

# JOINT SCIENTIFIC MEETING 2021 ANZHNCs and NZAPS

Australian and New Zealand Head and Neck Cancer Society  
and the New Zealand Association of Plastic Surgeons

*Innovation through collaboration*



5-8 August 2021  
QT/Rydges  
Queenstown  
New Zealand

[anzhncsnzaps2020.w.events4you.currinda.com](http://anzhncsnzaps2020.w.events4you.currinda.com)

Meeting Handbook 2021

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## Wifi / Internet

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**QQueenstown**

# Local Organising Committee

Fiona Smithers

Cathy Ferguson

Swee Tan

Han Kim

Michelle Locke

Nick Marshall

Jonathan Graham

Liv Thompson-Williams

Meeting Organiser: Sally Boulton, Events 4 You Limited

# Message from the Convenors

On behalf of the organising committee, it is our pleasure to welcome everyone, whether attending in person or virtually, to the 22nd Australia and New Zealand Head and Neck Cancer Society Annual Scientific Meeting, and the 45th New Zealand Association of Plastic Surgeons Annual Scientific Meeting, held together in Queenstown, New Zealand.

This conference has evolved and metamorphosed many times since we started planning two years ago. As our world has changed, sometimes on a daily basis, since the beginning of 2020, so too have the format, program and attendance options. Despite moving the conference in its entirety from August 2020 to August 2021, we are delighted that our international keynote speakers have been willing to continue to take the time to contribute so enthusiastically to our multidisciplinary program, along with our local New Zealand and Australian faculty.

We would also like to extend our thanks to our patient and supportive industry partners who are supporting the meeting this year. I am sure that all our members appreciate the significance of sponsorship in contributing to the success of this event.

We hope that you enjoy the educational content and that those of you fortunate enough to be able to attend in person, take the opportunity to expand professional contacts and catch up with colleagues, as well as enjoying some of the amazing sights on offer in Queenstown.

Ngā manaakitanga



**Fiona Smithers**  
Convenor  
ANZHNCs 2021



**Michelle Locke**  
Convenor  
NZAPS 2021

# Associations

## Australian & New Zealand Head & Neck Cancer Society



The Australian and New Zealand Head and Neck Cancer Society (ANZHNCS) was formed in 1998 by a group of head and neck oncologists with a simple goal: to promote quality care for all head and neck cancer patients.

Through leading a multi-disciplinary approach to education, research, care and advocacy, the ANZHNCS has been able to minimise the impact of head and neck cancer for thousands of patients. It aims to:

- Promote collaboration and interdisciplinary team building between medical and allied health specialists with a major interest in managing head and neck cancer throughout Australia and New Zealand.
- Be a pathway of contact and building collaborative relationships with multidisciplinary international head and neck cancer societies.
- Support research in head and neck cancer, and the sharing of knowledge.

## New Zealand Association of Plastic Surgeons



The New Zealand Association of Plastic Surgeons is a non-profit, professional association devoted to the maintenance of excellent ethical and professional standards within the field of cosmetic and reconstructive plastic surgery. Established in August 1976 as the New Zealand Association of Plastic and Reconstructive Surgeons, the Association now represents most of New Zealand's plastic surgeons and provides a strong voice for plastic surgeons in discussions with the government, the Ministry of Health and bodies such as the Medical Council of New Zealand. NZAPS is committed to upholding the highest standards of ethical practice in which the patient's safety and welfare are the first consideration and to upholding the highest standards of surgical excellence, both in clinical practice and in the training of future specialists.

# Program

## Thursday 5 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>08:00 onwards</b>				Level 4 Foyer
<b>09:00 – 09:05</b>	07:00 – 07:05	06:30 – 06:35	06:00 – 06:05	
<b>09:05 – 09:35</b>	07:05 – 07:35	06:35 – 07:05	06:05 – 06:35	
<b>09:35 – 09:55</b>	07:35 – 07:55	07:05 – 07:25	06:35 – 06:55	
<b>09:55 – 10:20</b>	07:55 – 08:20	07:25 – 07:50	06:55 – 07:20	
<b>10:20 – 10:30</b>	08:20 – 08:30	07:50 – 08:00	07:20 – 07:30	

## Presentation / Presenter

LS = Livestream

4 Digit No. Relates to Abstract #ID (where provided)

## Registration

### Official Welcome

Brian Stein,<sup>LS</sup> President, ANZHNCS

Fiona Smithers, Convenor, ANZHNCS 2021

### CHRIS O'BRIEN ORATION: "Chris O'Brien - The little master" surgical expertise

John Chaplin, Auckland City Hospital

### ANZHNCS PLENARY SESSION 1

Moderators: Fiona Smithers & Cathy Ferguson

### KEYNOTE: The era of nanotechnology: How will head and neck surgery change in the future?

Jonathan Irish,<sup>LS</sup> University of Toronto, Canada

### KEYNOTE: Thyroid nodules and cancer: current concepts

Jonathan Irish,<sup>LS</sup> University of Toronto, Canada

### Q&A

Jonathan Irish,<sup>LS</sup> University of Toronto, Canada

## Thursday 5 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>10:30 – 11:00</b>	08:30 – 09:00	08:00 – 08:30	07:30 – 08:00	Coronet/ Remarkables Room Level 4
<b>11:00 – 11:20</b>	09:00 – 09:20	08:30 – 08:50	08:00 – 08:20	
<b>11:20 – 11:40</b>	09:20 – 09:40	08:50 – 09:10	08:20 – 08:40	
<b>11:40 – 11:50</b>	09:40 – 09:50	09:10 – 09:20	08:40 – 08:50	
<b>11:50 – 12:10</b>	09:50 – 10:10	09:20 – 09:40	08:50 – 09:10	
<b>12:10 – 12:30</b>	10:10 – 10:30	09:40 – 10:00	09:10 – 09:30	
<b>12:30 – 12:45</b>	10:30 – 10:45	10:00 – 10:15	09:30 – 09:45	
<b>12:45 – 13:45</b>	10:45 – 11:45	10:15 – 11:15	09:45 – 10:45	Coronet/ Remarkables Room Level 4



