thyroid Cancer – a Pathologist's Perspective	Angela Morine (New Zealand)
10:00am	New Strategies and New Treatments for Thyroid Cancer	Bryan McIver (USA)
10:20am	Surgical Management of Graves Disease	Win Meyer-Rochow (New Zealand)
10:35am	Evaluating Thyroid Nodules in the Era of Molecular Markers	Bryan McIver (USA)
10:50am	Head and Neck Patient Education Website	Jonathan Clark (Australia)
11:00am - 11:30am	Morning Tea with the Industry *The Great Room I and II*	
11:30am - 1:00pm	**Session 2 - Cutaneous Malignancy and Melanoma** *The Great Room III and IV* **Moderator: Veronika van Dijck (New Zealand)**	
11:30am	The Current Status of Sentinel Node Biopsy in Cutaneous Head and Neck Malignancies	Richard Martin (New Zealand)
11:50am	Can We Eliminate Toxicity in Cutaneous Head and Neck Malignancies Requiring Radiotherapy?	Giuseppe Sasso (New Zealand)
12:10pm	Immune Checkpoint Inhibitors for Advanced Melanoma	Rosalie Stephens (New Zealand)
12:30pm	A First Look at the Genomic Landscape of Non-metastatic Cutaneous Squamous Cell Carcinoma	Catherine Zilberg (Australia)
12:40pm	Panel Discussion Case Presentation by Veronica van Dijck (New Zealand)	Richard Martin (New Zealand), Giuseppe Sasso (New Zealand) and Rosalie Stephens (New Zealand)
1:00pm - 2:00pm	**Foundation Board Meeting** (Board Members Only) *Aucklander Room*	

Scientific Program (cont'd) - Tuesday 25 October 2016

1:00pm - 2:00pm	Lunch with the Industry *The Great Room I and II*	
2:00pm - 3:30pm	**Session 3 - Thyroid Cancer** *The Great Room III and IV* **Moderator: Robert Ferris (USA)**	
2:00pm	Treatment of Primary Cancers	Jatin Shah (USA)
2:15pm	Treatment of the Neck	Ashok Shaha (USA)
2:30pm	Complications of Thyroid Surgery	Claudio Cernea (Brazil)
2:45pm	Post Operative Management and Follow Up	Bryan McIver (USA)
3:00pm	Panel Discussion Case Presentation by Rowan Valentine (New Zealand)	Ashok Shaha (USA), Jatin Shah (USA), Claudio Cernea (Brazil), David Brizel (USA), Bryan McIver (USA), Angela Morine (New Zealand) and Win Meyer-Rochow (New Zealand)
3:30pm - 4:00pm	Afternoon Tea with the Industry *The Great Room I and II*	
4:00pm - 6:00pm	**Concurrent Session 4A: Salivary Tumours and Operative Techniques in Head & Neck Surgery: Part I** *The Great Room III and IV*	
4:00pm - 5:00pm	**Salivary Tumours** **Moderator: Claudio Cernea (Brazil)**	
4:00pm	Salivary Tumours	Ashok Shaha (USA)
4:30pm	Panel Discussion Case Presentation by Joseph Earles (New Zealand)	Robert Ferris (USA), Carol Bradford (USA), Lisa Licitra (Italy), Robert Allison (New Zealand), Julian White (New Zealand) and Anthony Falkov (New Zealand)
5:00pm - 6:00pm	**Operative Techniques in Head & Neck Surgery: Part I**	
	Panel Discussion	Jatin Shah (USA), Ashok Shaha (USA), Robert Ferris (USA), Claudio Cernea (Brazil), Carol Bradford (USA) and Subhaschandra Shetty (New Zealand)

Scientific Program (cont'd) - Tuesday 25 October 2016

4:00pm - 6:00pm	**Concurrent Session 4B: Allied Health / Nursing / Free Papers** *Crystal Room II* **Moderators: Vicki Thomson (New Zealand) and Noelle Farrell (New Zealand)**	
4:00pm	Strength Through Sharing	Diana Ayling (New Zealand)
4:20pm	A Self-Regulatory Intervention for Patients with Head and Neck Cancer: Pilot Randomized Trial	Amy Richardson (New Zealand)
4:40pm	Head and Neck Cancer Patient Education and Support Needs – A Survey of Patients and Clinicians	Joe Jabbour (Australia)
4:50pm	My Solid Rubbery Neck – Lymph Taping for Head and Neck Lymphoedema	Michelle Urlich (New Zealand)
5:10pm	Lymphoedema and the Impact on Swallow Function	Claire Jeans (Australia)
5:20pm	Factors Impacting Self-reported Upper Limb and Neck Function Following Neck Dissection	Elise Gane (Australia)
5:30pm	Clinical Experience with Microdacyn® Wound Care in Recalcitrant Wounds of the Head and Neck	Felix Mariano (New Zealand)
5:50pm	Discussion	
6:00pm - 8:00pm	**Welcome Reception** *The Great Room I and II, The Langham Auckland*	

Scientific Program (cont'd)

WEDNESDAY 26 OCTOBER 2016		
7:15am - 8:15am	**Breakfast Symposium -** **Molecular Testing for Head and Neck Tumors: The STARTRK-2 Trial of Entrectinib** *Crystal Room II*	
8:30am - 10:00am	**Session 5 - Oral Cancer** *The Great Room III and IV* **Moderator: Ashok Shaha (USA)**	
8:30am	Oral Cancer	Jatin Shah (USA)
9:00am	Panel Discussion Case Presentation by Nick Lilic (New Zealand)	Robert Ferris (USA), David Brizel (USA), Carol Bradford (USA), Scott Coman (Australia), Andrew Cho (New Zealand) and Andrew Macann (New Zealand)
10:00am - 10:30am	Morning Tea with the Industry *The Great Room I and II*	
10:30am - 12:30pm	**Session 6 - Larynx Preservation** *The Great Room III and IV* **Moderator: David Brizel (USA)**	
10:30am	Endoscopic Surgery for Laryngeal Cancer	Robert Ferris (USA)
10:50am	Radiation Therapy for Laryngeal Cancer	David Brizel (USA)
11:10am	Chemotherapy for Laryngeal Cancer	Lisa Licitra (Italy)
11:30am	Panel Discussion Case Presentation by Reza Nouraei (New Zealand)	Carol Bradford (USA), Lisa Licitra (Italy), Carsten Palme (Australia), Matthew Broadhurst (Australia) and Iain Ward (New Zealand)
12:30pm - 1:30pm	**ANZHNCS AGM** (Members Only) *The Great Room III and IV*	
12:30pm - 1:30pm	Lunch with the Industry *The Great Room I and II*	
1:30pm - 3:30pm	**Concurrent Session 7A: Reconstructive Surgery and Operative Techniques in Head & Neck Surgery: Part II** *The Great Room III and IV*	
1:30pm - 2:30pm	**Reconstructive Surgery** **Moderator: Jatin Shah (USA)**	
1:30pm	Reconstructive Techniques	Carol Bradford (USA)
2:00pm	Panel Discussion Case Presentation by Rowan Valentine (New Zealand)	Robert Ferris (USA), Carol Bradford (USA), Claudio Cernea (Brazil), Jonathan Clark (Australia) and Richard Lewis (Australia)

Scientific Program (cont'd) - Wednesday 26 October 2016

2:30pm - 3:30pm	**Operative Techniques in Head & Neck Surgery: Part II**	
	Panel Discussion	Jatin Shah (USA), Ashok Shaha (USA), Robert Ferris (USA), Claudio Cernea (Brazil) and Carol Bradford (USA)
1:30pm - 3:30pm	**Concurrent Session 7B: Allied Health / Nursing / Free Papers** *Crystal Room II* **Moderators: Lisa Guest (New Zealand) and Esther Ong (New Zealand)**	
1:30pm	Swallowing Following Head and Neck Treatment: Using the Correct Tools to Measure the Real Problem	Julia Maclean (Australia)
1:50pm	Rehabilitation after Head and Neck Treatment: The When and the How	Maggie-Lee Huckabee (New Zealand)
2:10pm	Designing and Implementing an Innovative Model of Care for Nutritional Management of Patients with Head and Neck Cancer – Pre-implementation Phase Findings	Merran Findlay (Australia)
2:30pm	A Dietitian-delivered Health Behaviour Intervention Improves Nutrition Outcomes: Eating As Treatment	Judy Bauer (Australia)
2:45pm	Head and Neck Radiation: What Taste Does it Leave?	Sarah Deacon (Australia)
3:00pm	"ScreenIT": Considerations for Clinical Implementation of a New Screening Model for Patients with Head and Neck Cancer and their Carers Undergoing (Chemo)radiotherapy (CRT)	Bena Cartmill (Australia)
3:15pm	How do I do that again? Vodcasts for Patients with Feeding Tubes and Swallowing Difficulties	Rhys Hughes (Australia)
3:30pm - 4:00pm	Afternoon Tea with the Industry *The Great Room I and II*	
4:00pm - 6:00pm	**Concurrent Session 8A: Multidisciplinary Therapy** *The Great Room III and IV* **Moderator: Lisa Licitra (Italy)**	
4:00pm	Radiation Therapy	David Brizel (USA)
4:30pm	Systemic Therapy	Lisa Licitra (Italy)
5:00pm	Complications from RT	David Brizel (USA)
5:30pm	Panel Discussion Case Presentation by Ray Kim (New Zealand)	David Brizel (USA), Robert Ferris (USA), Carol Bradford (USA), Zulfiquer Otty (Australia), Hedley Krawitz (New Zealand) and Mark McKeage (New Zealand)

Scientific Program (cont'd) - Wednesday 26 October 2016

4:00pm - 6:00pm	**Concurrent Session 8B: Medical Free Papers** *Crystal Room II* **Moderator: Jacqueline Allen (New Zealand)**	
4:00pm	The Effect of Rurality and Remoteness on Head and Neck Cancer Patients in the Northern Territory	Rohana O'Connell (Australia)
4:15pm	Mandibular Condyle Dislocation after Osteocutaneous Free Flap Reconstruction of Segmental Mandibulectomy Defects: 10-year Review of Functional Outcomes	John Hines (USA)
4:30pm	Mechanisms of Axonal Dysfunction Underlying Surgical Nerve Injury	Timothy Eviston (Australia)
4:45pm	Value Addition of Ultrasound Over Sestamibi Scan in Diagnosed Cases of Hyperparthyroidism	Alka Ashmita Singhal (India)
5:00pm	A Prospective Comparison of Times to Presentation, Treatment and Survival of Rural and Urban Head and Neck Cancer Patients in North Queensland, Australia	Zulfiquer Otty (Australia)
5:15pm	Implantable Doppler Ultrasound - Balancing the Harms and Benefits from this Technology	Tsu-Hui Low (Australia)
5:30pm	The Burden of Non-Melanoma Skin Cancers in Auckland, New Zealand	Ashwini Pondicherry (New Zealand)
5:45pm	Restoration of Eye Closure in Facial Paralysis Using Implantable Electromagnetic Actuator	Shaheen Hasmat (Australia)
6:45pm	Coaches depart The Langham Auckland for the Meeting Dinner. Meet on the ground level, City Road entrance.	
7:00pm - 10:30pm	**Meeting Dinner** *Hilton Auckland (refer to page 12 for further details)*	
From 10:30pm	Coaches depart the Hilton Auckland to return to The Langham Auckland	

Scientific Program (cont'd)

THURSDAY 27 OCTOBER 2016		
8:30am - 10:00am	**Session 9 - Oropharyngeal Tumours** *The Great Room III and IV* *Session sponsored by* VARIAN medical systems A partner for life **Moderator: Carol Bradford (USA)**	
8:30am	HPV Positive Disease	Robert Ferris (USA)
9:00am	Panel Discussion Case Presentation by Kumanan Selvarajah (New Zealand)	Cladio Cernea (Brazil), Robert Ferris (USA), David Brizel (USA), Ashok Shaha (USA), Lisa Licitra (Italy), Francis Hall (New Zealand) and June Corry (Australia)
9:55am	ANZHNCS ASM 2017	Ryan Sommerville (Australia)
10:00am - 10:30am	Morning Tea with the Industry *The Great Room I and II*	
10:30am - 12noon	**Concurrent Session 10A: Skull Base Surgery** *The Great Room III and IV* **Moderator: Robert Ferris (USA)**	
10:30am	Skull Base Surgery	Jatin Shah (USA)
11:00am	Panel Discussion on Skull Base and Melanoma Case Presentation by David Stoddard (New Zealand)	Carol Bradford (USA), Jatin Shah (USA), David Brizel (USA), Robert Ferris (USA) and Richard Douglas (New Zealand)
10:30am - 12noon	**Concurrent Session 10B: ANZHNCS Research Foundation Session** *Crystal Room II* **Moderators: David Wiesenfeld (Australia) and Swee Tan (New Zealand)**	
10:30am	Introduction of the Australian and New Zealand Research Foundations	David Wiesenfeld (Australia) and Swee Tan (New Zealand)
10:40am	Targeted Next-Generation Sequencing of Oral Cavity Carcinomas Using Paraffin Embedded Tissue	Kendrick Koo (Australia)
10:55am	Salivary Extracellular Vesicles Containing Non-Coding RNA as a Screening Tool for the Early Recognition of Malignant Change In Oral Cavity Squamous Cell Carcinoma	Tami Yap (Australia)
11:10am	The Genomic Mutational Landscape of Salivary Duct Carcinoma (SDCa) and Potential Therapeutic Targets	Timothy Khoo (Australia)
11:20am	The Clinical and Prognostic Correlations of PD-1 and PD-L1 Expression in Nasopharyngeal Carcinoma (NPC)	Rithvik Reddy (Australia)

Scientific Program (cont'd) - Thursday 27 October 2016

11:30am	Cancer Stem Cells in Moderately Differentiated Oral Tongue Squamous Cell Carcinoma Express Components of the Renin-Angiotensin System	Swee Tan (New Zealand)
11:40am	**ANZHNCS Travelling Lectureship** Ameloblastic Carcinoma: A Case Series and Literature Review	Nina Irawati (Indonesia)
11:50am	Consensus Review of Optimal Perioperative Care in Major Head and Neck Surgery with Free Flap Reconstruction: Enhanced Recovery After Surgery Recommendations	Merran Findlay (Australia)
12noon	**Awarding of ANZHNCS prizes** **Closing Remarks** *The Great Room III and IV*	
12:15pm	Lunch *The Great Room Pre-Function Area*	
12:45pm	**Meeting Close**	

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Reference: 1. DeVita VT Jr, Rosenberg SA. *N Engl J Med.* 2012;366:2207–2214.

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AUSTRALIAN AND NEW ZEALAND
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CANCER SOCIETY

Abstracts

Abstracts

Listed in alphabetical order according to Presenter's surname. Presenters appear in bold. IFHNOS presentations may be viewed on the IFHNOS website (www.ifhnos.org/world). The password to access the presentations is: ifhnos

STRENGTH THROUGH SHARING

D. AYLING

Head and Neck Cancer Survivors' Support Network

The Head and Neck Cancer Survivors' Support Network began over 15 years ago. For many years the support group offered companionship, education, and access to support services. However, the environment of healthcare is changing and support group need to change as well.

New technologies, changing demographics, and restricted funding are creating pressures in healthcare. There are changes in modes of healthcare delivery, and new outcomes focused requirements. Globally, support groups are changing to become advocates and the consumer voice. Their role is to ensure patients perspectives, experiences and needs are presented to decision makers in these changing environments.

Head and neck cancer people have unique experiences, and needs. Many head and neck cancer patients survive their cancers, and have long term damage, which affects many aspects of their lives. Coping physically, mentally and spiritually is ongoing challenge. Articulating those specific needs to government, and healthcare providers is the role of the advocacy group.

The Head and Neck Cancer Survivors' Support Network connects, supports and advocates for patients, their carers, and families throughout New Zealand. Through a variety of social media channels (including a website, Facebook, Twitter and LinkedIn), we connect head and neck cancer people across space and time. Our closed Facebook group brings great support to our members. People share painful disappointments, and moments of great joy. Our people live our values: They are caring, respectful, engaged and informed as they interact with each other.

Although a patient advocacy group is new for Head and Neck Cancer in New Zealand. It is a valuable source of information and fully committed to improved patient treatment and care. By engaging and collaborating with us, decision makers have access to rich data, information and knowledge. Through our Network we can provide insight to decision makers to ensure decisions made are not just good but wise.

Credible, well connected, and accessible advocacy groups are a valuable resource for governments, other funders, and healthcare providers. Advocacy groups should be the first to be consulted when changes are considered. New environments require new ways of working. Connect with, support and respect your patient advocacy group.

A DIETITIAN-DELIVERED HEALTH BEHAVIOUR INTERVENTION IMPROVES NUTRITION OUTCOMES: EATING AS TREATMENT

J. BAUER, A. Baker, B. Britton, C. Wratten, G. Carter, L. Wolfenden, A. Beck, K. McCarter

The University of Newcastle, Callaghan, New South Wales, Australia

Aim: Malnutrition in patients with head and neck cancer (HNC) is common and weight loss ≥ 8% has been independently associated with reduced survival. HNC patients are often noncompliant with nutrition advice. The aim of this study was to evaluate the effectiveness of a dietitian-delivered health behaviour intervention to reduce malnutrition in patients with HNC undergoing radiotherapy: Eating As Treatment (EAT).

Methods: A multi-site randomized stepped-wedge randomised controlled trial of 306 patients was conducted (79% male; median age 58 (18-81) years; cancer site - 57% oropharynx, 22% oral cavity, 10% larynx, 7% nasopharynx, 4% hypopharynx; stage - 64% IV, 18% III, 14% II). EAT is based on established behaviour change counselling methods, including motivational interviewing, cognitive–behavioural therapy, and incorporates clinical practice change theory. It is designed to improve motivation to eat despite a range of barriers (pain, mucositis, nausea, taste changes, appetite loss), and to provide patients with practical behaviour change strategies. EAT was delivered by dietitians during usual consultations. Nutritional status (Patient-Generated Subjective Global Assessment (PG-SGA)) and weight were assessed at baseline, week 8, one month and three months post-radiotherapy.

Results: At three months post-radiotherapy, there was a significant difference in nutritional status (PG-SGA score, $p=0.021$) and weight loss between groups (12.2% control v 10.2 % intervention, $p=0.002$). More patients in the control group experienced ≥ 8% weight loss (47% v 39%, $p=0.004$). Patients in the intervention group were 58% (CI 37-72%) less likely to lose ≥ 8% weight three months post-radiotherapy. There was no difference in dietitian consultation time between groups.

Conclusion: Dietitians successfully delivered a health behaviour intervention that improved nutrition outcomes. This intervention serves as a model for health professionals to improve other outcomes for HNC patients.

Abstracts (cont'd)

"ScreenIT": CONSIDERATIONS FOR CLINICAL IMPLEMENTATION OF A NEW SCREENING MODEL FOR PATIENTS WITH HEAD AND NECK CANCER AND THEIR CARERS UNDERGOING (CHEMO) RADIOTHERAPY (CRT)

B. CARTMILL, L. R. Wall, E. C. Ward, A. J. Hill, E. Isenring, J. Nixon, S. V. Porceddu

The Princess Alexandra Hospital, Brisbane, Australia

Purpose: ScreenIT is an electronic swallowing, nutrition and distress screening tool for patients undergoing CRT for HNC, and their carers. ScreenIT has been found to reliably and correctly identify which patients/carers require intervention from the MDT. This study will report on the barriers and facilitators of implementing ScreenIT into practice using the Consolidated Framework for Implementation Research (CFIR).

Aims:

1. Determine CFIR domain factors which may impact on implementation of ScreenIT tools
2. Develop implementation framework plan to address factors
3. Measure accuracy and efficiency of ScreenIT tools post-implementation.

Methodology:

Participants: Sequential convenience sample of 30 HNC patients who received weekly speech pathology/dietetic intervention during CRT, and their carers, during the implementation period of April-June 2016.

Methods: Using the CFIR model, implementation was planned across 5 domains – intervention, inner and outer setting, individuals, process for implementation.

Accuracy and efficiency of ScreenIT was assessed through determining need for face-to-face intervention, time between screening and intervention, and number of cancelled, unnecessary appointments.

Results: Intervention, inner setting and process related factors were considered most significant in the successful implementation of ScreenIT tools into clinical practice. The majority of screening occasions accurately and efficiently determined face to face intervention need, and resulted in hypothesised 25% cancellation of non-necessary appointments.

Conclusion: Service implementation is a complex process and requires systematic planning to ensure all factors to enable success are addressed. The current project demonstrates the positive potential of using implementation models/frameworks to help facilitate successful uptake of a new in a complex HNC service. The cost savings through streamlining appointments may be redirected into service time points of higher need.

HEAD AND NECK RADIATION: WHAT TASTE DOES IT LEAVE?

S. DEACON, A. Brown, K. Rogl, M. Collins

Townsville Cancer Centre, The Townsville Hospital, Queensland, Australia

Purpose: Radiation treatment to the head and neck can cause acute and late toxicities which impact patients' quality of life (QOL). This prospective longitudinal study aimed to analyse the correlation between radiation dose delivered, the toxicities experienced and the patients' perceptions on their quality of life.

Methodology: Participants completed the University of Washington Quality of Life Questionnaire (UW-QOLv4) fortnightly during treatment and at 1, 3, 6 and 12 months post treatment. Diagnostic, staging and demographic data was collected from oncology information management system MOSAIQ. Data was analysed using descriptive statistics.

Results: Data was collected from 129 patients over 5 years from 2009 to 2014. The most common diagnoses were oropharyngeal (27.1%), laryngeal (21.7%), and oral (18.6%). 52.8% had T1 or T2 disease and 73.6% had nodal involvement. Radiation dose ranged from 60Gy to 74.5Gy. The majority of participants (62%) received 3D conformal radiotherapy. Overall QOL across all groups reached its lowest point at week six of treatment, progressively returning to the same QOL experienced at baseline by 12 month follow up. Key findings for taste QOL showed an immediate drop by week two of treatment which was more pronounced in the oral and oropharngeal groups. Taste QOL was poorest at week six of treatment, with the oropharyngeal group reporting the lowest taste-related QOL. By 12 month follow up taste QOL was comparable for oral, oropharngeal and laryngeal groups.

Conclusion: It is hoped that a more holistic understanding of head and neck patients' experiences will be gained through this knowledge of the impact of toxicities on quality of life. It is anticipated that this information can guide clinicians in discussing the impacts of treatment with patients.

Abstracts (cont'd)

MECHANISMS OF AXONAL DYSFUNCTION UNDERLYING SURGICAL NERVE INJURY

T. J. EVISTON, J. R. Clark, A. V. Krishnan

Prince of Wales Clinical School, Faculty of Medicine, UNSW, Sydney, NSW, Australia

Purpose: Surgical nerve injury has traditionally been viewed as being the direct result of anatomical disruption. Recent neurobiology evidence has demonstrated the pathophysiology of non-transection injury to be more attributable to the activation of pathways of cell degeneration/death than to structural injury. This study reviews contemporary neurobiology evidence and contextualises this to understanding surgical nerve injury for head and neck cancer patients.

Methodology: 24 patients with Wallerian degeneration were studied using the translational application of threshold tracking and paired pulse techniques. The findings are integrated with biological data recently elucidated by neuroscience groups to generate a framework of the underlying pathophysiology of surgically induced nerve injury.

Results: The biological evidence cataloguing the stereotyped degenerative pathways activated by trauma is considerable. NAD metabolism, mitochondrial permebealisation and altered calcium homeostasis with resultant protease activation are at the core of these responses. In-situ findings demonstrating altered channel characteristics and global alterations in strength-duration properties support this pattern of events.

Conclusion: The identification and advancement of the understanding of axonal responses to physical injury lay the groundwork for new therapeutic neuroprotective strategies which offset and prevent surgical nerve injury.

Conflict of Interest Declaration: Consultant, Medtronic Inc.

DESIGNING AND IMPLEMENTING AN INNOVATIVE MODEL OF CARE FOR NUTRITIONAL MANAGEMENT OF PATIENTS WITH HEAD AND NECK CANCER – PRE-IMPLEMENTATION PHASE FINDINGS

M. FINDLAY, N. Rankin, T. Shaw, M. Boyer, C. Milross, P. Beale, J. Coll, J. Bauer

Cancer Services, Royal Prince Alfred Hospital, Sydney Local Health District, NSW, Australia

Aims: Malnutrition is prevalent in patients with head and neck cancer (HNC) impacting on outcomes. Despite publication of evidence-based nutrition guidelines (EBGs), significant evidence-practice gaps exist. This project aims to implement and evaluate a best-practice dietetic model of care (MOC). Through integration with the multidisciplinary team (MDT), the MOC will use a patient-centred approach to minimise the detrimental sequelae of malnutrition.

Methods: A mixed methods, pre-post study design will inform the new MOC to be implemented and evaluate outcomes of interest during pre-implementation and post-implementation analysis. Qualitative interviews were conducted with patients, carers and health professionals to identify barriers and incentives to change. Medical record audit has established baseline adherence to best practice recommendations and clinical parameters.

Results: Thirty interviews were conducted with consumers (n=11) and health professionals (n=19), revealing barriers and enablers to best-practice nutrition care at the individual, team and system levels. Clinical audit (n=98) combined with barriers and enablers analysis revealed nutrition care is focussed on reactive rather than proactive management of those with greatest need. Reasons include lack of familiarity with EBGs, dietetic resource and infrastructure limitations and lack of awareness of the necessity for intensive nutrition care. Forty-five per cent of unplanned admissions were due to nutrition-related morbidity for which economic evaluation revealed significant system-level impact.

Conclusions: This systematic approach to effective knowledge translation provides a comprehensive framework to develop a patient-centred MOC that addresses the concerns of the clinical team. Evidence gathered in the pre-implementation phase provides justification for translation of an evidence-based MOC to improve patient outcomes and may be transferrable to other tumour streams and other health conditions.

CONSENSUS REVIEW OF OPTIMAL PERIOPERATIVE CARE IN MAJOR HEAD AND NECK SURGERY WITH FREE FLAP RECONSTRUCTION – MULTIDISCIPLINARY APPROACHES TO ENHANCED RECOVERY AFTER SURGERY: A FOCUS ON NUTRITION CARE RECOMMENDATIONS

J. C. Dort, G. Farwell, **M. FINDLAY**, G. Huber, P. Kerr, M. Shea-Budgell, C. Simon, J. Uppington, D. Zygun, O. Ljungqvist, J. Harris

Royal Prince Alfred Hospital, NSW, Australia

Background: Head and neck cancers often require complex, multidisciplinary and labour intensive surgery, especially when free flap reconstruction is required. Enhanced recovery is therefore important and can be achieved by implementing

Abstracts (cont'd)

evidence-based perioperative interventions. Enhanced Recovery After Surgery (ERAS®) guidelines have shown dramatic improvements in perioperative care in a variety of surgical disciplines. This review provides a consensus-based ERAS® protocol for optimal perioperative management of patients undergoing head and neck surgery with free flap reconstruction.

Methods: A systematic review was conducted for each topic. The final selection of literature included meta-analyses and systematic reviews as well as randomized controlled trials where available. If absent, lower level studies were considered. An international panel of experts in major head and neck surgery, anesthesiology, critical care and nutrition reviewed and assessed the literature for quality and developed recommendations for each topic according to the internationally recognised GRADE system. All recommendations were graded following a consensus discussion among the expert panel.

Results: Consensus-based recommendations for best perioperative care were developed for a total of 17 unique ERAS® items. This presentation will focus on perioperative nutritional care ERAS® protocol elements including reduced fasting time, avoidance of dehydration and carbohydrate loading preoperatively and postoperative nutrition management.

Conclusions: Implementation of these recommendations is expected to result in enhanced patient well-being, reduced complications and less morbidity following head and neck surgery with free flap reconstruction. Enhanced recovery, as shown in other surgical domains, will also likely reduce the duration of hospital stay and overall costs of care. The systematic approach demonstrated in this presentation will lead to transformative improvements in the delivery of head and neck cancer care.

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Abstracts (cont'd)

FACTORS IMPACTING SELF-REPORTED UPPER LIMB AND NECK FUNCTION FOLLOWING NECK DISSECTION

E. M. GANE, S. M. McPhail, A. L. Hatton, B. Panizza, S. P. O'Leary

The University of Queensland, Brisbane, Queensland, Australia

Purpose: This study examined self-reported function of the upper limb and neck separately in patients within five years of neck dissection (ND). Furthermore, the relationship between function of these regions and other clinically relevant factors was explored.

Methodology: 129 individuals (71% male) who previously underwent ND (median ~3 years post-surgery) at two tertiary hospitals in Brisbane, Australia, participated. Self-reported measures of upper limb (Quick Disabilities of the Arm Shoulder and Hand, QuickDASH) and neck (Neck Disability Index, NDI) function, pain (Visual Analogue Scale; Self-assessed Leeds Assessment of Neuropathic Signs and Symptoms, SLANSS), self-efficacy (General Self-Efficacy Scale, GSES), and clinical/treatment factors were recorded. Generalised linear modelling was used to investigate the relation between self –reported function and the other variables.

Results: The median (Q1, Q3) scores for the QuickDASH and the NDI were 14 (5, 32) and 14 (6, 28), respectively (0 = no disability; 100 = total disability). Significant associations were found between the QuickDASH and age at surgery ($p = 0.013$); GSES ($p = 0.001$); shoulder pain ($p < 0.001$); and SLANSS ($p = 0.007$). Similarly for the NDI, GSES ($p < 0.001$); shoulder pain ($p = 0.011$); SLANSS ($p < 0.001$); and neck pain ($p < 0.001$) were significantly associated. Type of ND and time since surgery were not associated with either functional outcome.

Conclusion: Neck as well as upper limb dysfunction and pain can present in patients following ND. Clinicians should consider the neck as well as the shoulder when providing post-operative care and consider using the QuickDASH and NDI to quantify dysfunction.

RESTORATION OF EYE CLOSURE IN FACIAL PARALYSIS USING IMPLANTABLE ELECTROMAGNETIC ACTUATOR

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Purpose: The Bionic Lid Implant for Natural Closure (BLINC) project aims at creating an active eye closure that is fast, complete and synchronised with the contralateral eye.

Methods: A solenoid actuator is applied to a sling that tensions the eyelids for creating closure. It exploits the successes of lid loading in that it uses a simple technology with minimum parts and simple operation. The sling concept is borrowed from temporalis muscle transposition technique that is known to create effective eye closure. It is shown to create closure by applying 627 (± 128) mN force on the sling with a 6 mm lateral excursion. A solenoid of implantable size was tested for achieving these parameters. After successful computer modelling of the device animal trials were conducted using rabbit and then sheep heads. With subsequent modifications the device was finally tested in human cadavers.

Results: A transcutaneous radio-frequency operating inductive link powers the device for long periods of operation. The actuator is capable of generating the target closure force over a duration close to normal blink period (80ms) with a size and shape that is adapted to the lateral orbit based on existing anatomical data. It is capable of activating at normal average blink rate of 16 (± 10) blinks per minute with a power transfer of about 200 mW over the inductive link. In using magnetic fields movement occurs without physical contact of the moving parts, which enables creating a hermetically sealed device that is biocompatible. Complete eye closure was achieved in both animal trials and the cadaver.

Conclusion: The solenoid actuator is a feasible option for restoring eyelid closure in patients with lagophthalmos.

Abstracts (cont'd)

MANDIBULAR CONDYLE DISLOCATION AFTER OSTEOCUTANEOUS FREE FLAP RECONSTRUCTION OF SEGMENTAL MANDIBULECTOMY DEFECTS: 10-YEAR REVIEW OF FUNCTIONAL OUTCOMES

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Purpose: To analyze factors that may increase the rate of postoperative mandibular condyle dislocation after osteocutaneous free flap reconstruction of segmental mandibulectomy defects.

Methodology: A retrospective review of the clinical and radiological data of all patients who underwent osteocutaneous free flap reconstruction for segmental mandibulectomy defects at a tertiary referral academic medical center from January 2006 to January 2016 was conducted. Patients were excluded if there was less than 6 months follow up, absence of imaging after 100 postoperative days, prior TMJ surgery, preoperative mandibular condyle dislocation, concomitant condyle resection, or subsequent osteocutaneous free flap reconstruction. Included patients were separated into 2 groups based on condyle dislocation and were compared according to age, gender, pathology requiring free flap, defect length, defect location, free flap type, amount of closing ostectomies, postoperative dentition status, maxillomandibular fixation, radiation therapy, and coronoidectomy.

Results: Seventy-six patients (31 females, 45 males) who were reconstructed with fibula (n=73) or scapula (n=3) osteocutaneous free flaps met criteria for analysis. Mandibular condyle dislocation occurred in 9 patients (11.8%) and was confirmed on panoramic radiography or CT at a mean postoperative day of 86 (range = 10-189). Of the examined variables, the only significant predictor of postoperative condyle dislocation was if the patient underwent coronoidectomy during resection (Fisher's exact test p-value = 0.0129).

Conclusion: Osteocutaneous microvascular free flaps have become the gold standard for reconstruction of segmental mandibulectomy defects, which can create imbalances in mandibular form and function. As coronoidectomy is a significant predictor of postoperative mandibular condyle dislocation, the surgeon should attempt to preserve the coronoid process to avoid this likely underreported postoperative sequela.

HOW DO I DO THAT AGAIN? VODCASTS FOR PATIENTS WITH FEEDING TUBES AND SWALLOWING DIFFICULTIES

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Introduction: Patients undergoing cancer treatment receive a broad range of information from many health professionals which can quickly become overwhelming. Patients and carers find it difficult to process and remember information provided. Web-based educational tools are becoming more widely used as they allow their audience to watch when, where and how they want. This multidisciplinary project developed a series of visual instructional modules (vodcasts) for patients with feeding tubes and/or swallowing difficulties.

Methods: Vodcast topics were determined through clinician, patient and carer focus groups. Patients were asked to describe relevant education received and their level of satisfaction, what gaps existed, and what vodcast topics would be most beneficial for future patients. Vodcasts were designed based on focus group themes, produced by a professional media company and implemented into clinical practice at local and national health services.

Results: Confirmed vodcast topics included: how to administer a syringe bolus via gastrostomy, how to administer gravity bolus via nasogastric tube, administration of medications via feeding tubes, laryngectomy care and thickening fluids. The vodcasts are viewable online via the EviQ website and on USB or DVD. The majority of participants in the pilot phase rated their skills, confidence, self-management of complications and ability to share information with others prior to watching the vodcasts as low and after watching the vodcasts as high. 100% of participants felt they would watch the vodcasts again, show them to a family member/carer and recommend to others. Long-term evaluation is planned for 2017.

Conclusions: Early evidence demonstrates that the vodcasts increase patient safety/confidence, are an adjunct to face-to-face clinician education, provide an avenue for troubleshooting for patients/carers and promote best clinical practice.

Abstracts (cont'd)

AMELOBLASTIC CARCINOMA: A CASE SERIES AND LITERATURE REVIEW

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Ameloblastic carcinoma is a rare malignant lesion with characteristic histologic features and aggressive behaviour that requires more radical surgical resection than simple ameloblastoma. It has poor prognosis. Around one third originate in the maxilla, but most of the cases arise in the mandible. Its histopathological confirmation is difficult to make and needs the exclusion of many differential diagnosis. Three cases of ameloblastic carcinoma from single institution are reported. The mean age of patients was 43.7 years, with a predominance of women. Two cases located in posterior region of the mandible and one involved the maxilla. The most common symptom was swelling, followed by pain, rapid growth, paresthesia, and trismus. Lesions characteristically were evident as ill-defined destructive radiolucencies, with occasional radiopacities. Microscopically it showed a pattern of ameloblastic carcinoma with cytologic features of an increasing nuclear/cytoplastic ratio, nuclear hyperchromatism, and the presence of mitosis. The clinical course was uniformly aggressive with extensive local destruction without regional or distant metastasis. One patient showed multi recurrence after initial surgery. The authors review the literature describing the clinical and histological presentation and the treatment of this rare tumour.

Keywords : ameloblastic carcinoma, clinicopathology, treatment.

HEAD AND NECK CANCER PATIENT EDUCATION AND SUPPORT NEEDS – A SURVEY OF PATIENTS AND CLINICIANS

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Purpose: Providing tailored head and neck cancer (HNC) information to patients before, during and after treatment is important but challenging. We aimed to understand: (1) the experience, unmet information needs and survivorship concerns of patients with HNC; and, (2) the clinician perspective on how to improve HNC information resources.

Methodology: Outpatients attending follow-up appointments after HNC treatment at four institutions were invited to complete a paper-based, custom survey (28 questions). Members of the Australian & New Zealand Head and Neck Cancer Society and the Australian Society of Otolaryngology Head and Neck Surgeons were invited to complete an online clinician survey (14 questions).

Results: 597 patients and 112 clinicians participated. Most clinicians (85%) used written information for patient education. Most respondents were satisfied with the comprehensibility (70% of patients & 79% of clinicians) and quality (72% of clinicians) of written information. Content that was felt to be well addressed included details of the cancer (76% of patients and 40% of clinicians) and treatment options (77% of patients & 55% of clinicians). Survivorship issues such as coping with psychological distress, anxiety, appearance and psychosexual health were felt to be poorly covered by conventional written information. Clinicians identified language barriers (51%) and time constraints (58%) to be obstacles to information provision. Most patients (75%) and clinicians (79%) preferred information in multiple formats, although 37% of patients chose one-on-one clinician consultations as their first preference.

Conclusion: HNC patients and clinicians prefer information resources in multiple media formats when navigating through HNC diagnosis, treatment and survivorship. A website may be best-suited to address their complex information needs but must be designed to support the verbal information provided during clinical consultations.

LYMPHOEDEMA AND THE IMPACT ON SWALLOW FUNCTION

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Purpose: Head and neck lymphoedema may contribute to long-term dysphagia in head and neck cancer (HNC) patients. However, the extent of this impact is unknown.

Methodology: Thirty patients with HNC who were one-to-three years post definitive, postoperative or chemoradiation were prospectively recruited. Internal lymphoedema was assessed via endoscopy and rated using Patterson's Scale. External lymphoedema was assessed via the ALOHA. Aspiration status was assessed via fiberoptic endoscopic evaluation of swallowing (FEES) and rated using the Penetration-Aspiration Scale (PAS). Current diet status was rated using the Functional Oral Intake Scale (FOIS). Correlations were calculated with Spearman's rho.

Results: Patients were predominately male (76%) and had oropharyngeal tumours (62%). The majority were treated with chemoradiation (67%) and assessed a median of 16

Abstracts (cont'd)

months post treatment. Lymphoedema was observed in all patients. Combined internal and external lymphoedema was observed in 57% of patients; whilst 43% had internal lymphoedema only. Internal lymphoedema was moderate-to-severe in 71% of patients. Laryngeal penetration or aspiration of thin fluids was observed in 38% and 19% required a modified diet. Correlations revealed significant moderate associations between penetration/aspiration and the presence of internal lymphoedema of the aryepiglottic folds (r=.58), true vocal folds (r=.50), false vocal folds (r=.50), anterior commissure (r=.55), and cricopharyngeal prominence (r=.50); and a weak association with lymphoedema of the valleculae (r=.36). Lymphoedema of the epiglottis had a significant but weak correlation (r=.44) with functional diet status. There was no correlation between the presence of external lymphoedema and either functional diet or penetration/aspiration.

Conclusion: A high prevalence of persistent lymphoedema is demonstrated in this study. Internal lymphoedema at specific anatomical sites may contribute to aspiration risk in HNC patients.

THE GENOMIC MUTATIONAL LANDSCAPE OF SALIVARY DUCT CARCINOMA (SDCA) AND POTENTIAL THERAPEUTIC TARGETS

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Introduction: Salivary duct carcinomas (SDCa) are rare highly aggressive primary salivary gland malignancies. Most patients die from distant metastatic disease within three years of diagnosis. There are limited therapeutic options for disseminated disease.

Aim: To evaluate genetic alterations in SDCa in an attempt to identify potential therapeutic targets.

Methods: Somatic mutation analysis was performed on DNA extracted from 16 archival cases of SDCa using the targeted Illumina TruSeq 48 gene Cancer Panel. A bioinformatics approach was used to identify potential actionable genetic alterations and to match these with currently licensed targeted therapies.