**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

**Morning Tea Break**

Barista Coffee Sponsored by:



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ANZHNCS PLENARY SESSION 2

Moderators: Han Kim & Liv Thompson-Williams

**The value of considering functional outcomes in voice and swallowing at the outset of treatment, in the context of the MDT**

Jacqui Allen, Northshore Hospital

**Swallowing and speech outcomes in head and neck cancer – the long game**

Anna Miles, University of Auckland

**Q&A** Jacqui Allen & Anna Miles

**KEYNOTE: Bringing science from the clinic, to the lab, and back again**

Randall Kimple, <sup>LS</sup> University of Wisconsin

**KEYNOTE: Are we ready to de-escalate for HPV+ cancers?**

Randall Kimple, <sup>LS</sup> University of Wisconsin

**Q&A:** Randall Kimple, <sup>LS</sup> University of Wisconsin

**Lunch Break**

## Thursday 5 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>13:45 – 14:05</b>	11:45 – 12:05	11:15 – 11:35	10:45 – 11:05	
<b>14:05 – 14:25</b>	12:05 – 12:25	11:35 – 11:55	11:05 – 11:25	
<b>14:25 – 14:45</b>	12:25 – 12:45	11:55 – 12:15	11:25 – 11:45	
<b>14:45 – 15:05</b>	12:45 – 13:05	12:15 – 12:35	11:45 – 12:05	
<b>15:05 – 15:20</b>	13:05 – 13:20	12:35 – 12:50	12:05 – 12:20	
<b>15:20 – 15:40</b>	13:20 – 13:40	12:50 – 13:10	12:20 – 12:40	
<b>15:40 – 16:10</b>	13:40 – 14:10	13:10 – 13:40	12:40 – 13:10	Coronet/ Remarkables Room Level 4
<b>16:10 – 16:15</b>	14:10 – 14:15	13:40 – 13:45	13:10 – 13:15	
<b>16:15 – 16:25</b>	14:15 – 14:25	13:45 – 13:55	13:15 – 13:25	

**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

ANZHNCS PLENARY SESSION 3

Moderators: Jonathan Graham & Cathy Ferguson

**The oral cancer tumour environment**

Alison Rich, Dunedin School of Medicine

**KEYNOTE: Immunotherapy in non-melanoma cutaneous cancer**

Danny Rischin, <sup>LS</sup> Peter MacCallum Cancer Centre

**KEYNOTE: Overview and update on HPV+ oropharynx cancer**

Danny Rischin, <sup>LS</sup> Peter MacCallum Cancer Centre

**KEYNOTE: Immunotherapy and biomarkers for mucosal SCC**

Danny Rischin, <sup>LS</sup> Peter MacCallum Cancer Centre

**Q&A:** Danny Rischin, <sup>LS</sup> Peter MacCallum Cancer Centre

**Auckland thyroid FNA audit**

John Chaplin, Auckland City Hospital

**Afternoon Tea Break**

Nadia Rosin, <sup>LS</sup> CEO Head and Neck Cancer Australia



**Profiling the oral microbiome in novel barrier impaired mouse models of OSCC** <sup>1432</sup>

Charbel Darido, <sup>LS</sup> University of Melbourne, 2020 ANZHNCS Research Foundation Prize Recipient

## Thursday 5 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)	
<b>16:25 – 16:35</b>	14:25 – 14:35	13:55 – 14:05	13:25 – 13:35		
<b>16:35 – 16:45</b>	14:35 – 14:45	14:05 – 14:15	13:35 – 13:45		
<b>16:45 – 16:55</b>	14:45 – 14:55	14:15 – 14:25	13:45 – 13:55		
<b>16:55 – 17:05</b>	14:55 – 15:05	14:25 – 14:35	13:55 – 14:05		
<b>17:05 – 17:15</b>	15:05 – 15:15	14:35 – 14:45	14:05 – 14:15		
<b>17:15 – 17:25</b>	15:15 – 15:25	14:45 – 14:55	14:15 – 14:25		

**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

**A comparison of the genomic profiles of young and old patients with oral squamous cell carcinoma demonstrates a higher rate of EGFR copy number variation in younger patients** <sup>1435</sup>

Laveniya Satgunaseelan,<sup>LS</sup> University of Sydney for Ruta Gupta (PI) 2019 ANZHNCs Research Foundation Grant Recipient

**A proteomic signature of treatment response in HPV-related oropharyngeal cancer** <sup>1434</sup>

Lachlan Cook,<sup>LS</sup> Flinders University for Tami Yap (PI) 2019 Herschel Wiesenfeld Grant Recipient

**Exploiting 3-D models of salivary gland adenoid cystic carcinoma to discover novel therapies and biological insights** <sup>1433</sup>

Rob Ramsay,<sup>LS</sup> Peter MacCallum Cancer Centre, 2019 ANZHNCs Research Foundation Grant Recipient

**Application of a clinical framework to map speech pathology service capabilities and potential cost savings to enhance head and neck cancer care in regional areas** <sup>1358</sup>

Amy Ashley,<sup>LS</sup> Townsville Hospital

**Therapeutic potential for the treatment of adenoid cystic carcinoma** <sup>1386</sup>

James Nightingale,<sup>LS</sup> Princess Alexandra Hospital for Ben Panizza (PI) 2019 ANZHNCs Research Foundation Grant Recipient

**Outcomes of osseointegrated implants in head and neck cancer patients** <sup>1211</sup>

Darius Khadembaschi,<sup>LS</sup> University of Queensland

**Free Evening**

## Friday 6 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>07:15 – 08:45</b>	05:15 – 06:45	04:45 – 06:15	04:15 – 05:45	Clancy’s Room, Level 5 (livestreamed but not recorded)
<b>09:00 – 09:05</b>	07:00 – 07:05	06:30 – 06:35	06:00 – 06:05	
<b>09:05 – 09:35</b>	07:05 – 07:35	06:35 – 07:05	06:05 – 06:35	
<b>09:35 – 09:55</b>	07:35 – 07:55	07:05 – 07:25	06:35 – 06:55	
<b>09:55 – 10:15</b>	07:55 – 08:15	07:25 – 07:45	06:55 – 07:15	
<b>10:15 – 10:35</b>	08:15 – 08:35	07:45 – 08:05	07:15 – 07:35	

**Presentation / Presenter**

LS = Livestream

4 Digit No. Relates to Abstract #ID (where provided)

**MSD Breakfast:**

Current management of complex stage III & IV melanoma of the head & neck: a live MDM session



ANZHNCS/NZAPS PLENARY SESSION 4

Moderators: Fiona Smithers & Chris Adams

**Welcome to Joint Day**

Chris Adams, NZAPS President

Brian Stein,<sup>LS</sup> ANZHNCS President

**KEYNOTE: Comprehensive facial reconstruction: microsurgical and non-microsurgical techniques**

Stefan Hofer,<sup>LS</sup> University of Health Network, Toronto

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**Facial reanimation – My personal approach**

Swee Tan, Hutt Hospital

**Facial nerve rehabilitation following surgical reconstruction**

Susan Coulson,<sup>LS</sup> University of Sydney

**BLINC update**

Shaheen Hasmat,<sup>LS</sup> Chris O'Brien Lifehouse

## Friday 6 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>10:35 – 11:05</b>	08:35 – 09:05	08:05 – 08:35	07:35 – 08:05	Coronet/ Remarkables Room Level 4
<b>11:05 – 11:25</b>	09:05 – 09:25	08:35 – 08:55	08:05 – 08:25	
<b>11:25 – 11:45</b>	09:25 – 09:45	08:55 – 09:15	08:25 – 08:45	
<b>11:45 – 12:05</b>	09:45 – 10:05	09:15 – 09:35	08:45 – 09:05	
<b>12:05 – 12:15</b>	10:05 – 10:15	09:35 – 09:45	09:05 – 09:15	
<b>12:15 – 12:25</b>	10:15 – 10:25	09:45 – 09:55	09:15 – 09:25	
<b>12:25 – 13:25</b>	10:25 – 11:25	09:55 – 10:55	09:25 – 10:25	Coronet/ Remarkables Room Level 4



**Presentation / Presenter**

LS = Livestream

4 Digit No. Relates to Abstract #ID (where provided)

**Morning Tea Break**

ANZHNCS/NZAPS SESSION 5

Moderators: Jonathan Graham & Cathy Ferguson

**Crossover in head and neck reconstruction**

Jon Mathy, University of Auckland School of Medicine

**Virtual surgical planning**

David Leinkram,<sup>LS</sup> Chris O'Brien Lifehouse

**“I’d love to have some teeth!”: The role of the prosthodontist in post-surgical reconstruction**

Andrew Cautley, Specialist Prosthodontist, Nelson

**Effect of introduction of surgeon-performed ultrasound to a head and neck surgical oncology clinic<sup>1228</sup>**

Matthew Kwok,<sup>LS</sup> Peter MacCallum Cancer Centre

**Proteomic analysis of HPV-positive oropharyngeal cancer: Predicting who won’t respond<sup>1246</sup>.**

Christopher Jackson,<sup>LS</sup> Queensland Health

**Lunch Break**

## Friday 6 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>13:25 – 14:10</b>	11:25 – 12:10	10:55 – 11:40	10:25 – 11:10	
<b>14:10 – 14:35</b>	12:10 – 12:35	11:40 – 12:05	11:10 – 11:35	
<b>14:35 – 14:45</b>	12:35 – 12:45	12:05 – 12:15	11:35 – 11:45	
<b>14:45 – 15:05</b>	12:45 – 13:05	12:15 – 12:35	11:45 – 12:05	
<b>15:05 – 15:25</b>	13:05 – 13:25	12:35 – 12:55	12:05 – 12:25	
<b>15:25 – 15:45</b>	13:25 – 13:45	12:55 – 13:15	12:25 – 12:45	
<b>15:45 – 15:55</b>	13:45 – 13:55	13:15 – 13:25	12:45 – 12:55	
<b>15:55 – 16:25</b>	13:55 – 14:25	13:25 – 13:55	12:55 – 13:25	Coronet/ Remarkables Room Level 4