Results: 47 potentially deleterious mutations were identified most commonly in TP53, FBXW7, FLT3 and P1K3CA. The four signaling pathways that were implicated in ≥60% patients with at least a single gene variant present were PI3K-Akt (12/16 patients), MAPK (12/16), TP53 (11/16) and Jak-STAT(10/16). Ten out of 16 (63%) patients had potential targets for existing therapies including six patients who were HER2+. Specific mutations with currently available targeted therapies were identified in the remaining patients and include EGFR (p.G721A: Erlotinib), PDGFRA (p. H845Y: Imatinib), PIK3CA (p.H1047R: Everolimus), ERBB2 (p.V842I: Lapatinib) and KIT (p.M541L: Imatinib).

Discussion: The disease specific survival for metastatic SDCa remains poor with conventional therapeutic options. There is a body of evidence supporting the use of trastuzumab for HER2+ SDCa. Within the HER2- group are distinct actionable mutations that may be amenable to currently available targeted therapies. These finding should be evaluated within the context of clinical trials.

Key words: Salivary duct carcinoma, somatic mutation analysis, targeted therapies, HER2, ERBB2, FLT3, P1K3CA, MAPK, P53, Jak-STAT, EGFR, PDGFRA, KIT

TARGETED NEXT-GENERATION SEQUENCING OF ORAL CAVITY CARCINOMAS USING PARAFFIN EMBEDDED TISSUE

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Introduction: Oral squamous carcinomas (OSCC) are a heterogeneous group of malignancies with a diverse range of presentations. Clinical subgroups have been delineated and are of significant interest, particularly the non-smoking non-drinking (NSND) group and human papilloma virus (HPV) related tumours. Genomic characterisation of these clinical subgroups utilising next-generation sequencing techniques is required to understand the genetic progression of oral carcinogenesis and guide us towards more effective treatment of this disease.

Methods: Two separate groups of patients were recruited from the Royal Melbourne Hospital: suitable patients were identified retrospectively from the BioGrid database, and prospectively from new cancer patients presenting between June 2014 and July 2016.

Based on an integrative analysis of the Cancer Genome Atlas (TCGA) Head and Neck Cancer database, a 500kbp targeted custom capture library was designed. Sequencing was performed on archival fresh frozen paraffin embedded (FFPE) tissue for the retrospective group, and on fresh frozen tumour and blood for the prospective group. Bioinformatic analyses were carried out to reduce paraffin related artefact and identify somatic mutations.

Abstracts (cont'd)

Results: 60 patients were recruited to the retrospective group, and 70 patients to the prospective group. Almost no HPV sequences were detected in these patients. Mutation rates were similar across both groups with a high number of mutations in the tumour suppressor genes TP53 and CDKN2A. Mutation were also frequently seen in PI3K, EGFR and several NOTCH pathway members including NOTCH1.

Conclusions: We have sequenced a significant number of OSCCs from patients presenting to our centre. Bioinformatic filtering led to improved sequencing from paraffin embedded tumours and similar mutation rates were seen across both patient cohorts. Findings in specific clinical subgroups will be presented at the meeting.

Conflict of Interest Declaration: This project is supported by Grants from: ANZHNCS Research Foundation, Garnett Passe and Rodney Williams Memorial Foundation, Price Family Foundation and Jack Tindall Bequest.

IMPLANTABLE DOPPLER ULTRASOUND – BALANCING THE HARMS AND BENEFITS FROM THIS TECHNOLOGY

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Background: Many units now adopt the use of implantable doppler ultrasound to monitor the free flap post operatively. The aim of this study is to audit the outcomes of consecutive cases since the introduction of this technology in our head and neck reconstructive unit.

Methods: Hundred and one patients underwent head and neck microvascular reconstructive surgery between July 2014 to June 2015. The information regarding the clinical outcomes were collected prospectively. Implantable Doppler monitoring system (Cook) was used in both the arterial and venous monitoring.

Results: There were fifty one cases of soft tissue only reconstruction and 49 of the cases of bony/ soft tissue reconstruction. The mean age of the patients were 60.9±12.8. The mean time to wire removal were 9.4±2.3 days. The re-exploration rate was 11.9% with no total flap failure. In this series, the sensitivity, specificity, false positive and false negative rates of the implantable Doppler detecting a pedicle related problem were 87.1%, 85.7%, 1.0% and 12.0% respectively. In our experience, the signal loss within the implantable Doppler was helpful in 6% of the cases in detecting early problem with vascular flow. In 11% of the cases, the loss of signal was not caused by lack of patency within the anastomosis. In 3% of patients, the implantable Doppler itself resulted in complications. These included compression of venous pedicle from the sleeve; laceration of the venous pedicle during the wire removal and wire breaking off during removal. There is one case of false positive, where the Doppler continued to give venous signal despite obvious thrombosis within the internal jugular vein (an end-to side pedicle to IJV anastomosis).

Conclusions: Implantable Doppler ultrasound is a good adjunct to post-operative free flap monitoring. There are learning curves associated with the adoption of this technology, therefore the outcomes should be audited with the adoption of this technology.

SWALLOWING FOLLOWING HEAD AND NECK TREATMENT: USING THE CORRECT TOOLS TO MEASURE THE REAL PROBLEM

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There are many choices available to clinicians to aid comprehensive dysphagia management including instrumental and therapeutic tools in addition to patient reported outcome measures. To ensure accuracy of assessment, clinicians should tailor their chosen method to the diagnostic or therapeutic question at hand.

Recent work in the St George Swallow Centre laboratory has revealed the poor reliability of videofluoroscopic swallow study (VFSS) to detect stricture, with only 26% complete agreement between experienced clinicians. Reliance on VFSS alone has a sensitivity of 0.74 and specificity of 0.67. Meaning, dependence on this method alone would have missed 26% of patients with stricture and sent 33% of patients for an unnecessary operative procedure. The clinical reason for the failure of VFSS to accurately detect stricture appears to be most relevant when the patient is unable to swallow a 5-10ml bolus as a single swallow. Discussion regarding factors that may increase the diagnostic accuracy of detecting stricture, in this population, will be discussed as well as recommendations for which patients may warrant further specialist assessment.

Abstracts (cont'd)

CLINICAL EXPERIENCE WITH MICRODACYN® WOUND CARE IN RECALCITRANT WOUNDS OF THE HEAD AND NECK

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Background: Recalcitrant wounds and associated infections are responsible for considerable morbidity, mortality and economic costs. Biocides are an essential measure in wound care management for both inpatients and outpatients. The use of some biocides can cause skin or respiratory diseases in healthcare workers and damage or corrosion to equipment. Frequent use of some agents has led to increasing resistance and loss of efficacy against microbial communities. Consequently there is a need for the development of more effective, safe, and non-cytotoxic topical antimicrobial agents. Microdacyn® is a pH neutral electrolytically activated super oxidized solution, which may have a role in reducing microbial burden and improving wound healing.

Objective: This retrospective cohort study evaluates the efficacy of Microdacyn® wound care in the treatment of recalcitrant wounds of the head and neck.

Results: Twenty-six patients were included in the study cohort; 19 were male and 7 female. Mean age was 69 years (range 29-90 years). Mean duration of treatment was 11.5 days (Range 3-25 days). Wound types included orocutaneous fistulae, peristomal defects, pinna necrosis, an intra-oral defect with exposed mandible, wounds following incision and drainage of abscesses, infected lacerations, infected thigh donor site following split skin graft harvest, pharyngocutaneous fistulae, radiotherapy burns, infected cavity post debridement of partial free flap necrosis, infection/ dehiscence of wound closure sites, and a nasocutaneous fistula. Orocutaneous fistulae were the largest cohort (5/26 wounds). All patients were satisfied with Microdacyn® and no patients reported pain or discomfort. Clinical staff noted a significant improvement in wound healing at a faster than expected rate.

Conclusion: Microdacyn® provides clinicians with a well-tolerated and effective biocide that compliments standard wound care therapy in the treatment of recalcitrant head and neck wounds.

Financial disclosures: This study was supported by a grant from the Garnett Passe and Rodney Williams Foundation.

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Abstracts (cont'd)

THE CURRENT STATUS OF SENTINEL NODE BIOPSY IN CUTANEOUS HEAD AND NECK MALIGNANCIES

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Sentinel node biopsy (SNB) has revolutionised the management of cutaneous malignancies including Melanoma, Merkel cell carcinoma and more recently cutaneous Squamous cell carcinoma. SNB is a simple and eloquent technique but can be challenging in the head and neck. SNB information is vital for staging, management planning and prognosis.

The current status of SNB in cutaneous head and neck malignancies will be discussed with clear indications, technical advise and outcome data presented.

Conflict of Interest Declaration: Clinical advisor to Roche, MSD and Ministry of Health.

PITFALLS IN THE DIAGNOSIS OF THYROID CANCER – A PATHOLOGIST'S PERSPECTIVE

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In spite of advances in imaging and cytopathology, diagnosis of thyroid cancer in patients with multinodular goitre remains challenging. Messages about the biologically indolent nature of many thyroid cancers need to be balanced with the reality that a minority of patients with long standing goitres or asymptomatic solitary thyroid nodules have aggressive forms of thyroid cancer. This case based presentation will demonstrate several pitfalls in the pathologic diagnosis of thyroid cancers of follicular cell origin, and discuss ways in which the risk of misdiagnosis or delayed diagnosis may be reduced.

THE EFFECT OF RURALITY AND REMOTENESS ON HEAD AND NECK CANCER PATIENTS IN THE NORTHERN TERRITORY

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Purpose: There is growing evidence that in rural and remote areas, cancer mortality is higher and time to treat is longer, necessitating different patterns of care.

The aim of this study is to explore the relationship between rurality and remoteness to time to treat, stage of cancer at time of presentation, pattern of care and survival rates.

Methodology: We carried out a retrospective analysis of our Head and Neck cancer database, examining the demographics and clinical characteristics of our head and neck cancer patients.

The Australian Standard Geographical Classification-Remoteness Area (ASGC-RA) system was used to determine the remoteness of the geographical areas of patients at the time of referral. Patients were categorised into 5 remoteness areas (RA):

RA1 – Major Cities of Australia

RA2 – Inner Regional Australia

RA3 – Outer Regional Australia

RA4 – Remote Australia

RA5 – Very Remote Australia

Time to treat, stage of cancer, pattern of care and survival rates were analysed and compared between different ASGC-RA classes.

Results: 160 patients were included in this study. Patients in the RA4 and RA5 categories had the longest time to treat (mean: 60days), more advanced disease (Stage 4) and were more likely to receive palliative care or die before treatment. There was no significant difference in the survival rate between categories (curative treatment).

Conclusion: Rurality and remoteness has a significant impact on the outcome of patients with head and neck cancer. Patients are more likely to present at a later stage of cancer affecting the pattern of care and survival rate.

A PROSPECTIVE COMPARISON OF TIMES TO PRESENTATION, TREATMENT AND SURVIVAL OF RURAL AND URBAN HEAD AND NECK CANCER PATIENTS IN NORTH QUEENSLAND, AUSTRALIA

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Aim: Rural and remote patients experience poorer health outcomes compared to metropolitan patients. This study aims to examine differences between outer regional and remote patients in northern Queensland, Australia, in the times taken to receive various aspects of head and neck cancer management and relation to survival.

Abstracts (cont'd)

Methods: Our study prospectively recruited head and neck cancer patients presenting to three North Queensland regional hospitals from January 2009 to January 2011. Data on demographic and cancer-specific details, comorbidities and timing of presentation to various services were collected using a self-administered questionnaire that included two questions in relation to possible reason for delays to health services. Multivariate linear regression analyses were conducted to assess the effects of various demographic characteristics on time delays. Survival and disease recurrence data were analysed in 2014.

Results: One hundred and fifty-eight patients participated. Rural and remote patients had significantly longer median times between diagnosis and first treatment compared with Regional patients ($P = 0.015$). Indigenous patients had significant delays from diagnosis to first treatment ($P = 0.013$) and visit to first specialist and treatment ($P = 0.031$) compared to non-indigenous patients. Longer median times between symptoms and first treatment was associated with low income ($P = 0.03$) and lower education level ($P = 0.04$). Disease recurrence was higher for Rural and remote patients compared with Regional patients ($P = 0.04$), without significant differences in overall survival. Possible reasons for delays included patient and professional factors.

Conclusion: Significant delays in various aspects of head and neck cancer management were associated with remoteness, indigenous and socioeconomic status, but there was no significant differences in recurrence rates or survival.

THE BURDEN OF NON-MELANOMA SKIN CANCERS IN AUCKLAND, NEW ZEALAND

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Background: The New Zealand Cancer Registry (NZCR) does not require mandatory reporting of non-melanoma skin cancers (NMSC): Basal Cell carcinomas (BCC) and Squamous Cell Carcinomas (SCC) and therefore the clinical burden is unknown. New Zealand (NZ) and Australia have the highest incidence of melanoma in the world and previous work has reported a significant problem with NMSC in NZ although this data has always been limited by lack of compulsory reporting. High risk cSCC and complex BCC are becoming a major surgical issue in the spectrum of Non Melanoma skin cancer.

Method: A retrospective review of all patients that had histology confirmed invasive BCCs and SCCs was made from the Auckland region in 2008.

Results: During this time period, a total of 21236 NMSC were diagnosed amongst 13996 patients. SCC accounted for 5611 lesions (26%) and BCC accounted for 15525 lesions (73%). The Auckland Incidence rates were 425.3/100,000 for SCCs and 1176.7/100,000 for BCCs. The overall incidence rate of NMSC was 1602/100,000 per lesion. The incidence of all NMSC's rose steadily with age and most common site was head and neck.

Conclusion: The absence of NZCR data on NMSC is understandable given the large volume of disease but we believe that high risk cSCC and complex BCCs should be recorded. Our study provides critical information for clinicians and health economists on the scale of the problem.

THE CLINICAL AND PROGNOSTIC CORRELATIONS OF PD-1 AND PD-L1 EXPRESSION IN NASOPHARYNGEAL CARCINOMA (NPC)

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Background/Purpose: Programmed cell-death 1 (PD-1) and programmed cell-death ligand-1 (PDL-1) are immune checkpoint receptors that are being therapeutically targeted in several solid tumours. The aim is to study the incidence and prognostic significance of PD-1 and PDL-1 expression in nasopharyngeal carcinoma (NPC).

Methodology: Tissue microarrays of nasopharyngeal carcinoma were obtained from National Cancer Centre, Singapore and immunohistochemistry for PD-L1 (Ventana SP263 rabbit monoclonal antibody) was performed. The scores were then blinded and independently verified by a pathologist. These results were then independently correlated to clinical and prognostic information.

Results: The tissue microarrays included samples from 59 patients (median: 55 years, M:F 3:1). PDL-1 expression was seen in 48 (81%) cases; of these 25 cases showed PDL-1 expression in more than 50% of the tumour cells. Ten patients developed a recurrence with an overall 5 year survival of 57%. Disease specific mortality was 15%. The presence of high PD-1 expression (50-100%) predicts for worse disease specific survival ($p = 0.043$).

Abstracts (cont'd)

Conclusion: Immunotherapy is emerging as a method of improving survival in cancer. Nasopharyngeal carcinoma shows considerable biological and geographical variation and targeted individualised therapy hopes to improve survival. Our results add to the growing literature that PD-1 and PDL-1 expression have a negative impact on the prognosis of NPC and may serve as important therapeutic targets.

A SELF-REGULATORY INTERVENTION FOR PATIENTS WITH HEAD AND NECK CANCER: PILOT RANDOMIZED TRIAL

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Introduction: Research is yet to determine whether psychological interventions are beneficial for patients with head and neck cancer (HNC). The aim of this study was to investigate whether a brief psychological intervention targeting illness perceptions and coping could improve HNC patient quality of life and psychological wellbeing.

Method: A pilot randomized controlled trial was conducted in which 64 patients with HNC were assigned to receive three sessions with a health psychologist (n = 33) or to standard care (n = 31). All participants completed questionnaires assessing quality of life, psychological distress, illness perceptions, and coping at baseline and again 3 and 6 months later.

Results: Compared to patients who did not receive the intervention, intervention participants had a greater decrease in perceptions of the chronicity (timeline) of the disease, and a greater increase in perceptions of treatment effectiveness, from baseline to 3 month follow-up. Furthermore, intervention participants reported an increase in social quality of life from baseline to 3 months (p = .059), and from baseline to 6 months (p = .012), while standard care participants demonstrated a decrease across these time points.

Conclusions: The results suggest that a brief psychological intervention can improve quality of life in patients with HNC, particularly social quality of life.

Funding statement: This study was funded in part by grants from the Oakley Mental Health Research Foundation and the Maurice and Phyllis Paykel Trust.

VALUE ADDITION OF ULTRASOUND OVER SESTAMIBI SCAN IN DIAGNOSED CASES OF HYPERPARTHYROIDISM

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Aims: To establish the value addition of ultrasound over Sestamibi in cases of hyperparathyroidism.

Methods: This was a retrospective study conducted at a single institution in India. Patients diagnosed with HPT from year 2013 to 2016 were included. Biochemical (Serum Calcium, PTH, Vit D Phosphates) and radiological parameters (MIBI, USG, Methionine PET) were evaluated.

A total of 200 Patients diagnosed with Hyperparathyroidism were studied.

Among them 180 patients (90%) underwent both sestamibi Scan (Tc-99-sestamibi scintigraphy (MIBI) scan) and ultrasound examination and 15 patients (7.5 %) had only sestamibi scan done, 2 patients (1%) underwent Methionine PET (C-11 methionine PET scan) and 3 Patients (1.5 %) had no Radiological imaging done.

Ultrasound Equipment: Siemens 2000 and Siemens X700.

Results: Of the 180 patients (90%) which underwent both sestamibi and USG, Sestamibi was positive in localizing parathyroid nodule in 162 (90%) of cases, and USG was positive in localizing the nodules in 175 patients (97%) cases. Of the localized sestamibi nodules 90%, only 82% were true localization, and 8% were false localization as confirmed by surgical results. Of the localised nodules by Ultrasound (97% cases), 99% were true localization, and 1% were false localization as confirmed by surgery. USG localized the nodules in Sestamibi negative cases (7%) also with USG, additional nodules (one or more) (not shown by Sestamibi) were found in 16% cases.

Conclusion:

1 Ultrasound finds parathyroid nodules in Sestamibi negative or equivocal cases of hyperparathyroidism.

2 Ultrasound finds additional nodules in cases where sestamibi showed only one nodule.

Additional Benefits: USG gives precise localization of nodule and its depth level and anatomical relationship with the important landmarks in the neck. Accurate size of the nodule (s).

Keywords: Hyperparathyroidism, Sestamibi, Ultrasound neck for parathyroid nodules, parathyroid adenoma.

Abstracts (cont'd)

CANCER STEM CELLS IN MODERATELY DIFFERENTIATED ORAL TONGUE SQUAMOUS CELL CARCINOMA EXPRESS COMPONENTS OF THE RENIN-ANGIOTENSIN SYSTEM

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Gillies McIndoe Research Institute

Aim: To investigate the expression of components of the renin-angiotensin system (RAS) by two cancer stem cell (CSC) sub-populations within moderately differentiated oral tongue squamous cell carcinoma (MDOTSCC) that we have recently identified and characterised.

Methods: 3,3-Diaminobenzidine (DAB) immunohistochemical (IHC) staining was employed to investigate the expression of (pro)renin receptor (PRR), angiotensin converting enzyme (ACE), angiotensin II receptor 1 (ATIIR1), and angiotensin II receptor 2 (ATIIR2) in 10 formalin-fixed paraffin-embedded MDOTSCC samples. Selected snap-frozen tumour samples were used for Western Blotting (WB) and NanoString analysis to investigate protein and gene expression of these markers, respectively. Double immunofluorescent (IF) IHC staining of components of the RAS with the embryonic stem cell markers OCT4 or SALL4 was performed to demonstrate their localisation to the CSC sub-populations.

Results: DAB IHC staining demonstrated expression of PRR, ACE, ATIIR1 and ATIIR2 in MDOTSCC samples and this was confirmed by WB and NanoString analysis. IF IHC staining demonstrated localisation of PRR, ATIIR1 and ATIIR2 to both CSC sub-populations within the tumour nests expressing SALL4 and the stroma expressing OCT4; while ACE was localised to the endothelium of the microvessels within the stroma, between the tumour nests.