**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

ANZHNCS/NZAPS SESSION 6

Moderators: Han Kim & Will McMillan

**KEYNOTE: The tsunami after the earthquake: The effects of Covid-19 on cancer services in Canada**

Jonathan Irish,<sup>LS</sup> University of Toronto

**KEYNOTE: Using performance data to improve cancer care: The Ontario Cancer Care experience**

Jonathan Irish,<sup>LS</sup> University of Toronto

**Q&A:**

Jonathan Irish,<sup>LS</sup> University of Toronto

**KEYNOTE: Early melanoma: Surgical and medical management in the modern era**

Inês Silva,<sup>LS</sup> Melanoma Institute Australia and The University of Sydney

**KEYNOTE: Advanced melanoma: What surgeons should know**

Inês Silva,<sup>LS</sup> Melanoma Institute Australia and The University of Sydney

**KEYNOTE: Current management of complex skin cancer**

Inês Silva,<sup>LS</sup> Melanoma Institute Australia and The University of Sydney

**Q&A:**

Inês Silva,<sup>LS</sup> Melanoma Institute Australia and The University of Sydney

**Afternoon Tea Break**

# Friday 6 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>16:25 – 16:35</b>	14:25 – 14:35	13:55 – 14:05	13:25 – 13:35	
<b>16:35 – 16:45</b>	14:35 – 14:45	14:05 – 14:15	13:35 – 13:45	
<b>16:45 – 16:55</b>	14:45 – 14:55	14:15 – 14:25	13:45 – 13:55	
<b>16:55 – 17:05</b>	14:55 – 15:05	14:25 – 14:35	13:55 – 14:05	
<b>17:05 – 17:15</b>	15:05 – 15:15	14:35 – 14:45	14:05 – 14:15	
<b>17:15 – 17:25</b>	15:15 – 15:25	14:45 – 14:55	14:15 – 14:25	

**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

ANZHNCS FREE PAPERS SESSION 7

Liv Thompson-Williams & Dylan James

**Presence of transcription factors involved in pluripotency in head and neck mucoepidermoid carcinoma** <sup>1378</sup>

Umaima Khatoon, Gillies McIndoe Research Institute, 2020 Head & Neck Foundation Aotearoa Grant Recipient

**Evaluation of a streamlined head and neck service from conception to delivery of service with enhanced recovery regimes: a 12 months experience in Waikato** <sup>1380</sup>

Eric Tan, Waikato DHB

**Osteointegrated implants for prosthetic based ear/eye reconstruction: a 15 years case series at Waikato DHB** <sup>1385</sup>

Luxi Sun, Waikato DHB

**Return to work after trans-oral robotic surgery for oropharyngeal SCC**

<sup>1418</sup>

Lorne Green,<sup>LS</sup> Peter MacCallum Cancer Centre

**Comparison study of dysphagia at 12 months following transoral robotic surgery and definitive chemo-radiation for oropharyngeal squamous cell carcinoma** <sup>1224</sup>

Emma Charters,<sup>LS</sup> Chris O'Brien Lifehouse

**Expression of Cathepsins B, D and G in metastatic head and neck cutaneous squamous cell carcinoma** <sup>1431</sup>

Felix Humphries, for Helen Brasch (PI) 2019 ANZHNCS Research Foundation Grant Recipient

# Friday 6 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)	
<b>17:25 – 17:35</b>	15:25 – 15:35	14:55 – 15:05	14:25 – 14:35		
<b>17:35 – 17:45</b>	15:35 – 15:45	15:05 – 15:15	14:35 – 14:45		
<b>17:45 – 17:55</b>	15:45 – 15:55	15:15 – 15:25	14:45 – 14:55		
<b>17:55 – 18:10</b>	15:55 – 16:10	15:25 – 15:40	14:55 – 15:10		
<b>18:10 – 19:40</b>					

**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

**An ex vivo examination of oral cancer-derived exosomes** <sup>1362</sup>

Mohammad Aziz, University of Otago, for Benedict Seo (PI) 2020 Head & Neck Foundation Aotearoa Grant Recipient

**Nutritional status and skeletal muscle status in patients with head and neck cancer: Impact on outcomes and implications for practice** <sup>1396</sup>

Merran Findlay,<sup>LS</sup> Chris O'Brien Lifehouse

Judges retire for deliberation

**Review of patient perceptions and accessibility using telehealth consultations in an outpatient head and neck cancer setting** <sup>1424</sup>

Kaman Dhillon,<sup>LS</sup> Peter MacCullum Cancer Centre

**Presentation of ANZHNCS Prizes**

**Announcement of 2022 ANZHNCS & NZAPS Meetings**

ANZHNCS Prizes sponsored by:



**Welcome Function and Poster Viewing**

Poster Kiosks sponsored by:



## Saturday 7 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>08:00 Onwards</b>				Level 5, Foyer Area
<b>08:30 – 08:55</b>	06:30 – 06:55	06:00 – 06:25	05:30 – 05:55	
<b>08:55 – 09:20</b>	06:55 – 07:20	06:25 – 06:50	05:55 – 06:20	
<b>09:20 – 09:30</b>	07:20 – 07:30	06:50 – 07:00	06:20 – 06:30	
<b>09:30 – 09:50</b>	07:30 – 07:50	07:00 – 07:20	06:30 – 06:50	
<b>09:50 – 10:00</b>	07:50 – 08:00	07:20 – 07:30	06:50 – 07:00	
<b>10:00 – 10:30</b>	08:00 – 08:30	07:30 – 08:00	07:00 – 07:30	Coronet/ Remarkables Room Level 4