Conclusions: PRR, ATIIR1 and ATIIR2 were localised to the both CSC sub-populations within MDOTSCC while ACE was localised to the endothelium of the microvessels within the stroma. These novel findings suggest the possibility of targeting the CSC within this tumour by modulating the RAS.

Conflict of Interest Declaration: TI, PFD and STT are inventors of the PCT patent application (No. PCT/NZ2015/050108) Cancer Diagnosis and Therapy.

MY SOLID RUBBERY NECK – LYMPH TAPING FOR HEAD AND NECK LYMPHOEDEMA

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Head and neck lymphoedema (HNL) affects patients treated with head and neck lymphadenectomy and or radiation. Left untreated HNL becomes fibrotic with symptoms that are often irreversible including loss of saliva, difficulty swallowing, discomfort and hoarse voice (1). HNL differs from lymphoedema that affects other parts of the body and calls for an adaptation in lymphoedema management (1). This paper reports a case study using photographs of one man (David), with HNL following surgery for metastatic squamous cell carcinoma (SCC) of the right tonsil. He had received no previous treatment and the lymphoedema was non-pitting and fibrotic. David had diffuse bilateral swelling in the submandibular, submental regions and above the scar. His symptoms included, difficulty swallowing, hoarse voice, loss of range of movement in the neck, and extremely sensitive tongue and teeth. Evaluation outcomes include symptom relief and photographic comparison. David's treatment involved six sessions of manual lymphatic drainage massage and application of lymph taping over two weeks. He continued for four months on a home regime of self-massage and application of the tape. His symptoms resolved and he has remained well. The case study provides before and after photos to inform the explanation of the treatment.

1. Smith BG, Lewin JS. The role of lymphedema management in head and neck cancer. Current opinion in otolaryngology & head and neck surgery. 2010 Jun; 18(3):153 Available from doi:10.1097/MOO.0b013e32833aac21 [Accessed 14th May 2016]

Abstracts (cont'd)

SALIVARY EXTRACELLULAR VESICLES CONTAINING NON-CODING RNA AS A SCREENING TOOL FOR THE EARLY RECOGNITION OF MALIGNANT CHANGE IN ORAL CAVITY SQUAMOUS CELL CARCINOMA

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Background: MicroRNAs are small non-coding RNAs involved in biological processes and are dysregulated in oral cancer. Extracellular vesicles (EV), a potential source of microRNA, are found in biofluids including saliva.

Purpose: To develop a simple, clinical risk assessment tool based upon microRNA contained in extracellular vesicles found in saliva.

Methods: EV were isolated from clinically collected salivary swirl (CCSS) samples using a commercial kit and an inexpensive developed polyethylene glycol (PEG)-based protocol. Saliva and CCSS sample EV were examined using transmission electron microscopy (TEM). RNA from EV preparations with and without exposure to RNAase prior to extraction were compared. CCSS samples were also exposed to daily temperature shifts or variable storage temperatures over seven days prior to RNA extraction. RNA content was measured and microRNA hsa-mir-24 content assessed using RT-qPCR.

Results: A PEG- based method is effective for EV concentration before RNA extraction. EV can be visualized in CCSS samples using TEM. An adequate quantity of microRNA for RT-qPCR analysis is extractable from CCSS samples despite exposure to conditions under which degradation of RNA would be expected. RNA yield from clinical samples varies from individual to individual.

Conclusion: TEM confirmed that EVs can be isolated using an inexpensive PEG protocol. Assessable microRNA can be isolated from CCSS samples. The CCSS method is a simple, rapid means to obtain patient samples. In the future analyses of microRNA content in CCSS samples from patients with potentially malignant mucosal conditions and oral cavity SCC will be compared to patients with clinically normal oral mucosa.

A FIRST LOOK AT THE GENOMIC LANDSCAPE OF NON-METASTATIC CUTANEOUS SQUAMOUS CELL CARCINOMA

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Purpose: Most Australians will be diagnosed with skin cancer during their lifetime. cSCC is the second most prevalent skin cancer, and most common lethal malignancy worldwide, with the head and neck a common site resulting in significant morbidity. This study sought to identify genomic alterations in a small cohort of patients with non-metastatic, high risk cSCC, to propose a disease-specific pathway of molecular pathogenesis and to establish a base for future research that will enable genomic characterization of the metastatic potential of tumors and govern treatment decisions.

Methodology: We performed targeted sequencing of cancer-associated genes on DNA from formalin fixed and paraffin embedded primary tumor tissues (and matched normal tissues) from 9 patients with non-metastatic cSCC from the head and neck. SIFT and PolyPhen algorithms were used for significance determination. Findings were compared with literature, including alterations in metastatic cSCC and physiologically normal skin.

Results: Results were consistent with predictions and prior findings. We identified alterations in 43 cancer-associated genes. Samples showed variability in number and type of genes affected. TP53 was mutated in all samples, APC, ATM, ERBB4, GNAQ, PTEN and VHL, were altered in over half the samples. APC, TP53 and ABL1 were highest contributors to total mutation load. The majority of mutated genes affect cell survival processes, specifically RAS; PI3K and cycle/apoptosis pathways.

Conclusions: We have provided an initial insight into the genomic landscape of non-metastatic cutaneous squamous cell carcinoma. These findings provide a point of comparison for future genomic analysis of metastatic cSCC.

AUSTRALIAN AND NEW ZEALAND
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Poster Abstracts

Poster Abstracts

Listed in alphabetical order according to Presenter's surname. Presenters appear in bold.

ORAL CANCER PROFILE: GGS MC, FARIDKOT, EXPERIENCE AT A TERTIARY HEALTH CARE CENTER IN PUNJAB

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Introduction: Head and neck cancers constitute to about 5–50% of total cancers in the world. (1) It is the sixth most common cancer in the world. (3) Asian countries like Sri Lanka, India, Pakistan and Bangladesh where tobacco chewing is a common practice have a very high incidence of oral cancer, oral cancer is the most common cancer in men in India. (4)

Oral cancer forms a major public health issue in India due to its rising incidence, especially in women and younger age group. Smoking, tobacco/quid chewing, and alcohol consumption are widely considered to be major preventable risk factors.

The purpose of our study was to determine, its incidence according to age and sex, site distribution, frequency of risk factors involved and clinical stage at presentation.

Methods: A total of 100 Patients in age group 21 to 70 years, irrespective of gender, with a proven malignancy confined to the oral cavity only were enrolled in the study.

Patients were analyzed for the age and sex distribution, tumour staging, location and metastasis.

Patients previously operated, with distant metastasis, already irradiated, or without written consent were not included in the study.

Results: Oral cavity cancers are common in males.

Most prevalent in age group of 51-60 years.

Oral tongue is the most common site.

Betel nut chewing is the most significant risk factor.

T1 and T2 is the most the most common primary T stage.

Neck metastasis occurs most commonly at N2 stage.

Conclusion: Oral cancers presents at advanced stage and advanced age, which is mdue to lack of awareness and early self reporting by patient. It is very important to actively screen the patients with risk factors, and diagnose and treat oral cavity lesions as soon as possible. Preventive strategies must be designed in order to lessen the burden of Oral cancers.

Primary prevention-risk factor modification.

Secondary prevention-early diagnosis and treatment.

Tertiary prevention-improved outcomes and prevention of recurrences.

EVALUATING CERVICAL LYMPH NODE METASTASIS: A COMPARATIVE STUDY OF CT SCAN AND PHYSICAL EXAMINATION WITH CYTOLOGICAL RESULTS

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Introduction: The most important prognostic factor in squamous cell carcinoma of the head and neck is the presence or absence of clinically involved neck nodes. The presence of metastases in a lymph node is said to reduce the 5-years survival rate by about 50%. The appropriate diagnosis of the presence of metastatic node is very important for the management of squamous cell carcinoma of the head and neck. The aim of this work was to conduct a comparative study of CT scanning and Physical examination with Cytological evaluation, in detecting the cervical lymph nodes metastasis in known cases of squamous cell carcinoma in the head and neck.

Methods: This study was carried out on 60 consecutive patients with a histologically proven non-cutaneous Head and Neck Squamous Cell Carcinoma (HNSCC). Every patient was subjected to clinical examination for cervical lymph nodes, CT scan on the neck with intravenous contrast and were compared with results of Cytological evaluation.

Results: Clinical palpation for cervical lymph nodes had a sensitivity of 82.9%, specificity 69.2%, Positive predictive value 90.6% and Negative predictive value 52.9% The sensitivity of CT scan in detection of cervical lymph node metastasis in our study is 97.8%, the specificity is 84.6%, the positive predictive value is 95.8%, while negative predictive value is 91.6%. CT scan was better than clinical palpation.

Conclusion: CT increase the accuracy of lymph node metastasis detection. CT is better than clinical palpation.

Poster Abstracts (cont'd)

EARLY FEEDING VIA A PROPHYLACTIC GASTROSTOMY – PRELIMINARY FINDINGS FROM A RANDOMISED CONTROLLED TRIAL IN HIGH RISK HEAD AND NECK MUCOSAL SCC (HNSCC) PATIENTS UNDERGOING CHEMORADIOTHERAPY

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Patients with HNSCC are at high risk of malnutrition and dysphagia, and enteral tube feeding is often required, however significant weight loss is still seen despite prophylactic gastrostomy placement. The aim of this study was to improve nutrition outcomes utilising an early feeding approach via the prophylactic gastrostomy.

Patients were eligible if they were identified for a prophylactic gastrostomy and were randomly allocated to the intervention (n=61) or usual care (n=70). The intervention recommended supplementary feeding via the gastrostomy immediately compared to usual care where feeding was commenced when clinically indicated. Key outcome measures at three months post treatment included percentage weight loss, body composition, nutritional status, and chemotherapy/radiotherapy compliance.

Patients were predominantly male (88%), mean age 60.5, with oropharyngeal tumours (76%), stage IV disease (86%), and receiving chemoradiotherapy (82%). There were no significant differences for demographics, clinical characteristics or baseline nutritional status. Univariate analysis has shown mean percentage weight loss was -10.8% in each group. Body composition and nutritional status were also not significantly different. Both groups completed 100% of planned radiotherapy and 87% of planned chemotherapy cycles. Frequency of radiotherapy replanning was similar in each group (21% vs 19%) as were any breaks in treatment (14% vs 16%). Only 28/61 (45%) patients adhered to the intervention (consuming >75% of the prescribed supplements), however sub-analysis of this adherent group versus standard care, found no statistical differences.

The early nutrition intervention has not been an effective way of improving nutritional outcomes. Subgroup analysis is ongoing but further research is required to explore patient barriers to nutrition interventions to develop alternative multidisciplinary models of care to improve adherence and optimise outcomes.

VALIDATION OF A PROTOCOL TO PREDICT PROACTIVE GASTROSTOMY TUBE PLACEMENT IN PATIENTS WITH HEAD AND NECK CANCER RECEIVING HELICAL-INTENSITY MODULATED RADIOTHERAPY

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Purpose: The "RBWH Swallowing and Nutrition Management Guidelines for Patients with Head and Neck Cancer (HNC)" identifies patients at "high risk" of dysphagia and nutrition decline and recommends proactive feeding tube placement. The updated protocol was re-validated in 2010-2011. This study aimed to validate the protocol in a new cohort since the introduction of helical-intensity modulated radiotherapy (H-IMRT).

Methodology: Patients were eligible if they had curative intent treatment of a HNC between July 2013 and June 2014, and were seen by the Dietitian. Data was prospectively collected during standard dietetic care. Patients were confirmed as "high risk" if they experienced significant weight loss (≥10% baseline body weight), or used any enteral feeding tube for >4 weeks and then compared to the protocol risk classification.

Results: The final sample included 315 patients (76% male, mean age 65.1) with primarily oral cavity/oropharyngeal tumours (51%). Compared to the previous validation cohort, there were no significant differences in patient characteristics, other than nodal disease (p=0.006) and the proportion treated with H-IMRT (61% vs 28%, p<0.001). Adherence to the guideline was 84%. Sensitivity of the protocol to correctly predict need for proactive gastrostomy was 73% (unchanged), specificity 86% (a decrease from 96%), positive predictive value 71% and negative predictive value 87%.

Conclusion: Whilst remaining valid, a decrease in specificity of the protocol suggests over-estimation of the need for proactive tubes. This is possibly due to the increase in proportion of patients who receive H-IMRT which results in better sparing of normal tissues and structures compared with 3D Conformal radiotherapy. Further modification of the protocol is recommended to optimise "high risk" identification whilst minimising the risk of unnecessary tube placement.

Poster Abstracts (cont'd)

THE USE OF PORCINE SMALL INTESTINAL SUBMUCOSA (PSIS) IN THE RECONSTRUCTION OF FULL THICKNESS SCALP DEFECTS

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Full thickness scalp defects can pose a challenge for the reconstructing surgeon. When these defects are small, primary closure or rotational flaps are usually the preferred option for closure. Local advancement flaps, Skin grafts and free flaps are all successfully used to close larger defects.

We present our experience with the use of Biodesign (Cook Biomedical, West Lafayette, IN,) in the reconstruction of full thickness scalp defects. Biodesign is an acellular, freeze-dried resorbable biomaterial derived from the extracellular matrix of porcine small intestinal submucosa {PSIS}. The use of PSIS materials have been described for repairs of many defects including abdominal hernias, gynecologic and urologic procedures, Dural repair and many ENT procedures like tympanoplasty and nasal septal perforation. To our knowledge the use of PSIS material has not been described for the use on full thickness scalp defects.

Some of the advantages include avoidance of donor site morbidity, quick healing, and ease of use. We aim to raise awareness of this material as another viable option for closure of the difficult defect.

VALIDATION OF THE CLINICIAN-GRADED FACIAL FUNCTION SCALE (EFACE) FOR THE ASSESSMENT OF FACIAL PALSY

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Chris O'Brien Lifehouse, New South Wales, Australia

Purpose: Facial palsy is a common condition affecting patients undergoing head and neck cancer treatment. However, the ideal way to grade facial palsy remains controversial. The clinician-graded facial function scale (the eFACE) has recently emerged as a facial grading tool that provides greater sensitivity when assessing regional or incomplete paralysis, due to its zonal characteristics. We perform the first comprehensive validation of the eFACE.

Methodology: Video recordings of 83 facial palsy patients were graded. Grading was performed in two sittings by three individuals with varying degrees of experience in assessing facial palsy. Inter-observer reliability, intra-observer reliability, internal consistency, sensitivity to change, administration time, and agreement with the House-Brackmann, Sunnybrook and Sydney facial grading systems were assessed.

Results: The 83 patients were aged 8 to 85 years, and 65 were female. Causes of facial palsy were Bell's Palsy (46 patients), tumour (27), trauma (4), congenital (4) and other. The eFACE was found to be a valid assessment tool for facial paralysis. Moderate to high correlation existed between the eFACE, House-Brackmann, Sunnybrook and Sydney systems. Intra-observer reliability, inter-observer reliability and sensitivity to change were also clinically acceptable. The average total eFACE score was 216.5/300 (standard error (SE) 2.0, range 75-295), static score 72.9/100 (SE 0.9, range 8-100), dynamic score 62.2 (SE 1.1, range 3-100) and synkinesis score 81.3 (SE 1.2, range 9-100). The mean time to administer the tool was 1.59 minutes.

Conclusion: The eFACE is a valid facial assessment tool with high reliability, internal validity, and correlation with the House-Brackmann, Sunnybrook and Sydney systems. It is also convenient in time to administer.

A RETROSPECTIVE ANALYSIS OF 48 HEAD AND NECK SURGICAL PATIENTS WITH OSSEO INTEGRATED (OI) IMPLANT INSERTION FOR PROSTHESIS AND THE SUCCESS RATE OF OI INTEGRATION

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Introduction: A retrospective analysis, of Osseo integrated (OI) Implant insertion, in 48 consecutive Head and Neck Cancer patients across two tertiary centres and the success rate of implantation.

Method: The study included a total of 120 dental OI implants inserted, in 48 patients, between July 2009 and February 2016. OI's were inserted into either native or graft bone depending on the type of surgical resection and reconstruction. OI integration was classified by successful insertion not requiring removal due to failure of implant longevity. Calculations were performed using Stata/MP version 13.0 for Mac (StataCorp LP). Clinical and demographic features are presented as medians (interquartile range) and means (± standard deviation) for non-parametric and parametric data respectively. The Kaplan–Meier method was used to estimate the survival of implants following placement.

Results: Seven of the 48 patients experienced implant failure (18 implants in total), of these 3 patients underwent re-implantation with one successful procedure. The 38 patients that received radiotherapy experienced 6 of the failed implants, compared with 1 failure in those not receiving radiotherapy, this result was not significant ($p = 0.7823$). A summary of the implant survival rates using the

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Kaplan–Meier method estimated survival free of failure at 6, 12, 24 and 54 months was 95.7%, 90.9%, 87.3% and 76.3%, respectively. The use of a free fibula maxillary graft vs native maxilla had no significant difference on graft survival (p=0.9028). Similarly, the use of a free fibula mandibular graft vs native mandible had no significant difference on graft survival (p=0.1406).

Conclusion: OI implantation at time of resection has supportive trends for successful implantation which will allow for a reduction in time to prosthesis and improved cosmetic, functional use and longevity of the prosthesis for the patient.

NERVE DYSFUNCTION FOLLOWING NERVE REGENERATION

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Purpose: Nerve injury is a common cause of ongoing survivor morbidity for head and neck cancer patients. This study uses the novel application of validated, paired-pulse neurophysiology techniques to demonstrate the underlying biophysical changes underpinning axonal dysfunction following nerve regeneration. This acts as a biomarker for disease, informs pathophysiological understanding and guides future therapeutic strategies.

Methodology: 31 patients with chronic facial nerve injury were studied using novel and advanced neurophysiology techniques, including axonal threshold tracking. Specific disease groups included surgical nerve injury, tumour associated facial palsy, viral associate facial palsy and those who had undergone reanimation procedures (nerve grafts).

Results: Core functional changes in axonal physiology reflect abnormal hyperpolarization, altered sodium channel activity and altered strength/duration properties. This pattern is stereotyped across a range of nerve injury groups.

Conclusion: This is the first study to elucidate in-situ axonal pathophysiology changes in the human facial nerve. This human data represents an important step to targeting therapies that improve baseline nerve function in those with ongoing symptoms due to nerve injury.

SARCOPENIA IS THE NEW SMOKING: WHAT EVERY CANCER CLINICIAN NEEDS TO KNOW ABOUT COMPUTED-TOMOGRAPHY DEFINED SKELETAL MUSCLE WASTING

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Aims: Malnutrition is prevalent in patients with head and neck cancer (HNC) with a combination of involuntary weight loss and skeletal muscle depletion associated with significant morbidity and mortality regardless of overall body weight. Weight loss is often used as a proxy measure of nutritional status, however in isolation, does not accurately reflect the risk of poor outcome. The use of computed tomography (CT) has emerged as the international gold standard of body composition analysis at the tissue level. This study aims to yield greater understanding of the influence change in body composition, particularly CT-defined sarcopenia, has on outcomes in addition to overall weight loss for patients with HNC.

Methods: Tissue density data derived from pre and 3 month post treatment CT imaging taken as routine care for patients undergoing radiotherapy +/- other treatment modalities of curative intent between 2013 and 2014 in a major tertiary HNC treatment centre in Sydney, Australia were analyzed. Muscle tissue was quantified (-29 to +150 Hounsfield Units (HU) with adipose tissue types quantified as visceral (-150 to -50 HU), intermuscular (-190 to -30 HU) and subcutaneous (-190 to -30 HU) using Slice-O-Matic software (v.5.0; Tomovision, Montreal, Quebec, Canada). Muscle surface area was normalized for height (m2) and reported as lumbar SMI (cm2/m2) with mean Muscle Attenuation (MA) reported for the entire muscle area at the third lumbar vertebra then compared with published threshold values. Sarcopenia was defined as SMI <41 cm2/m2 for females and <43 cm2/m2 (underweight, healthy weight range) or <53 cm2/m2 (overweight or obese) for males, stratified by Body Mass Index (BMI) category in accordance with cut-off values published by Baracos et al. Differences between pre and post variables were analyzed using paired-t tests.