**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

Registration

NZAPS PLENARY SESSION 8: Breast Reconstruction

Moderators: Sandy Deo & Jonathan Wheeler

**KEYNOTE: Aesthetic breast reconstruction with autologous tissue free flaps**

Stefan Hofer,<sup>LS</sup> University of Health Network, Toronto

**KEYNOTE: Implant-based breast reconstruction: Change of practice over the past 5 years**

Stefan Hofer,<sup>LS</sup> University of Health Network, Toronto

Sponsored by:



**Q&A: Stefan Hofer**

**The free abdominoplasty flap in breast reconstruction – the untold story** <sup>1236</sup>

Richard Hamilton,<sup>LS</sup> Hamilton House Plastic Surgery

Questions / Discussion

**Morning Tea Break**

Barista Coffee Sponsored by:



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## Saturday 7 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>10:30 – 10:45</b>	08:30 – 08:45	08:00 – 08:15	07:30 – 07:45	
<b>10:45 – 11:45</b>	08:45 – 09:45	08:15 – 09:15	07:45 – 08:45	
<b>11:45 – 12:15</b>	09:45 – 10:15	09:15 – 09:45	08:45 – 09:15	
<b>12:15 – 13:15</b>	10:15 – 11:15	09:45 – 10:45	09:15 – 10:15	Coronet/ Remarkables Room Level 4
<b>13:15 – 13:45</b>	11:15 – 11:45	10:45 – 11:15	10:15 – 10:45	
<b>13:45 – 14:45</b>	11:45 – 12:45	11:15 – 12:15	10:45 – 11:45	
<b>14:45 – 15:15</b>	12:45 – 13:15	12:15 – 12:45	11:45 – 12:15	Coronet/ Remarkables Room Level 4
<b>15:15 – 17:00</b>				Clancy's Room Level 5
<b>19:00 – till late</b>				8 Duke Street, Queenstown CBD

**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

NZAPS PLENARY SESSION 9: Microsurgery

Moderators: Chris Adams & Michelle Locke

**KEYNOTE: Microsurgery 101: Making microsurgery simple and successful**

Stefan Hofer,<sup>LS</sup> University Health Network, Toronto

**Panel: Complications in microsurgery and how I manage them**

Stefan Hofer,<sup>LS</sup>, Swee Tan, Jon Mathy,<sup>LS</sup> David Morgan Jones

NZAPS PLENARY SESSION 10

Chairperson: Chris Adams

**RACS President's Oration**

Sally Langley, President, Royal Australasian College of Surgeons

**Lunch Break**

NZAPS RESEARCH SESSION 11: General Plastic Surgery

Moderators: Swee Tan & Kirk Williams

**Reflections on 30 years of practice in New Zealand**<sup>1203</sup>

David Glasson, Plastic Surgery Specialists

**Burnout in Plastic Surgeons**

Dan Kennedy,<sup>LS</sup> Australian Society of Plastic Surgeons

**Afternoon Tea Break**

**NZAPS AGM**

Open to NZAPS members only (not livestreamed)

**Conference Dinner**

Jervois Steak House

# Sunday 8 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>09:00 – 09:20</b>	07:00 – 07:20	06:30 – 06:50	06:00 – 06:20	
<b>09:20 – 09:30</b>	07:20 – 07:30	06:50 – 07:00	06:20 – 06:30	
<b>09:30 – 09:40</b>	07:30 – 07:40	07:00 – 07:10	06:30 – 06:40	
<b>09:40 – 09:50</b>	07:40 – 07:50	07:10 – 07:20	06:40 – 06:50	
<b>09:50 – 10:00</b>	07:50 – 08:00	07:20 – 07:30	06:50 – 07:00	
<b>10:00 – 10:10</b>	08:00 – 08:10	07:30 – 07:40	07:00 – 07:10	

## Presentation / Presenter

LS = Livestream

4 Digit No. Relates to Abstract #ID (where provided)

NZAPS RESEARCH SESSION 12

Moderators: Arthur Yang & Justin Parr

### How and where to get your work published

Stefan Hofer,<sup>LS</sup> University Health Network, Toronto

Sponsored by:



## Research Presentations

### A review of locoregional reconstructive options for cutaneous periauricular defects in the era of microsurgery <sup>1399</sup>

Daniel Lake,<sup>LS</sup> Greenslopes Hospital

### Case series: Immediate targeted muscle reinnervation in two quadruple amputees <sup>1239</sup>

Emma-Leigh Rudduck,<sup>LS</sup> Alfred Health

### When pre-operative imaging fails to identify the sentinel lymph node(s) <sup>1338</sup>

Sonya Cameron, South District Health Board

### Spring-assisted cranioplasty for sagittal craniosynostosis – Our 10 year experience <sup>1348</sup>

Fangbo (Bobby) Lin, Middlemore Hospital

### Finishing the job: review of techniques for revision and refinement in head and neck reconstruction <sup>1335</sup>

Caitlyn Withers,<sup>LS</sup> Queensland Health

# Sunday 8 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>10:10 – 10:20</b>	08:10 – 08:20	07:40 – 07:50	07:10 – 07:20	
<b>10:20 – 10:50</b>	08:20 – 08:50	07:50 – 08:20	07:20 – 07:50	Coronet/ Remarkables Room Level 4
<b>10:50 – 11:05</b>	08:50 – 09:05	08:20 – 08:35	07:50 – 08:05	
<b>11:05 – 11:15</b>	09:05 – 09:15	08:35 – 08:45	08:05 – 08:15	
<b>11:15 – 11:25</b>	09:15 – 09:25	08:45 – 08:55	08:15 – 08:25	
<b>11:25 – 11:35</b>	09:25 – 09:35	08:55 – 09:05	08:25 – 08:35	
<b>11:35 – 11:45</b>	09:35 – 09:45	09:05 – 09:15	08:35 – 08:45	

**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

**Highlighting the value a breast reconstruction clinical nurse specialist brings to a plastic surgery unit** <sup>1368</sup>

Jessica Papali'i-Curtin, Hutt Hospital

**Morning Tea Break**

NZAPS RESEARCH SESSION 13

Moderators: Michelle Locke & Justin Parr

**Finding a Mentor and Being a Mentee**

Michelle Locke, CMDHB and University of Auckland

**Indocyanine green fluoroscopy in free flap surgery: a single surgeon's experience in Waikato** <sup>1395</sup>

Luxi Sun, Waikato DHB

**Extended use of antimicrobial silver dressings:**

**An in vitro health economics study** <sup>1387</sup>

Andrew May,<sup>LS</sup> University of South Australia

**Streamlined plastic allocation of resources and tactics against Covid19 (SpartanCov19): a Waikato DHB experience** <sup>1390</sup>

Yang Gao, Waikato DHB for YinQian (Jason) Low, Waikato DHB

**The effects of COVID-19 in plastic surgery emergencies: What have we learned?** <sup>1367</sup>

Robert Phan,<sup>LS</sup> Western Health

# Sunday 8 August 2021

Time NZT	Time AEST -2	Time CST -2.5	Time WA -3	Location: Queenstown Room, Level 5 / livestreamed (unless otherwise stated)
<b>11:45 – 11:55</b>	09:45 – 09:55	09:15 – 09:25	08:45 – 08:55	
<b>11:55 – 12:05</b>	09:55 – 10:05	09:25 – 09:35	08:55 – 09:05	
<b>12:05 – 12:15</b>	10:05 – 10:15	09:35 – 09:45	09:05 – 09:15	
<b>12:15 – 12:25</b>	10:15 – 10:25	09:45 – 09:55	09:15 – 09:25	
<b>12:25 – 12:35</b>	10:25 – 10:35	09:55 – 10:05	09:25 – 09:35	
<b>12:35 – 13:35</b>				Coronet/ Remarkables Room Level 4



**Presentation / Presenter**

**LS = Livestream**

**4 Digit No. Relates to Abstract #ID (where provided)**

**Does a same day ‘See and Treat’ clinic improve skin cancer excision rates?** <sup>1413</sup>

Hyok Jun Kwon, Hutt Valley DHB

**White Island burn distribution patterns** <sup>1214</sup>

Febe Minogue, Christchurch Hospital

**The Whakaari/ White Island eruption 2019: The impact on doctors** <sup>1373</sup>

Raz Di Bartolo, Waikato Hospital

**Judges retire for deliberation**

**The history of breast implants: from lipoma to silicone and everything in between** <sup>1425</sup>

Fraser Donaldson, <sup>LS</sup> Royal Brisbane & Women’s Hospital

**Presentation of NZAPS registrar prizes and close of conference**

NZAPS prizes sponsored by:

**Medtronic**

**Closing Lunch**

# Electronic Poster Index

*E-Posters sponsored by:*



**Poster Display Index**  
**Displayed online and in the Trade Exhibition area**  
**Coronet/Remarkables Room Level 4**

<b>ID</b>		<b>Presenting Author</b>
1216	<i>Quality measures in cervical lymphadenectomy for cutaneous malignancy, eleven years of experience</i>	<b>Fouad Nahab</b>
1217	<i>Fibreoptic endoscopic evaluation of swallow in transoral robotic surgery (TORS): An examination of the acute post-operative period for oropharyngeal squamous cell carcinoma</i>	<b>Emma Charters</b>
1223	<i>Systematic review and meta analysis of the impact of dosimetry to dysphagia and aspiration related structures</i>	<b>Emma Charters</b>
1229	<i>Lateral temporal bone resections – Radiological diagnostic accuracy and prognostic indicators</i>	<b>Matthew Kwok</b>
1232	<i>Primary amyloidosis of the epiglottis – Case report and review of the literature</i>	<b>Matthew Kwok</b>
1235	<i>An alternative therapy on the rise: colloidal silver and its implications for skin cancer treatment</i>	<b>Caitlyn Withers</b>
1237	<i>Exploring the application of machine learning to predict cancer-specific survival in head and neck cancer patients using manually curated datasets</i>	<b>Damian Kotevski</b>
1247	<i>The safety of erythropoietin stimulating agents during active treatment of head and neck squamous cell carcinoma: a literature review</i>	<b>Megan-Lee Rogers</b>
1324	<i>Sentinel lymph node biopsy for squamous cell carcinoma of the lip: a review of current evidence</i>	<b>Harrison Theile</b>
1333	<i>Staples versus sutures: which is superior for closure of scalp wounds?</i>	<b>Harrison Theile</b>
1342	<i>Impacts to swallowing associated with the mandibular lingual release approach (MLRA) in the context of oral/ oropharyngeal cancer: A scoping review</i>	<b>Nicola Hardingham</b>
1345	<i>Phase 3 KEYNOTE-630 study of adjuvant pembrolizumab versus placebo in patients with high-risk locally advanced cutaneous squamous cell carcinoma</i>	<b>Jenny Lee</b>
1346	<i>Head and neck lymphoedema and dysphagia following chemoradiotherapy for head and neck cancer: A 12 month longitudinal investigation</i>	<b>Claire Jeans</b>
1349	<i>High-resolution pharyngeal manometry analysis identifies specific biomechanical patterns in patients with dysphagia following head and neck cancer treatment</i>	<b>Mistyka Schar</b>