Results: Pre and post CT images were available for 79 patients and 60 patients respectively. Baseline characteristics were 65M:14F; age at diagnosis 61.0 (SD 11.6 years); and mean BMI 25.0 kg/m2 (SD 5.3 kg/m2). Significant differences were detected in mean SMI -4.3 cm2/m2 (SD 4.0 cm2/m2, p<0.001); MA -3.9 HU (SD 3.7 HU, p<0.001) and were similar between males and females. Visceral and subcutaneous adipose tissue types were also significantly

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different between pre and post CT images ($p<0.001$). Mean percentage weight loss from reported usual body weight (UBW) was 11.8% (SD 9.1%) regardless of gender. Fifteen patients (n=60, 25%) met the poor prognostic criterion of low SMI and low MA combined with involuntary weight loss > 8%. Logistic regression suggests MA below the threshold value is associated with reduced all cause mortality (OR 3.71, CI 1.16–11.90, $p=0.027$). Of 35 unplanned admissions, 14 (40%) were for nutrition-related morbidity. No association between low SMI with unplanned admissions or treatment breaks was detected in this series, however the relationship between low MA and nutrition-related unplanned admissions approached significance (OR 2.89, CI 0.85-9.80, $p=0.089$).

Conclusions: This study demonstrates that significant changes in skeletal muscle occur in patients undergoing treatment of curative intent for HNC. Implications for clinical practice include a greater awareness by clinicians of latent changes in muscle quantity and quality as clinically significant occult sarcopenia may be present regardless of overall weight status. Further work to develop simple methods for including analysis of LBM as part of routine clinical practice is recommended.

CUTANEOUS SQUAMOUS CELL CARCINOMA – IDENTIFICATION AND MANAGEMENT OF HIGH RISK CASES

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Background: The incidence of head and neck cutaneous squamous cell carcinoma (cSCC) in the United Kingdom is rising, with parotid and cervical lymph node metastasis occurring in approximately 5% of cases. Long term prognosis is worsened where logoregional control is not achieved early on. We discuss our experience of metastatic cSCC and explore the evidence and controversies in optimal management.

Method: We performed a retrospective observational study in our unit for patients who underwent primary surgical resection for head and neck cSCC over a 12-month period. Clinicopathological features were analysed and disease progression was noted.

Results: The sample included 112 patients, seven of whom developed recurrence with or without nodal metastases. All 7 patients were immunocompromised for various reasons (long term corticosteroids, myeloproliferative disorder etc.). The primary tumours were located on the pinna or periauricularly. Histopathological features included moderate to poor differentiation (7/7) and perineural invasion (3/7). Further treatment in this subset included superficial parotidectomy (7/7) and selective neck dissection (6/7). Three cases demonstrated parotid nodal metastases histologically which weren't evident clinically or radiologically.

Discussion: The features in our group of patients with recurrence and nodal metastases mirror those outlined in the literature, however a consensus on treatment modalities for cSCC of the head and neck is yet to be reached. Interestingly the presence of occult parotid nodal spread was not unique.

Conclusion: High risk cSCCs warrant aggressive management, and in addition to tumour resection elective superficial parotidectomy and selective neck dissection should be considered where metastatic risk factors coincide.

EVALUATION OF THE TEMPORAL RELATIONSHIP BETWEEN FORMALIN SUBMERSION TIME AND RESECTED SPECIMEN SIZE

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Purpose: Histopathologic analysis of resected specimens is a cornerstone of oncologic surgery, determining both operative success and subsequent management. Studies have revealed that formalin fixation may shrink resected tissue, altering critical elements such as tumour size and surgical margins. To date, no literature exists examining time-dependent shrinkage of head and neck resection specimens. This paper aims to evaluate the temporal relationship between formalin submersion time and resected specimen size in a variety of tissues.

Methodology: Six male merino sheep were utilised in this study. In each animal tissue was resected from four locations: tongue, labial mucosa, buccal mucosa and sternocleidomastoid muscle. Dimensions of the tissue were recorded immediately post-resection prior formalin submersion. Subsequent measurements were taken after 6, 12, 24, 48, 72 and 96 hours of submersion in formalin.

Results: After 96 hours of submersion, median shrinkage of specimen height in relation to initial size was 15.5% (11.56% - 19.5%; $p < 0.05$) and shrinkage in width was 16.7% (13.2% - 20%, $p < 0.05$). The rate of shrinkage for both height and width was maximal within the first 24 hours, after which shrinkage was markedly reduced. There was generally no difference in the amount of tissue shrinkage between individual regions.

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Conclusion: These findings indicate formalin fixation time results in measurable and significant changes in specimen size of about 15% which evolves and then plateaus at the 24 hour mark. This is comparable across tissue types. Based on this study all specimens should be submersed in formalin for 24 hours prior to sectioning, as any further tissue shrinkage is then negligible. Units should consider adopting this protocol to allow for accurate comparison of surgical specimens.

DO CLINICAL AND TREATMENT RELATED FACTORS AFFECT LONG-TERM QUALITY OF LIFE IN PATIENTS POST NECK DISSECTION?

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Purpose: Undergoing neck dissection (ND) is known to negatively affect health-related quality of life (HRQOL). The aim of this study was to explore the relationship between HRQOL and several key treatment and clinical factors in patients six months to five years post ND surgery for head and neck cancer.

Methodology: A cross-sectional study was conducted at two tertiary hospitals in Brisbane, Australia, involving patients who received ND between June 2009 and May 2014. Participants completed a region- and disease-specific measure of HRQOL (Neck Dissection Impairment Index, NDII) and a general measure of HRQOL (Assessment of Quality of Life – 4 Domains, AQoL-4D). Clinical and treatment factors such as age, type of surgery and adjuvant therapy were collected from medical records.

Results: A total of 129 participants (71% male) at a median of approximately three years post-surgery were included in the analysis. Both the NDII (median (Q1, Q3) score: 77.5 (47.5, 92.5)) and AQoL-4D utility score (0.70 (0.48, 0.84)) demonstrated reduced HRQOL in patients following ND. Generalised linear modelling demonstrated undergoing bilateral ND (coef (95% CI) = -15 (-28, -3); p = 0.016) and chemotherapy (coef (95% CI) = -13 (-25, -1); p = 0.039) was associated with a worse NDII score. Modelling for the AQoL-4D utility score was comparatively more difficult to interpret and less clinically meaningful. Time since surgery was not associated with either HRQOL measure.

Conclusion: Clinicians should consider treatment-related factors when predicting the impact of ND on HRQOL for patients following head and neck cancer treatment. The use of a region or disease specific outcome measure is recommended to better account for factors specific to the condition in question.

EVIDENCE FOR THE PROPHYLACTIC DISSECTION OF LEVEL V, IN PRIMARY MUCOSAL SCC, IN THE CLINICALLY N POSITIVE NECK: A SYSTEMATIC REVIEW

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Purpose: To review the evidence for level V dissection in the management of previously untreated mucosal SCC of the head and neck, presenting with nodal metastasis when level V is clinically uninvolved. The primary outcome measure is the prevalence of occult nodal disease in level V in the node-positive neck, and the secondary outcomes include an analysis of survival, perioperative and quality of life outcomes.

Materials and Methods: A literature search was performed using Medline, EMBASE, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and the Cochrane Library. The search strategy aimed to include all English language papers concerning metastatic head and neck SCC to level V publish after 1990. A hand search was performed of all of the references of the papers included in this review. The search yielded a total of 270 papers. Strict inclusion and exclusion criteria were applied leaving 20 eligible papers in the final review.

Results: The overall prevalence of level V occult disease in the N positive neck irrespective of subsite is 3.4% (n=2539). The prevalence of occult level V metastasis for oral cavity tumours is up to 7.7%, and for the oropharynx it is at most 8.3%. There is limited data on overall survival but 5 studies reported a regional failure rate of 5.9% over variable time periods. There is exceedingly limited data on outcomes such as spinal accessory nerve function, quality of life, and perioperative complications.

Conclusion: The overall prevalence of level V occult disease in the N positive neck, irrespective of primary subsite, is 3.4%. The potential for shoulder dysfunction and limited oncological evidence does not support routine dissection of level V. Consideration must be given however to those with a greater disease burden in the neck.

Poster Abstracts (cont'd)

EVALUATION OF THE EFFECTIVENESS OF A NUTRITION ASSISTANT ROLE IN A HEAD AND NECK CANCER CLINIC

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Purpose: At Peter MacCallum Cancer Centre, patients with head and neck (H&N) cancer receiving curative intent (chemo)radiation are managed in a twice-weekly multidisciplinary clinic. Patients are seen by a dietitian weekly during treatment and fortnightly up to six weeks post treatment. However, dietitians have limited time to manage complex H&N patients. Nutrition assistants (NA) work in the inpatient and ambulatory settings, performing malnutrition screening and basic nutrition intervention. This study aimed to release dietitian time for management of high risk and complex patients by implementing the NA role into the clinic to screen and provide basic nutrition interventions while ensuring clinical outcomes are maintained.

Methodology: A pre-test post-test study to evaluate the effectiveness of the NA role in the existing head and neck clinic. A training module and model of care were established to instruct the NA on the types of patients to be seen, the screening process to be completed and actions to be taken. Outcomes included proportion of NA and dietitian time spent with high risk patients and weight change during and post-radiotherapy.

Results: Forty-three patients were included pre-implementation and 48 patients post-implementation. Post-implementation 21 (44%) of patients were screened by an NA. Proportion of dietitian time spent with high risk patients improved post-implementation (83% vs. 60%) There was no significant difference pre- and post-implementation in mean weight change during radiotherapy (-5.6% vs. -4.7%, $p=0.3$) or from start of radiotherapy to 4 weeks post-radiotherapy (-6.6% vs. -6.49%, $p=0.9$).

Conclusion: Nutrition assistants are an effective workforce to manage low risk patients in a multidisciplinary H&N treatment clinic and can support the release of dietitian time to manage patients with more complex needs.

RNA SEQUENCING OF METASTATIC CUTANEOUS SCC WITH NANO-STRING

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Purpose: Cutaneous squamous cell carcinoma is one of the most common malignancies in Australia with more than 500,000 cases treated each year. Metastasis to regional lymph nodes occurs in approximately 5% of cases which increases the morbidity and mortality for those patients and requires extensive treatment. Current clinicopathological predictors of metastases have a low predictive value, hence it would be of great benefit to have an accurate biomarker of metastatic potential.

Methodology: Patients with metastatic cutaneous SCC were identified pre-operatively and offered participation in the study. Tissue was harvested from the resection specimen excised as part of the ablative operation. RNA extraction was performed using Qiagen Allprep DNA/RNA extraction kit from 10 fresh tumours with > 35% tumour cellularity that had been homogenised using the Miltenyi Gentle MACS tissue homogenizer system. The panCancer Progression kit was used to analyse RNA on the Nanostring nCounter® Analysis System.

Results: Analysis is being undertaken to quantify expression of 770 cancer genes involved in angiogenesis, extracellular matrix, epithelial-to-mesenchymal transition, and metastasis in these tumours.

Conclusion: There is very little published data regarding the transcriptomic and expression profile of high risk and metastatic cutaneous SCC. The mutational landscape for cutaneous SCC is incredibly diverse, hence identification of the expression profile of the various mutations remains a challenge.

Poster Abstracts (cont'd)

SYPHILIS AND THE TONSIL

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Purpose: Syphilis of the tonsil is a rare condition; however the prevalence of syphilis in Australia is increasing, making it an important differential in the diagnosis of tonsillar ulceration.

Method: We present two cases of syphilis of the tonsil that presented to an Australian metropolitan tertiary hospital with an HIV-specialty unit. These cases are further discussed in the context of a review of the current literature.

Results: Syphilis is a systemic infection caused by the spirochetal bacteria Treponema pallidum[1]. The majority of syphilis infections are from sexual contact[1]. Historically, the most common site of infection is in the anogenital region. However, the frequency of disease occurrence in the oral cavity has been increasing in Australia due to changing oral sexual practices in both the homosexual and heterosexual population[2]. Homosexual men with HIV infection are disproportionately affected by syphilis, with the incidence five-times higher than homosexual men without HIV[3]. There is a paucity of cases and only 12 reported in the literature on the primary form of the disease. Diagnosis is with clinical history and appearance, with confirmation via either serology or histology. The treatment for all stages of syphilis remains penicillin G.

Conclusion: With the rising prevalence in the Australian community of both oropharyngeal malignancy and syphilis, it is important to include syphilis as a differential in the young patient with HIV who presents with a painful tonsillar ulcer.

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Poster Abstracts (cont'd)

MORE THAN JUST A PERITONSILLAR NEUROFIBROMA

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The Royal Brisbane and Women's Hospital, Australia

Presentation of a rare case of a tonsillar neurofibroma in a 37 year old female. On further investigation patient subsequently found to have bilateral acoustic neuromas and schwannomas affecting her nerve roots in the cervical spine area. Presentation of her clinical presentation, investigation and follow-up. Also review of literature of this rare clinical case.

THE SPONTANEOUS SELF RESOLVING CHYLE LEAK

C. J. GRIGG, S. Vasani

Royal Brisbane and Women's Hospital

Presentation of a unique case of a recurrent spontaneous self resolving chyle leak. 35 year old female with multiple presentations of relatively obscure symptoms that self resolved. Her clinical signs/symptoms, subsequent investigations, follow-up and progression of disease will be presented.

PROGRAMMED CELL DEATH LIGAND-1 IN HIGH RISK CUTANEOUS SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK

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Background: Programmed Cell Death Ligand (PD-L1) is expressed in a range of tumors, where it binds to PD-1 on activated T cells and inhibits anti-tumoral T cell response. Phase 3 clinical trials of novel monoclonal anti PD-L1 immunotherapy, which render tumors more susceptible to an immunological response, are being conducted in a variety of solid tumors. PD-L1 expression in high-risk head and neck cutaneous squamous cell carcinoma (HNcSCC) has not been evaluated.

Methods: Detailed clinicopathological review of 91 patients with high-risk HNcSCC including 38 primary cases and 53 primary with matched metastases identified within the Sydney Head and Neck Cancer Institute database was performed. PDL-1 immunohistochemistry (clone: Ventana SP263 rabbit monoclonal antibody) was performed on whole sections of the primary and metastatic HNcSCC.

Results: The cohort included 78 males and 13 females with a median age of 73 years and median follow-up of 2.5 years. Eight disease-specific deaths were observed. PD-L1 expression was seen in 39% of the primary HNcSCC and 35% of the metastases. PD-L1 expression was observed in 61% of the tumor infiltrating lymphocytes in the primary HNcSCC and 55% in the metastases. Expression of PD-L1 in the tumour cells was not associated with disease free or disease specific survival. On the other hand, expression of PD-L1 in greater than 10% of tumour infiltrating lymphocytes was associated with longer disease free survival.

Conclusion: Our preliminary results indicate PD-L1 expression is frequently expressed in primary high-risk HNcSCC and expression of PD-L1 in tumour infiltrating lymphocytes may be associated with improved disease free survival. Our data indicate PD-L1 related therapies are worthy of further study in this population of patients.

THE MEDIAL FEMORAL CONDYLAR FREE FLAP: A NOVEL UTILITY IN HEAD AND NECK RECONSTRUCTION

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Purpose: Composite head and neck onco-ablative defects present unique challenges to the reconstructive surgeon. Skeletal support, soft tissue coverage and lining are all critical components of reconstruction[1]. Small to medium sized bone defects can be reconstructed with well-established techniques (bone graft, fibula flap, iliac crest flap) however these donor sites remain the gold standard for large, segmental defects and are useful in managing recurrent disease. We present our early experience with the medial femoral condyle (MFC) flap[2] to reconstruct a range of small-medium sized composite bony defects.

Methodology: MFC free flaps were identified from the Plastic and Reconstructive Surgery database at a large Queensland tertiary hospital. A retrospective review and analysis of prospectively collected data was undertaken. MFCs were raised on the descending genicular artery, from which unicortical femoral bone was harvested.

Results: MFCs were performed in 3 cases; 2 anterior maxillary defects and 1 mandibular defect. Bone defects ranged from 16x13mm to 60x65mm with an average size of 52x39mm. Osseofasciocutanous flaps were used in 2 cases, and an osseomyocutaneous flap in 1 case. 1 patient suffered post-operative haematoma at the inset site (requiring return to theatre). There were no free flap failures or significant donor site morbidity.

Poster Abstracts (cont'd)

Conclusions: We find the MFC a versatile chimeric flap for the management of bony defects in head and neck reconstruction. The donor site morbidity and complication profile associated with the use of the MFC flap is in keeping with other bone free flaps.

References:

[1] Hanasono M et al: Important aspects of head and neck reconstruction; Dec 2014 PRS; CME article

[2] Sakai K et al: Free vascularised thin corticoperiosteal graft; PRS 1991; 87: 290-298

PREOPERATIVE ULTRASOUND GUIDED HOOKWIRE LOCALISATION OF CLINICALLY IMPALPABLE NODAL RECURRENCE

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Purpose: Recurrent nodal metastasis in the head and neck can prove to be a difficult surgical resection in the setting of previous neck dissection or radiotherapy. Improvement in surveillance imaging may mean detection of nodal disease, prior to it being clinically palpable. Ultrasound guided localisation pre-operatively, may provide a more targeted dissection in cases of impalpable nodal recurrence where lumpectomy or super-selective neck dissection is appropriate. We provide 3 cases of differing tumour types who underwent preoperative ultrasound guided hookwire localisation and demonstrate the utility of this technique in minimising operative time and accurate identification of the recurrent nodal disease.

Methodology: A review of the current literature was performed using MEDLINE databases. 3 cases are discussed with differing primary tumor types all in which have had previous neck dissections with new PET avid impalpable nodal recurrences. All 3 cases were performed by the same surgeon.

Results: Current literature describes preoperative hookwire localization as a technique that may reduce operative time compared to revision neck dissection. In our case series all patients had impalpable PET avid neck nodes detected on follow-up surveillance. The average operative time was 54 minutes. In all cases the excised node was positive for recurrence. Histological examination of the hookwire tract was negative in all 3 cases.

Conclusion: By performing pre-operative ultrasound localisation of impalpable PET avid nodal recurrences we were able to accurately identify and excise the target node whilst minimising extensive exploration in a previously operated neck and therefore shortening the operative time. This is an effective technique that may prove to have a wider application in head and neck malignancies particularly with ongoing advances in radiological surveillance.

ROLE OF HEMITHYROIDECTOMY DURING TOTAL LARYNGECTOMY FOR T3 AND T4 LARYNGEAL CARCINOMA PATIENTS

OSAMA MOHAMED HASSAN,
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Background: The need of performing thyroidectomy during Ttotal laryngectomy (TL) is controversial because TG invasion is rare and thyroidectomy is associated with long term morbidities.

Aim of the Study: To asess the incidence and factors favoring thyroid gland involvement (TGI), indications of hemithyroidectomy, and postoperative complications.

Patients and Methods: It included 40 patients who were diagnosed T 3 or T 4 laryngeal carcinoma and candidate for total laryngectomy with at least hemithyroidectomy.

Results: 37 cases were males (92.5%). The mean age was 61.1 years. We found 4 cases (10%) had thyroid gland invasion; all were males (100%). Of the 4 cases with TGI Three cases (75%) were transglottic carcinomas, and one case (25) was glottic carcinoma, all were stagedT4a 100%. All cases (100%) with TGI had unilateral fixed vocal cord, infiltrated anterior comissure (AC), and subglottic extension >1cm. Thyroid cartilage invasion was evident in all 4 cases (100%) with TGI ie; statistical significance (p value = 0.026). Two cases with TGI were grade II SCC, and another 1 was grade III SCC, and the last one was adenoidcystic carcinoma. Thyroid gland invasion by laryngeal carcinoma could be anticipated by CT scan in 2 cases 50% out of four cases with TGI. That was of statistical significance (p value 1cm, transglottic carcinomas. Total thyroidectomy is recommended in CT evidence of TGI. Hemithyroidectomy can be safely without significant increase in post operative complications and morbidities.