**Poster Display Index**  
**Displayed online and in the Trade Exhibition area**  
**Coronet/Remarkables Room Level 4**

<b>ID</b>		<b>Presenting Author</b>
1351	<i>The perils of Cansema</i>	<b>Caitlin O'Hare</b>
1352	<i>Recurrence, metastatic rates and possible role for sentinel lymph node biopsy in cutaneous scalp SCC: a five year retrospective study in Waikato, New Zealand</i>	<b>Yang Gao</b>
1353	<i>Pilomatrix carcinoma: An increasingly reported rare tumour. A case report and review of the literature</i>	<b>Isobel Yeap</b>
1354	<i>Benign subcutaneous emphysema of the upper limb: A case report and literature review</i>	<b>Isobel Yeap</b>
1355	<i>Primary analysis of Phase 2 results for cemiplimab in patients (pts) with locally advanced basal cell carcinoma (laBCC) who progress on or are intolerant to hedgehog inhibitors (HHIs)</i>	<b>Alexander Stratigos</b>
1364	<i>Computed tomography (CT)-defined sarcopenia assessment in patients with head and neck cancer who are overweight or obese: A comparison of two methods</i>	<b>Belinda Vangelov</b>
1369	<i>Microvascular reconstruction of head and neck defects in the elderly</i>	<b>James Every</b>
1371	<i>Versajet hydrosurgery as a useful tool in nasal reconstruction</i>	<b>Jeffrey Lau</b>
1372	<i>A review of burn presentations to Waikato Regional Burns Centre</i>	<b>Kristy Toy</b>
1374	<i>Medial sural artery perforator flap – Single centre experience in extremity and head and neck reconstruction</i>	<b>Jan Janzekovic</b>
1376	<i>What's a free flap without an app?</i>	<b>Caitlin O'Hare</b>
1379	<i>The utility of frozen section pathology in oral squamous cell carcinoma - A systematic review</i>	<b>Linus Armstrong</b>
1388	<i>Epidemiological evaluation of Ledderhose Disease (Plantar Fibromatosis) In a cohort of patients with Dupuytren's Disease: A single center experience</i>	<b>Maitumelo Motoroko</b>
1389	<i>Mucormycosis in burns: a systematic review</i>	<b>Emma Littlehales</b>
1397	<i>Free thenar flap reconstruction of a high-pressure paint injection injury: a case report</i>	<b>Daniel Lake</b>
1400	<i>A novel, low-cost nerve approximating device</i>	<b>Daniel Lake</b>
1401	<i>Squamous cell carcinoma of the scalp; a surgical perspective from Brisbane</i>	<b>Tushar Agrawal</b>

**Poster Display Index**  
**Displayed online and in the Trade Exhibition area**  
**Coronet/Remarkables Room Level 4**

ID		Presenting Author
1403	<i>A speech pathology service delivery model in radiation oncology for head and neck cancer</i>	<b>Sally Laing</b>
1406	<i>The deep inferior epigastric artery as an arterial interposition graft in the wrist</i>	<b>Annelise Neal</b>
1407	<i>Transoral robotic surgery as a single modality treatment for oropharyngeal squamous cell carcinoma</i>	<b>Mario Tapia Cespedes</b>
1410	<i>The use of expiratory muscle strength training (EMST) in the management of dysphagia and aspiration in the head and neck (H&amp;N) cancer population - experiences from Prince of Wales Hospital</i>	<b>Emma Stradling</b>
1412	<i>A collaborative approach to establishing speech pathology research in head and neck cancer: A model of organisational and academic support, research productivity and building research capacity at Prince of Wales</i>	<b>Emma Stradling</b>
1415	<i>Time to clinically meaningful changes in pain in patients with advanced cutaneous squamous cell carcinoma treated with cemiplimab in a Phase 2 clinical trial</i>	<b>Danny Rischin</b>
1417	<i>Aggressive histological subtypes of BCC have higher rates of incomplete excision on the head and neck</i>	<b>Tom Whitton</b>
1419	<i>Wrapping and dangling in lower limb microsurgical reconstruction - can we do better?</i>	<b>Jan Janzekovic</b>
1420	<i>Does the histological differentiation of head and neck cutaneous SCC affect rates of incomplete excision?</i>	<b>Tom Whitton</b>
1421	<i>Factors contributing to the incomplete excision of BCC on the head and neck</i>	<b>Tom Whitton</b>
1426	<i>A case report and literature review of large early in-transit metastasis of stage I merkel cell carcinoma</i>	<b>Fraser Donaldson</b>
1428	<i>Dermatofibrosarcoma protuberans arising in keloid scar - a rare case report</i>	<b>Alistair McCombe</b>
1429	<i>Preserve the nerve - incorporating advanced technology to improve the safety and reliability of the bilateral sagittal split osteotomy in corrective mandibular surgery</i>	<b>Alistair McCombe</b>

# Keynote Speakers

## **Jonathan Irish** MD MSc FRCSC FACS

Professor, Department of Otolaryngology-Head and Neck Surgery, University of Toronto, Canada

Dr. Jonathan Irish graduated with his M.D. degree from the University of Toronto. He then completed residency training at the University of California in Los Angeles and the University of Toronto. He completed his Master of Science degree in Molecular Biology at the Institute of Medical Science at the University of Toronto where he studied the molecular biological characteristics of head and neck cancers. Dr. Irish completed the American Head and Neck Society Fellowship in Head and Neck Surgical Oncology, and joined Toronto General Hospital and the Princess Margaret Cancer Centre in 1992.