Poster Abstracts (cont'd)

DIFFERENTIAL FUNCTIONS OF CARBOXYLATED AND UNCARBOXYLATED OSTEOCALCIN ON CANCER GROWTH

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Osteocalcin (OC), an osteoblasts-derived polypeptide hormone, is present in general circulation as both carboxylated (Gla) and uncarboxylated (Glu) forms, and serum OC level is thought to be an index of the bone properties. Recent studies demonstrated that high circulating OC levels constitute a marker for bone metastasis in prostate cancer. However, it is not yet known that OC directly affects pathological status of the cancer. Therefore we investigated the direct effect of each OC (GlaOC or GluOC) on cancer growth.

Androgen-independent human prostate cancer cell lines (PC-3, PPC-1), normal human prostate epithelial cells (ProEpi), and mouse melanoma cell line (B-16) were assessed their cell viability in the presence or absence of GlaOC or GluOC using WST-8 and BrdU assays. In addition, Phospho-Receptor Tyrosine Kinases Array (Phospho-RTKs array) was applied to get insight into the molecular mechanism underlying the GlaOC or GluOC effect. For in vivo analyses, C57Bl/6 female mice were transplanted B16 cells in the right flank and administrated GluOC continuously by osmotic pumps embedded in the left flank, followed by a measurement of the tumor volume and a histological analysis 3 weeks after transplantation.

GlaOC promoted cell growth in prostate cancer cells and ProEpi cells. On the other hand, GluOC suppressed the cancer growth, while promoted ProEpi cell growth. Phospho-RTK array analysis revealed that GluOC reduced the phosphorylation level of several receptor tyrosine kinases in cancer cells, whereas GlaOC accelerated the phosphorylation. Furthermore, GluOC significantly suppressed transplanted tumor growth in vivo as well as in vitro, and administrated GluOC was detected in tumor region.

GluOC showed antitumor activity, likely by inhibiting receptor tyrosine kinases activities in vitro and in vivo, while GlaOC promoted cell growth, indicating a discriminative effect of GlaOC and GluOC on tumor growth.

ELMO3 PREDICTS POOR OUTCOME IN T1 LARYNGEAL CANCER

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Purpose: Despite the excellent overall survival of 92-97% in early glottic cancer, recurrence rates of 13-20% have not improved in the last decades. The engulfment and cell motility protein 3 (ELMO3) has been described as prognostic marker in lung cancer patients. The aim of this study was to investigate the expression of ELMO3 in early laryngeal cancer patients treated with TLM and to evaluate its prognostic significance for recurrence and disease free survival.

Methology: 48 patients with glottic carcinoma (T1N0M0) that underwent primary treatment with TLM between 1994 and 2012 were analyzed. ELMO3 expression of the tumor was assessed using immunohistochemistry and correlated to clinical data.

Results: Positive ELMO3 expression was found in 23% of the patients and was correlated to poor disease-specific and disease free survival ($p < 0.05$).

Conclusion: This is the first study to show a prognostic effect of positive ELMO3 expression in early glottic carcinoma patients.

ASSESSMENT OF CYTOTOXICITY OF ANTICANCER REGENTS FOR ORAL SQUAMOUS CELL CARCINOMAS USING A REAL-TIME CELL MONITORING ANALYSIS SYSTEM

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Purpose: A real-time cell monitoring analysis (RTCA) system was developed as cell monitoring device, which detected the change of impedance as cell attach and spread in culture dish covered with a gold microelectrode array. However, the application of RTCA system has not been shown clearly. The purpose of this study is to determine whether the IC50 values calculated by RTCA system are useful in evaluation of cytotoxicity.

Poster Abstracts (cont'd)

Methods: iCELLigence (ACEA Bioscience. Inc., USA) was used as a RTCA device. SQUU-A, SQUU-B, SAS, NA were used as human oral squamous cell carcinoma (OSCC) cell lines. Cells were seeded to E-plate at 2×104 cells/well with DMEM containing 10% fetal calf serum. After 24 h incubation, anticancer reagents were added to each well. Once the cells were added to the sensor well, the sensor devices were placed into the incubator, and the real-time cell index (CI) data acquisition was initiated by the RT-CES analyzer (ACEA Bioscience. Inc. USA).

Result and Discussion: The proliferation of the cells was detected by a RTCA system. The IC50 value of anticancer regent optimized was calculated from real-time CI measured by a RTCA system. These results indicated that a RTCA system was useful to evaluate of cytotoxicity at optimal term for anticancer regent because this system can record the data at real-time.

DETERMINATION OF AN OPTIMAL PLANNING TECHNIQUE PRIOR TO THE CLINICAL IMPLEMENTATION OF VOLUMETRIC MODULATED ARC THERAPY PLANNING FOR NASOPHARYNGEAL CARCINOMA AT NATIONAL CANCER CENTRE SINGAPORE

J. HU, Y. Y. Ng, Z. Master, G. H. Tay, M. Chew, J. Yap, K. W. Ang, J. Lee, Y. L. Soong, T. Tan, K. W. Fong, J. Wee

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Purpose: With Volumetric Modulated Arc Therapy (VMAT) gaining popularity in recent years over Intensity-Modulated Radiation Therapy (IMRT), this study aims to identify an optimal VMAT planning technique before its clinical implementation for Nasopharyngeal Carcinoma (NPC) radiotherapy at our institution.

Materials and Methods: 20 NPC cases (T1N0M0 to T3N2M0 staged using UICC/AJCC 7th Edition staging) were selected for this retrospective dosimetric study. All cases were re-planned on VMAT by one dosimetrist. Three plans with different field parameters were optimized with the same structure set and constraints for each patient. The 1st planning technique was with 2 full-arcs using the default field width assigned by the optimizer (2Arc-Default), the 2nd was with 2 full-arcs with limited field width from 17 to 20cm (2Arc-small-F/S) and the 3rd technique was the same as the second, with an additional partial arc focused on the primary tumour (3Arc-small-F/S). PTV and OAR doses, as well as total MUs for each plan were compared. The Wilcoxon-signed rank test was used to test for statistical significance.

Results: All 3 VMAT planning techniques produced deliverable, clinically acceptable plans, with comparable PTV coverage and OAR doses within tolerance. The limited field techniques (2Arc-small-F/S and 3Arc-small-F/S) showed the best results as compared to 2Arc-Default for the brainstem, cochlear, cord, eyes, lenses and parotids, though the 3Arc-small-F/S technique had the lowest max/mean doses for the brainstem, lenses and eyes of all the plans. Mean MUs for 2Arc-Default, 2Arc-small-F/S and 3Arc-small-F/S were 561.8±70; 617.4±91 and 700.8±99 respectively. All results mentioned were statistically significant ($p<0.05$).

Conclusion: The 3Arc-small-F/S technique was the preferred strategy for NPC irradiation, which provided the best OAR sparing, despite a slight increase in total MUs.

IDENTIFICATION AND CHARACTERISATION OF CANCER STEM CELLS AND COMPONENTS OF THE RENIN-ANGIOTENSIN SYSTEM IN LIP SQUAMOUS CELL CARCINOMA

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Aim: To identify and characterise expression of cancer stem cells (CSC) and components of the Renin-Angiotensin System (RAS) in Lip SCC (LSCC).

Methods: Moderately differentiated BMSCC samples (n=6) underwent DAB immunohistochemical (IHC) staining for the cancer stem cell (CSC) markers NANOG, OCT4, SALL4, SOX2, pSTAT3, CD44, and EMA; and components of the RAS, namely pro-renin receptor (PRR), angiotensin converting enzyme (ACE) and angiotensin II receptors 1 (ATIIR1) and 2 (ATIIR2). Immunofluorescent IHC staining was performed in BMSCC (n=2) samples from this cohort. The mRNA expression of the genes encoding NANOG, OCT4, SOX2, SALL4, STAT3, CD44, PRR, ACE, ATIIR1 and ATIIR2 were studied using NanoString and RT-PCR. Western blot (WB) analysis was used to confirm the expression of the aforementioned proteins.

Results: IHC staining demonstrated the presence of (1) an EMA+/CD44+/SOX2+/SALL4+/pSTAT3+/NANOG+ CSC subpopulation within the tumour nests that also expressed PRR, ATIIR1 and ATIIR2; (2) an EMA-/CD44+/SALL4-/SOX2+/pSTAT3+/OCT4+/NANOG+ subpopulation within the stroma between the tumour nests that also expressed PRR, ATII1 and ATIIR2; and (3) an EMA-/CD44-/CD34+/SOX2+/ SALL4-/OCT4-/pSTAT3+/NANOG- subpopulation on the endothelium within the

Poster Abstracts (cont'd)

stroma that also expressed PRR, ACE, ATIIR1 and ATIIR2. The expression of CD44, SOX2, SALL4, OCT4, STAT3, PRR, and ACE was confirmed by NanoString and RT-PCR analysis. WB analysis confirmed the presence of NANOG, OCT4, pSTAT3, SOX2, PRR, ACE, ATIIR1 and ATIIR2.

Conclusion: This study demonstrates three putative CSC subpopulations within LSCC: (1) within the tumour nests, (2) tumour stroma, and (3) the vasculature in-between the tumour nests. Furthermore, the expression of PRR, ATIIR1 and ATIIR2 on the former 2 with ACE, ATIIR1 and ATIIR2 on the latter, suggests a possible role for blockers of the RAS in controlling the CSCs of LSCC.

Conflict of Interest Declaration: TI, PFD and STT are inventors of a PCT patent application (No. PCT/NZ2015/050108)
Cancer Diagnosis and Therapy

EFFECTIVENESS OF POST-OPERATIVE RADIOTHERAPY FOR ORAL SQUAMOUS CELL CARCINOMA WITH INTERMEDIATE-RISK FACTORS

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Purpose: The role of post-operative radiotherapy (PORT) remains controversial for patients with oral squamous cell carcinoma (SCC) complicated by the presence of intermediate adverse features on histopathology. This study is to examine the effectiveness of PORT for intermediate-risk oral cancer patients in comparison to wide local excision (WLE) with or without neck dissections (ND).

Methodology: Detailed literature review was performed to define the criteria for intermediate risk factors. Records of all oral SCC patients treated at the Royal Brisbane and Women's Hospital from 2008 to 2013 were collected. This provided a minimum of 2-years follow-up for each case. 164 patients were included who had oral SCC in any T stages with one or more intermediate risk factors including close margins (surgical margins > or = 1mm or < 5mm), N1 disease, perineural invasion, lymphovascular invasion, tumour thickness of 4mm or more). Primary outcome was disease free survival (DFS), salvage rates and overall survival.

Results: Highest recurrence rate was found in patients who received WLE only. For WLE group, WLE+ND group and WLE+ND+PORT group, DFS were 71%, 82%, and 84%, respectively, with no significant differences observed in the subsequent salvage rate. However a slightly better salvage rate of 13% was found in WLE+ND group. Overall survivals for these patients were 80% in WLE group, 90% in WLE+ND group, 82% in WLE+ND+PORT group. Despite significantly higher proportions of N1 disease, perineural or lymphovascular invasion, T4 lesion and oral SCC with multiple intermediate-risk factors were found in WLE+ND+PORT group, these factors did not significantly correlate to recurrences.

Conclusion: PORT and ND appeared to provide similar level of benefit in disease control of oral SCC with intermediate-risk factors with no significant differences in the salvage rate for recurrences. Further research is required to define the role of PORT in this group of oral SCC.

OUTCOMES OF CONCURRENT RADIOTHERAPY AND SYSTEMIC THERAPY IN ELDERLY PATIENTS WITH LOCALLY ADVANCED HEAD AND NECK SQUAMOUS CELL CARCINOMA

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Purpose: Combining radiotherapy with systemic therapy (RT-ST) using platinum based chemotherapy or cetuximab is standard management for locally advanced Head and Neck Squamous Cell Carcinoma (HNSCC). However, optimal management of elderly patients remains unclear with clinical trials often excluding this population. We report the outcomes of elderly patients commencing RT-ST at our institution.

Materials and Methods: This retrospective review describes outcomes of patients aged ≥70 years treated with RT-ST for histologically confirmed mucosal HNSCC diagnosed between 2008-2015. Demographics, treatment details and outcomes were collected. Overall survival (OS) was analysed using the Kaplan Meier method (SPSSv23).

Results: Forty-three patients commenced RT-ST; 76% male, median age 75 years (range 70-85). Predominant primary sites were oropharynx(24), hypopharynx(9) and larynx(6). P16 status was documented in 24 cases with 13 (54%) positive. RT-ST was platinum based for 27 patients, cetuximab for 15 and both for 1 patient within a trial. Five (11.6%) patients failed to complete radiotherapy (3 deceased) and 6 (14.0%) patients required extended treatment times (range 1-3 days). Systemic treatment dose reductions, substitutions or treatment omissions occurred in 23 (54%) patients. At analysis 24 (56%) patients were deceased. Median follow up of alive patients was 25.5 months (range 7 – 63 months). Mortality rate within 90 day of treatment was 11.6% (5 patients) and median OS

Poster Abstracts (cont'd)

was 39.0 months (95%CI 25.6 – 52.4 months), which did not correlate with Charlson Comorbidity Index (log rank p=0.895).

Conclusion: Although the majority of patients completed radiotherapy, systemic treatment modifications were often required. Current literature does not define whether age should be considered a contraindication for RT-ST for elderly patients with HNSCC. Randomised clinical trials to answer this are required in the future.

A DECEPTIVE DIAGNOSIS: NODULAR FASCIITIS MIMICKING A SARCOMA

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Nodular fasciitis was initially described in 1955 by Konwaler as "subcutaneous pseudosarcomatous fibromatosis (fasciitis)" due to the possible clinical and histological confusion with a sarcoma. The potential for the misdiagnosis of this benign growth as a malignant neoplasm is under recognized, and despite the fact that nodular fasciitis represents one of the most common mass forming soft tissue lesions, it is our impression that many pathologists do not consider nodular fasciitis in their differential diagnosis, leading to the potential for serious diagnostic confusion. We report a case of nodular fasciitis that was misdiagnosed by multiple pathologists as a leiyomyosarcoma occurring on the temple.

AN UNUSUAL ANATOMIC VARIATION FOR THE ALT PEDICLE: THE MEDIAL CIRCUMFLEX FEMORAL ARTERY

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The anterolateral thigh (ALT) flap has gained popularity for use as a soft tissue flap for reconstruction of regional as well as distant defects.

We describe a case when raising an ALT fasciocutaneous free flap for a patient requiring reconstruction after orbital exenteration. A variant vascular pattern of the LCFA was identified causing adjustment to the planned free flap. The LCFA was found to be arising from the medial circumflex femoral artery off the profunda femoris and coursing through the rectus femoris. There were no suitable perforators found supplying the ALT territory, therefore, an anteromedial thigh myocutanous flap was harvested with rectus femoris.

Typically, the LCFA branches off the profunda femoris artery and travels laterally deep to the rectus femoris and Sartorius muscles, and then divides into ascending, transverse, and descending branches. The descending branch would take either a septocutaneous or intramuscular course through vastus lateralis to eventually supply the overlying fat and skin of the lateral thigh. In 30% of cases, the descending branch will divide into a medial and lateral branch, with the latter giving rise to the skin vessels. In 2% of cases there may be an absence of any skin vessels, either septocutanous or musculocutaneous, or the perforator may be too small in diameter, necessitating exploration more proximally to determine if perforators are originating from the transverse branch of the LCFA or if use of an alternative free flap is required.

Variant origin of the lateral circumflex femoral artery is important for the awareness of surgeons during harvesting of ALT flaps in order to avoid iatrogenic complications while dealing with the anterior compartment of the thigh. Preoperative angiographic evaluation of the femoral arterial system may be considered.

INTERCELLULAR CROSSTALK DEFINED BY EXOSOMES FROM ORAL SQUAMOUS CARCINOMA CELLS DETERMINES ITS PATHOLOGICAL PROCESS

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Purpose: Cancer cell-derived exosomes have recently emerged as critical in cell-to-cell and cell-to-matrix communication. In this study, we examined the effect of exosomes from oral squamous carcinoma cells on invasive and metastatic process.

Methodology: Exosomes were isolated from tongue squamous cell carcinoma SQUU-A (non-metastatic) and SQUU-B (highly metastatic) cell lines, which were established from the same patient. For invasion assays, 8-μm-pore transwell inserts coated with Matrigel were used. To evaluate angiogenesis and lymphangiogenesis in vitro, Matrigel tube formation assays were performed using HUVECs (human umbilical vein endothelial cells) and HDLECs (human dermal lymphatic endothelial cells) treated with exosomes derived SQUU-A (exoA) or SQUU-B (exoB). The expression levels of VEGFs and VEGFRs were examined by real-time PCR and western blotting.

Results and Conclusion: Matrigel invasion assay revealed that the exosome derived from SQUU-B (exoB) spread its metastatic potential to SQUU-A. As for angiogenesis and

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lymphangiogenesis analysis, HUVECs exposed to exoA or exoB had little change in the expression levels of VEGFs and VEGFRs, which are closely related with tube formation. In contrast, the expression levels of VEGFR1, VEGFR2 and VEGFR3 in HDLECs were significantly increased by exoA and exoB, and those of VEGF-A, VEGF-C and VEGF-D were increased only by exoB. Additionally, these results were reflected to structure-forming ability in tube formation assay. Our data indicate that the cancer cell-derived exosome undertakes crosstalk with different malignant cell clones in an identical tumor microenvironment and luminal cells closely related to cancer dissemination, and which may define clinical prognosis.

PATTERNS OF DYSPHAGIA AND ACUTE TOXICITIES IN PATIENTS WITH OROPHARYNGEAL CARCINOMA UNDERGOING HELICAL IMRT +/- CONCURRENT CHEMOTHERAPY

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Purpose: To investigate severity, peak incidence and recovery patterns of dysphagia and related acute toxicities in patients with oropharyngeal cancer (OPC) undergoing Helical Intensity Modulated Radiotherapy (H-IMRT) +/- chemotherapy.

Methodology: Prospective study of 84 OPC patients undergoing H-IMRT +/- chemotherapy. Data regarding dysphagia and associated acute toxicities was collected weekly on-treatment and at 2, 4 and 12 weeks post-treatment using the Functional Oral Intake Scale, diet descriptors and CTCAE v4.0.

Results: Patients were predominantly (81%) male, a median age of 60 years, largely T2-4 tumours (T2 31%, T3 21%, and T4 27%), N2 disease (77%) and 90% received concurrent chemotherapy. Most (76%) were p16+, and 20% presented with baseline dysphagia. During treatment 57% experienced grade 3 dysphagia requiring enteral nutrition, with 14% nil by mouth. Most (85%) experienced grade 2-3 dysphagia, dysguesia, xerostomia and thick saliva, and > 60%, pharyngeal mucositis, oral mucositis, and nausea. More than 80% required a modified diet. Grade 2-3 toxicities were observed in almost 50% of patients by week 4 and peaked in the final week of treatment. At 12 weeks post treatment 25% patients continued enteral nutrition with some oral intake, with 61% managing a regular diet.

Conclusion: Results confirm that even when treated with new H-IMRT techniques, a high proportion of OPC patients will experience severe dysphagia and related toxicities due to the effects of concurrent chemotherapy, with almost half the cohort requiring clinical support by the fourth week of treatment. Despite advancements in radiotherapy techniques, this data confirms the ongoing need for active on-treatment support for advanced OPC patients, with implications for the timing and intensity of speech pathology services to support this population during treatment.

ABILITY OF PANENDOSCOPY IN DETECTING SYNCHRONOUS UPPER AERODIGESTIVE TRACT TUMOURS

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Purpose: The aim of this study was to determine the ability of panendoscopy to detect synchronous upper aerodigestive tract tumours (UADTT) which were not evident on clinical examination nor radiologically.

Methodology: We carried out a retrospective review of our head and neck cancer database on all patients, with a newly-diagnosed UADTT who underwent a staging panendoscopy from January 2009 – June 2016. Panendoscopy findings of synchronous malignancy were compared with clinical notes, PET-CT and CT/MRI findings.

Results: 159 patients had biopsy-proven UADTT, with a mean age of 58 years old (SD 9.6years). The T-stage of these patients was: T1 (12.6%), T2 (28.9%), T3 (23.9%), and T4 (34.6%). We found 7 patients (4.4%) with synchronous UADTT, 3 of which (1.9%) were found on radiology, and 4 on panendoscopy alone (2.5%). There was no significant relationship between the finding of a synchronous cancer, and tumour T-stage ($p = 0.635$) or N-stage ($p = 0.703$). Multiple regression analysis of risk factors (previous radiotherapy, smoking, alcohol consumption, Indigenous, and primary tumour site) showed no significant influence of these factors on the presence of synchronous tumours.

Conclusion: The value of panendoscopy in detection of synchronous tumours has long been debated. Our rate of synchronous primaries is comparable to the literature – 1-44%. There is no significant association between cancer stage and UADTT rates. No significant relationship was found between risk factors/primary site and UADTT rate.

Poster Abstracts (cont'd)

ULTRA-RAPID PCR-RFLP FOR DETECTION OF BRAF V600E FROM FORMALIN FIXED PARAFFIN EMBEDDED THYROID TISSUES

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Background: PCR-restriction fragment length polymorphism (RFLP)-based analysis is a popular, relatively simple and inexpensive technique for genotyping single nucleotide polymorphisms (SNPs). It requires basic, minimal and cheap instruments (conventional thermal cycler and equipment for electrophoresis). But, total experiment time is long (about 15~18 hours) due to long three steps (PCR, restrictive digestion, and agarose gel electrophoresis). Recently, several molecular reagents that are a rapid progressive DNA polymerase, a rapid restrictive endonuclease, and a rapid buffer for agarose gel electrophoresis, are introduced. To reduce total experimental time, we have developed the one-hour PCR-RFLP using three rapid reagents.

Methods: We used a rapid PCR reagent (EmeraldAmp GT PCR Master Mix; Takara), a rapid restrictive endonuclease (FastDigest TaaI, Life technologies), a rapid electrophoresis buffer (lithium borate buffer). For analytical sensitivity study, we used A375SM cell line for mutant homozygote and HEL 92.1.7 cell line for wild homozygote. And we also tested 50 FFPE samples of thyroid papillary carcinoma diagnosed by surgical biopsy to compare the results between one-hour PCR-RFLP and conventional PCR-RFLP.

Results: The sensitivity of one-hour PCR-RFLP was 5%. Total experimental time was about one hour (30 min for PCR, 15 min for restrictive digestion, 5 min for electrophoresis, and 5 min for miscellaneous steps as making mixtures). Positivity rates of one-hour PCR-RFLP and conventional PCR-RFLP were same (70.0%).

Conclusion: Ultra-rapid PCR-RFLP technique is applicable for rapid and convenient detection of BRAF V600E mutation in clinical laboratories.

FASCIOCUTANEOUS FLAPS FOR PHARYNGOLARYNGECTOMY RECONSTRUCTION – REFLECTIONS ON FLAP DESIGN

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Reconstruction of pharyngolaryngectomy defects is amongst one of the most challenging problems a reconstructive surgeon faces. If anything, such cases are becoming even more challenging as primary tumours are increasingly being treated non surgically. Those patients that do end up having salvage pharyngolaryngectomies therefore often require reconstruction in a previously irradiated field, increasing the technical difficulty of the surgery and the chances of complications. Much has been published comparing the outcomes of free jejunal flap reconstructions with free tubed fasciocutaneous flap reconstructions.

It is our preference to use fasciocutaneous flaps where possible and here we describe some simple modifications to flaps design that we believe may decrease the chance of post operative complications, particularly anastomotic leaks.

"FLApp" – EXPERIENCE DEVELOPING AND IMPLEMENTING A SMARTPHONE APPLICATION TO AID IN MAINTAINING A HEAD AND NECK FREE FLAP DATABASE

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Free Tissue transfer forms an essential part of the surgical management of many head and neck cancers. Like most institutions, it has been our practice to maintain a database of cases performed to aid in audit and research.

The quality of any database is only as good as the data recorded, which in turn depends on the persons recording the data and the methods and timing of the data collection and entry. It had been our practice to fill in a paper proforma at the end of the surgery and subsequently collate these, entering them into an excel spreadsheet database at regular 2 weekly intervals. Due to the necessity of having physical sheets of paper available at the time of surgery and safely storing them each time, this method had its shortcomings.

We describe our experience developing and implementing a bespoke smartphone application, FLApp (Flap App) that was dowloaded by all members of the team and allowed real time data entry into our secure database.

Poster Abstracts (cont'd)

Since its implementation in November 2015 we have reliably and easily collected data for a total of 54 flaps. In all cases data were entered into the database via the App at the time of surgery, with no need for retrospective data collection from medical records as was often the case before. There were a few initial modifications to pull down menus suggested by team members which were easily changed. Subsequent feedback has been positive and the quality of our database has undoubtedly improved.

SUCCESSFUL ALARYNGEAL COMMUNICATION FOLLOWING TRANSNASAL OESOPHAGOSCOPY(TNE) GUIDED TRACHEOSOPHAGEAL PUNCTURE (TEP) IN SINGAPORE

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Purpose: Surgical voice restoration using a tracheosophageal puncture (TEP) has become the most widely used method of alaryngeal communication. Although TEP for voice restoration can be done primarily during the laryngectomy, centres in Singapore still perform TEP as a secondary procedure. Despite the reported safety and efficacy of secondary tracheoesophageal puncture (TEP) using transnasal oesophagoscopy (TNE), less than 20 laryngectomy patients in Singapore have undergone this procedure. This paper presents two case studies of patients who underwent TNE guided TEP after failed conventional secondary TEP.

Methodology: Case A is a 64-year-old Chinese male who had a total laryngectomy with a bilateral modified neck dissection followed by post-operative RT. Case B is a 68-year- old Chinese male who had a total laryngectomy, partial pharyngectomy and radical neck dissection followed by post-operative RT. Both patients had failed attempts with conventional secondary TEP either due to complications with the procedure, or inability to produce voice.

Results: In-office TNE-guided TEP placement was performed for both patients with good results. Both patients achieved successful placement of the voice prosthesis without complications, functional voice, and subsequent better quality of life. Cultural considerations for the uptake of this procedure in Singapore cohort will be discussed.

Conclusions: TNE-guided TEP is a viable and effective option in patients in Singapore who still desire voice restoration, even when conventional secondary TEP has failed or if patients are unwilling or unable to undergo general anaesthesia due to medical comorbidities. We are currently reviewing our group data, and the collection of longer term follow up data is ongoing.

MOLECULAR MECHANISMS OF PERINEURAL SPREAD OF CUTANEOUS SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK: THE EPIDERMAL GROWTH FACTOR RECEPTOR AS A POTENTIAL THERAPEUTIC TARGET

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Background: Perineural spread of cutaneous squamous cell carcinoma of the head and neck (cSCCHN) is associated with worse prognosis and higher rates of locoregional recurrence. Molecular mechanisms remain unclear, thus there is no targeted therapy. We aim to define the level and cellular distribution of membrane receptors involved in perineural spread.

Methods: Formalin-fixed paraffin-embedded tissue sections were immunostained with antibodies to the epidermal growth factor receptor (EGFR) and other receptor tyrosine kinases to determine expression levels. Secondary imunofluorescence and confocal imaging were used to assess receptor localisation.

Results: Application of a validated scoring system shows that 72% of cases (n=18) with large nerve perineural spread over-express EGFR. This is significantly higher than published rates of 35% to 55% for primary cutaneous SCC. Several distinct expression patterns were characterised, with EGFR either localised to the cell membrane or internalised on endosomes.

Conclusions: A role for EGFR in perineural spread of malignancy is suggested. Localisation of the receptor will have implications in targeting therapy. In vitro studies of receptor trafficking and in vivo studies with an existing murine model are anticipated. Existing clinical trials with monoclonal antibody therapies to EGFR may be extended to patients with unresectable perineural disease.

Poster Abstracts (cont'd)

OUTCOMES OF MICROVASCULAR FREE FLAP RECONSTRUCTION FOR MANDIBULAR OSTEORADIONECROSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Purpose: Osteoradionecrosis of the mandible is a devastating complication of radiotherapy in patients with head and neck cancer [1]. When medical treatment fails, a segmental resection may be required and the resulting aesthetic and functional problems of such have been met with advances in microvascular reconstructive techniques, with a variety of free flaps available [2]. The aim of this systematic review is to present evidence from up to date literature comparing the outcomes of different types of microvascular free tissue transfer reconstructions in patients with mandibular osteoradionecrosis.

Methodology: A systematic literature search was performed using several databases. A total of 16 articles met the final inclusion criteria, detailing 392 tissue transfers in 368 patients. The fibula was the most common donor site (n=221). 83% had biopsy proven squamous cell carcinoma. Analysis of pooled outcomes was undertaken, calculating the event incidence rate for included articles.

Results: Our analysis indicates that from the studies that met the criteria in the literature to date, there is a flap failure of 9.8% (9%-17%), I2=14.37, p=0.29. Of the reported data, event rates of flap complications include infection 12% (8%-18%; I2=0.00, p=0.66), fistula formation 12% (5%-25%; I2=0.00, p=0.79), haematoma 4% (1%-11%; I2=0.00, p=0.38) and thrombosis 8% (4%-14%; I2=0.00, p=0.64). Donor site complications were reported in 20 (5.4%) cases. Relative complication rates between flaps are explored.

Conclusion: The current review provided a summary of reported outcomes of microvascular free flap reconstruction for mandibular osteoradionecrosis in the literature to date. The fibula free flap remains the workhorse in mandibular osteoradionecrosis and is the most reliable of free flaps to reconstruct the jaw with the lowest complication rates.

IS 5 MM MARGIN SUFFICIENT IN THE PRESENCE OF ADVERSE PATHOLOGICAL FEATURES IN T1N0 TONGUES? FACTORS AFFECTING LOCAL CONTROL AND THE DEVELOPMENT OF A SCORING SYSTEM

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Background: The patterns of recurrence and the prognostic factors of early tongue lesions have been previously described in literature. However these reports have grouped T1 and T2N0 tongue lesion together. The adverse pathological features have been used to predict the nodal spread but the prognostic factors predicting local recurrences in T1N0 tongue have seldom been described. We aimed to evaluate the adverse pathological features associated with poor local control and the possible need for escalation of therapy.

Methods: Retrospective analysis of 144 patients of pT1N0 squamous cell carcinoma tongue who underwent wide local excision of the lesion with neck dissection in a single institution were included in our study. Patients who received any adjuvant therapy were excluded.

Results: The adverse pathological features associated with local control were least margin 5 mm (p=0.004), infiltrative margin (p=0.403), depth>4mm (p=0.136), lymphovascular invasion (p=0.301) and perineural invasion (p=0.342). We derived a scoring system assigning a score to each of these factors out of a total 10 points, based on the hazard ratio for local failure. Patients with a score>5 points had a 5-year local control rate of 5 may still benefit from adjuvant therapy for local control. Those with margins over 5 mm have improved local control rates (p=0.029).

Poster Abstracts (cont'd)

SQUAMOUS CELL CARCINOMA OF THE TONGUE IN YOUNG PATIENTS (<45 YEARS) – CLINICOPATHOLOGICAL FEATURES AND OUTCOMES

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Background: Recent trends showing increased incidence of oral squamous cell carcinoma in the younger population. However there is paucity of data describing the clinicopathological features and outcomes in Indian patients. The aim of this paper is to describe the above and compare with published literature.

Methods: We performed a retrospective analysis of 114 patients of tongue squamous cell carcinoma in patients between 18 and 45 years of age. We analysed the clinical features, impact of smoking, pathological staging and adverse pathological features, patterns of recurrence, salvage of recurrences and 5-year overall and disease free survival of these patients.

Results: Patients 45 years and below had a high incidence of adverse pathological factors – lymphovascular invasion (31%), perineural invasion (39%) and extracapsular spread (36%). Recurrence rate was 36%, of which 77% were local recurrences. For all stages, the 5-year disease specific survival and overall survival were 55% and 60% respectively. In patients who recurred, mortality was 66%, with stage at recurrence being a most important predictor of mortality ($p=0.005$). In young patients who smoked, stage of presentation was higher ($p=0.009$), depth of invasion >5mm was more common ($p=0.043$) and survival outcomes were worse but not significant ($p=0.076$)

Conclusion: When compared to existing literature, our data concurs with a high risk of loco-regional recurrence. The incidence of adverse pathological features was markedly higher in our study. The 5-year overall survival and disease free survival were worse. The increased association of adverse pathological factors may explain worse outcomes. These features indicate that in our population the tumours of the tongue in patients less than 45 years of age may be a distinct entity and they have a more aggressive behavior when compared to those in the available literature. Further treatment intensification strategies need to be studied to improve outcomes.

SQUAMOUS CELL CARCINOMA TONGUE IN YOUNG PATIENTS – A COMPARATIVE ANALYSIS BETWEEN AGE GROUPS BELOW AND ABOVE 45 YEARS WITH IMPLICATIONS FOR TREATMENT

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Background: Squamous cell carcinoma of the oral cavity in patients below 45 years is showing an increasing trend. Previous studies have shown conflicting data, with no conclusive evidence of differences in outcome compared to older patients. The aim of our study was to compare outcomes in these two groups.

Methods: A retrospective analysis of 425 patients of oral squamous cell carcinoma, between 18 and 86 years of age, one hundred and fourteen patients were up to 45 years of age (younger group) and three hundred and eleven patients were above 45 years of age (older group). They were compared in terms of pathological staging, adverse pathological features, recurrence rates and pattern or recurrence. Survival analysis of disease free survival, disease specific survival and overall survival was performed using Kaplan Meier's method and Cox regression analysis

Results: Compared to patients with age above 45 years, younger patients had lower grade of differentiation ($p=0.012$), higher lymphovascular invasion ($p=0.024$), perineural invasion ($p=0.032$), extracapsular spread ($p=0.006$). Local recurrence was higher ($p=0.023$). Disease specific survival was worse in younger patients with lymphovascular invasion, perineural invasion and nodal spread ($p<0.001$). There was weak evidence for a difference in disease free survival between young and old patients ($p=0.11$), however after adjusting for the effect of clinically important prognostic factors there was no evidence for a difference in disease specific survival.

Conclusion: Younger patients with squamous cell carcinoma of tongue have an increased risk of adverse pathological features and local recurrence. The clinical observation that young patients have a worse outcome is due to the association of adverse prognostic features rather than age being an independent prognostic factor. Further study is required to show if they will benefit from intensification of treatment.

Poster Abstracts (cont'd)

MULTIMODALITY MANAGEMENT OF LOCALLY ADVANCED RETROMOLAR TRIGONE TUMORS IN A TERTIARY CARE CANCER CENTER

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Purpose: Retromolar trigone tumors are rare and aggressive malignancies. There is lack of quality evidence pertaining to their management due to the heterogeneity in treatment policies adopted. We retrospectively reviewed the patients of locally advanced retromolar trigone tumors treated with a standard and uniform multimodality management.

Methodology: Retrospective analysis of head and neck cancer database (1995 -2014) was performed and an analysis of clinicopathologic profile and treatment details was carried out.

Results: Sixty four patients of retromolar trigone tumors underwent the standard multimodality treatment. Surgical procedure involved hemimandibulectomy with compartmental infratemporal fossa resection and neck dissection with reconstruction. Mean age was 52.7 yrs with male predilection (75%). The majority of them presented with Stage IVA disease (61%). All patients underwent radical surgery and margin negative resection could be achieved in 87.5% of patients. Fifty nine patients (92.2%) required reconstruction using flaps - most commonly pectoralis major myocutaneous flap. Histopathologically proven bone and node involvement was seen in 34 patients (53.1%) and 21 patients (32.8%), respectively. Post-operative radiotherapy was indicated in 52 patients (81.2%). During follow up 21 [32.8%] recurrences were detected with locoregional recurrence being more common [n=19, 29.7%] than distant recurrence [n=3, 4.7%], 1 patient having both local and distant recurrence.

Conclusions: Treatment of patients with locally advanced retromolar trigone tumors is challenging. However, good oncologic outcomes can be achieved by advocating an aggressive surgical approach with postoperative radiation therapy.

NEOADJUVANT METRONOMIC CHEMOTHERAPY PROTOCOL IN LOCALLY ADVANCED/BORDERLINE ORAL CANCERS – FEASIBILITY STUDY

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Purpose: A large majority of oral cancer patients in developing countries present in a advanced stage with borderline resectable/ inoperable stage to busy resource constrained tertiary cancer centres. Conventional chemotherapy protocols are associated with issues like toxicity, tolerance, cost and compliance. The present study was conducted to assess feasibility of low cost home based chemotherapy option.

Methodology: Single Arm feasibility study was done in borderline resectable / inoperable oral cancer patients. Home based metronomic therapy consisting of oral methotrexate 15 mg/m2 once a week and oral celecoxib 200 mg twice daily for eight weeks was used. RECIST Criteria 1.1 was used to assess response to therapy.

Results: Study included 60 patients. Mean age was 51.98 years with male predominance (80%). 55 patients adhered to the treatment, compliance rate being 91.60%. Affordability (Rs 700 per month) and tolerance to therapy was 100% and no grade III or IV toxicity was seen. Overall 18 patients had stable disease (32.73%), partial response was seen in 15 patients (27.27%) and disease progressed in 22 patients (40%). At the end of 8 weeks 26 (43.3%) patients were deemed resectable.

Conclusion: Neoadjuvant low cost, home based metronomic chemotherapy using oral methotrexate and celecoxib seems to be a viable option in managing advanced oral cancer in resource constrained set ups.

Poster Abstracts (cont'd)

SPECIAL NEEDS DENTISTRY IN THE CONTEXT OF MULTIDISCIPLINARY CANCER CARE

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Objectives: The management of Head and Neck Cancer (HNC) is complex and occurs via Multidisciplinary teams including Special Needs Dentists (SND). The purpose of the paper is to audit appointments at the regional HNC service at Auckland City Hospital where dentists were involved as part of the overall management.

Materials and methods: Appointments for dental review at the Multidisciplinary team meeting and Oral Mucositis Clinic between January 1 and June 30, 2015 were assessed. Data collected included: demographic information, medical history and current treatment regimens.

Results: 144 and 107 HNC patients were reviewed at the weekly Multidisciplinary meeting (MDM) and Oral mucositis clinic (OM) respectively. Males were more common (72.5%) with over 70% of the patients aged between 50-79 years. Hypertension (33.5%) and Dyslipidaemia (17.5%) were the most common co-morbidities. Patients at the MDM were screened prior to the start of HNC treatment, while the OM reviewed patients for the duration of their chemotherapy and/or radiotherapy treatment. OM patients included those that had a recent HNC resection (46.7%) and neck dissection (33.6%). 97.2% of patients at the OM were receiving radiotherapy, predominately 70 Grays over 35 Fractions in 7 weeks (33.6%). 35.5% were undergoing chemotherapy with Carboplatin (18.3%) and Cisplatin (73.8%) the most commonly administered drugs. Oral side effects managed by the SND dental team included oral mucositis, xerostomia, dysphagia and dygeusia all of which can compromise overall health.

Conclusion: SND specialists play an important role within multidisciplinary teams in the supportive care of HNC, by maintaining and improving quality of life.

FACTORS INFLUENCING PERCUTANEOUS ENDOSCOPIC GASTROSTOMY TUBE PLACEMENT IN HEAD AND NECK CANCER PATIENTS

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Purpose: Head and neck cancer (HANC) patients commonly require percutaneous enteral gastrostomy (PEG) insertion to manage malnutrition. However, risk factors for PEG placement are not clear and widely-accepted consensus guidelines do not exist. The purpose of this retrospective matched case-control study was to explore what factors influenced PEG insertion in HANC patients at our institution.

Methods: Retrospective data from 2005-2015 was collected from HANC patients with AJCC stage 3/4 disease who received curative treatment with combinations of surgery, radiotherapy, and/or chemotherapy. Clinicopathological variables investigated included age, smoking status (current versus ex-smoker versus never), anatomical subsite, weight-loss and treatment received. Disease stage was matched for cases (PEG patients) and controls (non-PEG patients).

Results: Of a total of 97 patients, there were 40/97 cases and 57/97 controls. 24/40 patients with oral cavity cancer, 7/40 patients with oropharyngeal cancer, 5/40 with laryngeal cancer, 0/40 with nasopharyngeal cancer and 4/40 with hypopharyngeal cancer required PEG insertion. Univariate analysis identified smoking status, higher stage, subsite, a history of any unplanned admission, less percentage weight-loss and treatment as significant factors associated with PEG placement. However, multivariate analysis demonstrated that only subsite (excluding the nasopharynx, $p = 0.020$), unplanned admission ($p = 0.009$) and weight loss ($p = 0.015$) were statistically significant. Patients with hypopharyngeal tumours were least likely to receive PEGs. Mean percentage weight-loss was 4.0% (7.1kg) greater in non-PEG patients ($p = 0.016$).

Conclusions: PEG placement in patients with advanced HANC may be associated with disease subsite and those with higher unplanned admissions. PEG insertion appears effective in maintaining the weight of HANC patients. A larger study is required to explore potential risk factors further.

Poster Abstracts (cont'd)

CANCER STEM CELLS IN BUCCAL MUCOSAL SQUAMOUS CELL CARCINOMA EXPRESS COMPONENTS OF THE RENIN-ANGIOTENSIN SYSTEM

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Aim: To investigate the expression of components of the renin-angiotensin system (RAS) by the cancer stem cell (CSC) subpopulations within buccal mucosal squamous cell carcinoma (BMSCC).

Methods: 3,3-Diaminobenzidine (DAB) immunohistochemical (IHC) staining was performed on six formalin-fixed paraffin-embedded moderately differentiated BMSCC samples for the expression of components of the RAS: pro(renin) receptor (PRR), angiotensin converting enzyme (ACE), angiotensin II receptor 1 (ATIIR1) and angiotensin II receptor 2 (ATIIR2). NanoString mRNA gene expression analysis and Western Blotting (WB) were performed on snap-frozen BMSCC samples to confirm gene and protein expression, respectively. Immunofluorescent (IF) IHC staining of these components of the RAS with the embryonic stem cell markers OCT4 or SALL4 was performed to demonstrate their localisation to the CSC subpopulations within BMSCC.

Results: DAB IHC staining demonstrated expression of PRR, ACE, ATIIR1 and ATIIR2 in BMSCC. IF IHC staining showed that PRR was expressed by the CSC subpopulations within the tumour nests, the peri-tumoural stroma and the endothelium of the microvessels within the peri-tumoural stroma. ATIIR1 and ATIIR2 were localised to the CSC subpopulations within the tumour nests and the peri-tumoural stroma, while ACE was localised to the endothelium of the microvessels within the peri-tumoural stroma. WB and NanoString analysis confirmed protein expression and transcription activation of PRR, ACE and ATIIR1 but not of ATIIR2, respectively.

Conclusions: Our novel findings of the presence and localisation of PRR, ACE, ATIIR1 and potentially ATIIR2 to the CSC subpopulations within BMSCC suggests CSC as a therapeutic target by modulation of the RAS.

Conflict of Interest Declaration: TI, PFD and STT are inventors of the PCT patent application (No. PCT/NZ2015/050108) Cancer Diagnosis and Therapy.

IDENTIFICATION AND CHARACTERISATION OF CANCER STEM CELLS IN BUCCAL MUCOSAL SQUAMOUS CELL CARCINOMA

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Aim: To identify and characterise cancer stem cells (CSC) in buccal mucosa squamous cell carcinoma (BMSCC).

Methods: 4μm-thick formalin-fixed paraffin-embedded moderately differentiated BMSCC samples from six patients underwent 3,3-diaminobenzidine (DAB) immunohistochemical (IHC) staining for the embryonic stem cell (ESC) markers NANOG, OCT4, SALL4, SOX2 and pSTAT3; cancer stem cell marker CD44; squamous cell carcinoma (SCC) marker EMA; and endothelial marker CD34. Immunofluorescent (IF) IHC staining was performed to investigate co-expression of these markers in two BMSCC samples from this cohort. The transcriptional activities of the genes encoding NANOG, OCT4, SOX2, SALL4, STAT3 and CD44 were studied using NanoString gene expression analysis and colourimetric in situ hybridization (CISH) for NANOG, OCT4, SOX2, SALL4 and STAT3.

Results: DAB and IF IHC staining demonstrated the presence of (1) an EMA+/CD44+/SOX2+/SALL4+/OCT4+/pSTAT3+/NANOG+ CSC subpopulation within the tumour nests; (2) an EMA-/CD44-/CD34-/SOX2+/OCT4+/pSTAT3+/NANOG+ subpopulation within the stroma between the tumour nests; and (3) an EMA-/CD44-/CD34+/SOX2+/ SALL4+/OCT4+/pSTAT3+/NANOG+ subpopulation on the endothelium of the microvessels within the stroma. The expression of CD44, SOX2, SALL4, OCT4, pSTAT3 and NANOG was confirmed by the presence of mRNA transcripts, using NanoString analysis and NANOG, OCT4, SOX2, SALL4 and STAT3 by CISH staining.

Conclusion: This study demonstrated a novel finding of three separate CSC subpopulations within MDBMSCC: (1) within the tumour nests expressing EMA, CD44, SOX2, SALL4, OCT4, pSTAT3 and NANOG; (2) within the stroma expressing SOX2, SALL4, OCT4, pSTAT3 and NANOG; and (3) on the endothelium of the microvessels within the stroma expressing CD34, SOX2, SALL4, OCT4, pSTAT3 and NANOG.

Conflict of Interest Declaration: TI, PFD and STT are inventors of the PCT patent application (No. PCT/NZ2015/050108) Cancer Diagnosis and Therapy.

Poster Abstracts (cont'd)

THE SUPRACLAVICULAR FLAP IN THE FREE FLAP ERA

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Purpose: Supraclavicular flap (SCF) repair is widely reported in head and neck surgery in select patients and defects. The authors' objective is to describe the indications, surgical technique and outcome of the supraclavicular flap repair in an international clinical series of 25 patients with varying defects.

Methodology: A literature review identified 29 articles published between January 2012 and June 2016 that present original clinical experience of 463 supraclavicular flaps. The outcomes reported in the last five years' literature are compared to our experience of 25 cases of SCF.

Results: SCF is suitable for a wide variety of oral cavity, pharyngeal, skull base and cutaneous defects. Consistent with our experience, SCF is highly reliable even in previously irradiated or dissected necks, so long as the supraclavicular artery is intact. The literature reports an average complication rate of 26.1% for minor complications related to supraclavicular flap repair, with complete failure of the flap reported in 17/463 (3.7%) of cases. Preliminary comparison with our case series shows minor complications in 6/25 and flap loss in 1/25 cases.

Conclusion: In conclusion, we add our experience of 25 cases of supraclavicular flap repairs in Australian centres to the international literature. We experienced a similar complication rate and maintain the SCF is a viable alternative where there are relative contraindications for free tissue transfer. With generally shorter operating times, there are circumstances where SCF could be the ideal reconstructive option.

OUTCOMES OF HYPOPHARYNX CANCER TREATED DEFINITIVELY USING HELICAL INTENSITY MODULATED RADIATION THERAPY

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Purpose: Definitive radiotherapy with or without chemotherapy is an established alternative to surgery in the management of hypopharyngeal squamous cell carcinoma (HP SCC). Helical intensity-modulated radiotherapy (H-IMRT) offers similar locoregional control rates compared with conventional radiotherapy, but for patients with locally advanced disease concerns remain over acute and late toxicity, in particular swallowing function and gastrostomy tube dependence. This study assessed oncologic and toxicity outcomes with the adoption of H-IMRT in this clinical setting.

Methodology: Patients undergoing curative intent radiotherapy with H-IMRT with or without concurrent chemotherapy between July 2010 and July 2015 were identified from a prospective database. Treatment response was defined according to established guidelines on post-treatment PET-CT. Acute toxicities were assessed using a standardised scoring system. Locoregional control, overall survival, enteral feeding tube duration and standardised swallowing measures were analysed.

Results: Twenty four consecutive patients were identified who completed definitive treatment, 18 (75%) of whom had concurrent chemotherapy. Median follow up was 15 months (range 4-38 months). Three months after treatment, a complete or partial metabolic response was observed in 21 patients (87.5%). Median enteral feeding tube duration was 247.5 days, with 3 of 21 (14.3%) evaluable patients dependant on their feeding tube at 6 months and 1 patient (5%) at 12 months. Acute grade 3 dysphagia was observed in 7 patients (29.2%). At 24 months, overall survival was 70% and locoregional progression free survival was 73%.

Conclusion: Treatment of patients with HP SCC using H-IMRT is feasible, resulting in oncologic outcomes comparable to conventional radiotherapy techniques. The low rate of gastrostomy dependence and swallowing dysfunction after treatment emphasizes that careful patient selection can result in acceptable toxicity outcomes.

CRITICAL WEIGHT LOSS IN PATIENTS WITH NASOPHARYNGEAL CARCINOMA UNDERGOING RADIOTHERAPY

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Purpose: Weight loss occurs frequently in head and neck cancer (HNC) patients, and the incidence of critical weight loss (CWL), defined as ≥5%, can range from 19-63% in the literature. CWL has been associated with poorer treatment tolerance and worse prognosis in heterogeneous HNC groups. Nasopharyngeal carcinoma (NPC) however, differs from other HNCs due to its unique clinical, anatomical and biological characteristics. The aim of this study was to investigate the prevalence of CWL in NPC patients undergoing radiotherapy (RT) ± chemotherapy, and the use of enteral feeding tubes in this cohort.

Poster Abstracts (cont'd)

Methodology: This is an Area Health Ethics Board approved (HREC11/070), single-institution retrospective study of adult patients with NPC who received RT ± chemotherapy at The Prince of Wales Hospital between 2005-2015. Weights were collected pre-RT and in the final week of RT, with percentage weight change measured against baseline. Patients were dichotomised into: CWL and no CWL, and analysed with respect to clinical variables.

Results: Forty-three patients were evaluated, majority being male (80%), and most patients received concurrent chemoradiotherapy (70%). Mean percentage weight change during RT was -8.5% (Range; -21% - +6%). CWL was evident in 80% (n=34) of patients, a significantly higher proportion when compared to HNC figures ($p<0.05$). Feeding tubes were used in 16 (37%) patients, with 11 (26%) inserted reactively during treatment. Mean weight loss was highest in the reactive group at 10.4%.

Conclusion: A higher proportion of our patients with NPC experienced CWL when compared to other HNC groups, with the highest losses in those requiring reactive feeding. NPC patients are at nutritional risk and require regular monitoring during treatment. Further investigation is required into possible contributors to CWL.

THE EFFECT OF NUTRITION IMPACT SYMPTOMS ON WEIGHT LOSS AND THE NEED FOR TUBE FEEDING IN HEAD AND NECK CANCER PATIENTS

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Purpose: It has been well established that malnutrition is common among patients with head and neck cancer (HNC) either at time of diagnosis, during treatment and for periods after treatment. Various nutrition impact symptoms can manifest during treatment and become barriers to oral intake, making it difficult for patients to meet their nutritional requirements and maintain weight. Dysguesia, xerostomia, mucositis, odynophagia and reduced appetite were investigated in this study with relation to weight loss and the need for feeding tubes during and post treatment.

Methodology: This Area Ethics approved (HREC11/070), single institution, retrospective study included all adult patients with HNC (larynx, hypopharynx, nasopharynx (NPC), oropharynx and oral cavity) treated with radiotherapy (RT) ± chemotherapy at The Prince of Wales Hospital (2005-2015). Nutritional data was collected at time points during and up to 6 months post treatment. Percentage weight change was calculated against baseline for each time point. Feeding tube use, timing and duration was also collated.

Results: A total of 394 patients were evaluated, the majority having oropharynx cancer (37%). Thirty-six percent (n=142) had concurrent chemoradiotherapy. Patients with NPC had the highest weight loss during RT (8.5%). Feeding tubes were used in 40% of the cohort, the majority (47%) inserted as a reactively. Mucositis and subsequent odynophagia were the main barriers of oral intake up to 6 weeks post RT and the main reason for tube feeding (65%). Only 30 (19%) required enteral feeding 6 months post with only 3 being tube-dependent without significant symptoms affecting oral intake.

Conclusion: Nutrition impact symptoms are clinically significant barriers to oral intake, and it is envisaged that further investigation will help guide nutritional management of our HNC patients.

THE EVOLUTION OF THE HEAD AND NECK CANCER EDUCATION AND SUPPORT GROUP AT LIVERPOOL HOSPITAL IN SYDNEY: FROM FOUNDATIONS TO THE FUTURE

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The Liverpool Hospital, NSW, Australia

Purpose: Holistic care is an important component of best practice service provision in treating cancer. The Cancer Therapy Centre at Liverpool Hospital (LCTC) successfully established the Head and Neck (H&N) Cancer Pre-Treatment Clinic in 2010. Experience with the clinic suggested that patients and carers needed ongoing support subsequent to their diagnosis. In response, the H&N Education and Support Group was introduced in 2013. This presentation outlines the foundations and implementation of the support group, and the current challenges as it looks to continue into the future.

Methodology: The group is coordinated by a multidisciplinary team. Meetings are held monthly for 2 hours at Liverpool Hospital. Patients and carers at any point during the cancer journey can attend. The program includes education and peer support to improve understanding and coping with a diagnosis of H&N cancer, and to manage holistic distress. At each session, participants complete a purpose-designed session evaluation questionnaire, which includes an 11-point single item global satisfaction scale anchored by Poor (0) and Excellent (10).

Poster Abstracts (cont'd)

Results: Nine or 10 sessions have been held annually over the past 3 years (2013-2015). Mean global satisfaction scores for the sessions has been strong (2013, 8.6±2.7, n=89; 2014, 8.6±0.2, n=72; 2015, 9.2±0.4, n=34, missing data for four sessions). Some of the challenges have been the difficulty recruiting and retaining new group members; a recent drop in number of attendees; feedback from members about the repetitious nature of information being presented; and difficulties catering for patients with dysphagia diagnoses.

Conclusions: New strategies are being explored to ensure the continuation of a successful support group into the future.

AGGRESSIVE GROWTH OF AN INCOMPLETELY EXCISED PRIMARY CUTANEOUS BASAL CELL CARCINOSARCOMA ON THE SCALP: A CASE REPORT

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Primary cutaneous carcinosarcoma is a biphasic tumour containing both malignant epithelial and mesenchymal elements. This disease is a rare malignant skin tumour, of unknown aetiology, with significant potential to recur locally and to metastasis. We report a 76-year-old male country patient who was referred to the plastic surgery department for the management of an incompletely excised basal cell carcinosarcoma (BCCS) of scalp. He subsequently had a wide local excision that showed a histologically aggressive residual BCCS with brisk mitotic activities. He remained disease-free at 12 months follow up. The long-term prognosis of this rare tumour remains unclear. Prompt wide local excision is recommended in all cases, and adjuvant chemotherapy and radiotherapy are indicated in recurrent disease.

LINK OF BP180 BULLOUS PEMPHIGOID AUTOANTIGEN TO INVASION OF ORAL SQUAMOUS CARCINOMA CELL

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Purpose: Cancer cells generally exhibit reduced adhesion molecule expression or function resulting in release of their substrate, and freeing cells to pile up, migrate, or invade. Hemidesmosomes are multiprotein structures that attach basal cells of stratified epithelia to basement membranes not only in normal epithelium but also in cancer microenvironment. In this study, we focused the role of BP180 bullous pemphigoid autoantigen, a major component of the hemidesmosome plaque, in oral squamous carcinoma cell (OSCC) invasion.

Methodology: This study discusses the data on expression level and localization of BP180 in oral squamous carcinoma cells (OSCCs) and its role in carcinoma invasion. All experiments were performed by use of human tongue carcinoma (SQUU-A, SQUU-B, NA, and SAS) and gingival carcinoma (Ca9-22 and Sa3) cell lines. For invasion assays, 8-μm-pore transwell inserts coated with Matrigel® were used. The expression level of BP180 was investigated by realtime PCR and western blotting methods. To examine localization of BP180, we used a 3-D structure culture spheroid that was formed with Ultra-low attachment plate and embedded in Matrigel®.

Results and Conclusion: Our realtime PCR and western blotting analysis revealed that BP180 was expressed in SQUU-A, NA, Ca9-22, and Sa3, while hardly expressed in SQUU-B and SAS cells. As tongue carcinoma SQUU-A (non-metastatic) and SQUU-B (highly metastatic) cell lines were established from the same patient, we took particular note of the difference in cell invasion patterns between SQUU-A and SQUU-B. As a result, invasive ability of SQUU-B cells was markedly greater than that of SQUU-A cells. These data indicate that expression level of BP180 undertakes crosstalk between malignant cell and its invasive ability, which may define clinical prognosis.

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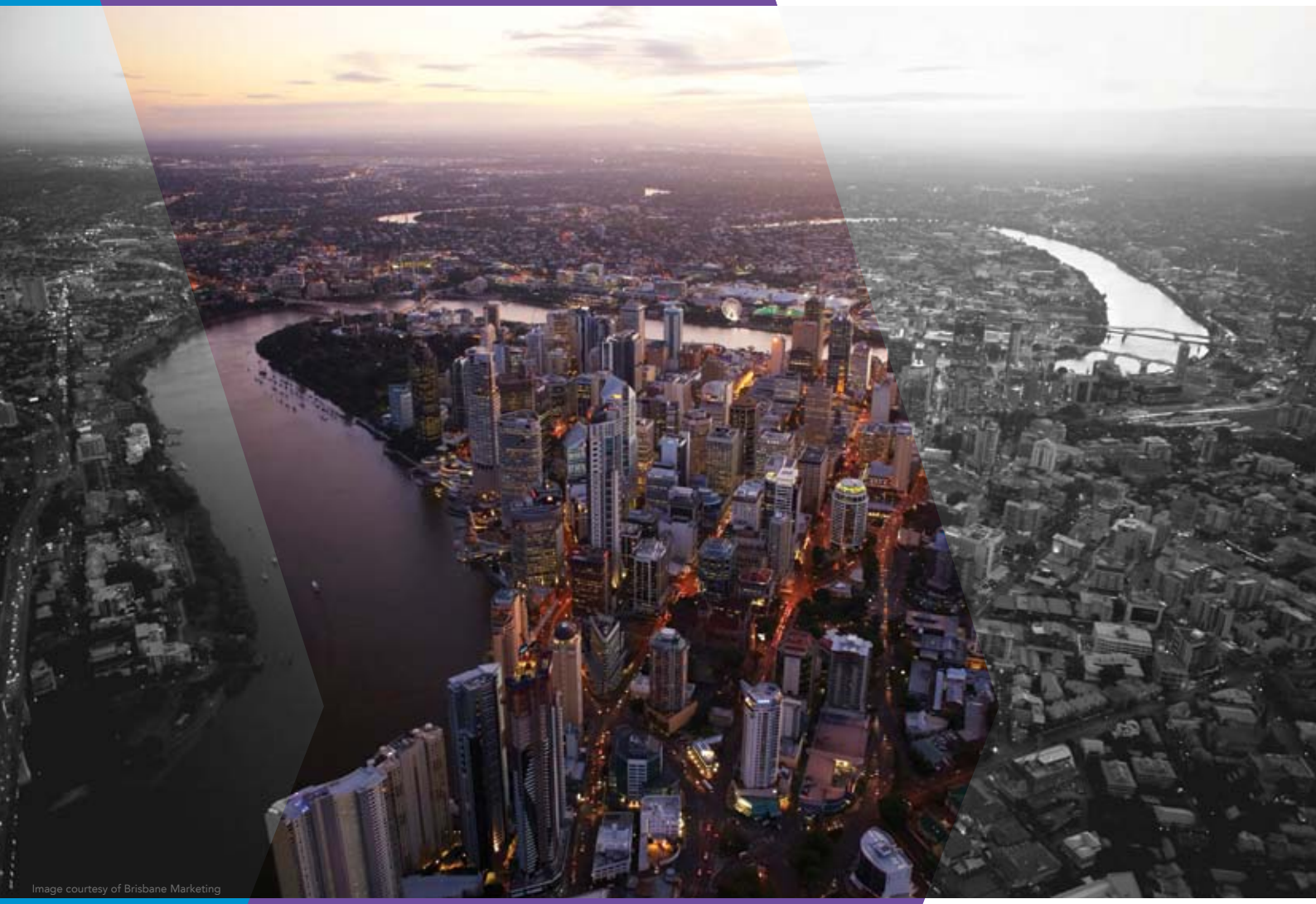

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