Dr. Irish is currently a Professor of Otolaryngology – Head and Neck Surgery and the Head of the Head and Neck Oncology and Reconstructive Surgery Division at the University of Toronto. He is a head and neck surgical oncologist and reconstructive surgeon with particular expertise and interest in oral cancer, melanoma and skin cancer, thyroid cancer as well as salivary gland tumors and malignancies.



## **Randall Kimple** MD PhD

Associate Professor, Department of Human Oncology, University of Wisconsin School of Medicine and Public Health, Wisconsin, USA

Dr. Kimple completed his MD and PhD degrees at the University of North Carolina in the Department of Pharmacology. He received his clinical training in Radiation Oncology at UNC Hospitals before pursuing a fellowship in viral oncology at the University of Wisconsin. He is currently an Associate Professor in the Departments of Human Oncology and Medical Physics at the University of Wisconsin School of Medicine and Public Health.

He is co-leader of the UW Carbone Cancer Center's Imaging and Radiation Sciences program and Director of Cancer Biology and Translational Research in the Department of Human Oncology. His lab studies molecular mechanisms underlying the development of resistance to anti-cancer therapies using translational model systems.



## **Stefan Hofer** MD PhD FRCS

Head, Division of Plastic Surgery, University Health Network, Toronto, Canada



Dr. Hofer obtained his medical degree from the University of Amsterdam in 1992. He completed a PhD in the Department of Surgery at the University of Amsterdam. He trained at the Department of Plastic Surgery at the University of Groningen, The Netherlands and received board certification in Plastic Surgery in 2000. He was awarded a Dutch Cancer Society clinical fellowship, for a one-year Microsurgery Reconstruction Fellowship at the Bernard O'Brien Institute of Microsurgery at St. Vincent's Hospital and the University of Melbourne in Melbourne, Australia.

Dr. Stefan Hofer is the chief of the Division of Plastic Surgery at University Health Network. He also holds the Wharton Chair for Reconstructive Surgery. Between 2001 and 2007 he was a Plastic and Reconstructive staff surgeon at the Erasmus University Medical Centre in Rotterdam, The Netherlands, where he was the Head of Plastic and Reconstructive Surgical Oncology. In October 2007 he was recruited into his current position at University Health Network and Mount Sinai Hospital.

## **Inês Silva** MD PhD

Medical Oncologist and Researcher Scientist at Melanoma Institute Australia and The University of Sydney



Inês Silva, MD PhD is a Medical Oncologist and Researcher Scientist at Melanoma Institute Australia and The University of Sydney. She received her MD degree at the Universidade Nova de Lisboa (Portugal) in 2006 and completed specialist training in Medical Oncology at Instituto Português de Oncologia (Lisbon, Portugal) in 2016.

In 2010 she was chosen for the MD PhD Program for Advanced Medical Education and earned a 3-year fellowship grant (sponsored by Gulbenkian and Champalimaud's Foundations), providing her the opportunity to undertake research at Bhardwaj Lab, part of Interdisciplinary Melanoma Cooperative Group and NYU Cancer Institute (2010-2013). She defended her PhD thesis in tumor immunology, describing how the dysfunction of the protective innate immune mechanisms, including NK cells, can contribute towards melanoma progression. She did two clinical fellowships in melanoma, one at NYU Cancer Institute (2014) and more recently at Melanoma Institute Australia (2017-2019), where she was co-investigator in phase I, II and III clinical trials (neoadjuvant, adjuvant and metastatic) in melanoma.

She has presented her research work in international meetings, and she has published original research and review articles in high-impact journals. Her main research goal is to study mechanisms of innate and acquired resistance to immunotherapy in order to identify new therapeutic targets.

## Danny Rischin MBBS, FRACP, MD

Director, Department of Medical Oncology, Peter MacCallum Cancer Centre, Melbourne



Danny Rischin is the Director of the Department of Medical Oncology at the Peter MacCallum Cancer Centre and Professorial Fellow, Sir Peter MacCallum Department of Oncology, University of Melbourne. He is a National Health and Medical Research Council of Australia Leadership Fellow and is also an Associate Editor of the Journal of Clinical Oncology. His major clinical and research interests are in the development of new treatments and novel biomarkers for head and neck cancers and cutaneous squamous cell carcinoma. He has published extensively on these topics and is currently leading major trials investigating new treatments in head and neck and cutaneous squamous cell carcinomas.



# Invited Speakers

## Jacqui Allen **MBChB, FRACS**

Consultant Laryngologist in the Department of Otolaryngology – Head and Neck Surgery at North Shore Hospital, Auckland, New Zealand



Jacqui Allen, is a Consultant Laryngologist in the Department of Otolaryngology – Head and Neck Surgery at North Shore Hospital, Auckland, New Zealand and Senior Lecturer in the Department of Surgery at the University of Auckland, New Zealand. Dr Allen's practice includes Voice, Laryngology with complex airway management, In-office laser therapy, Dysphagia and Head and Neck cancer. She earned her Medical Degree from the University of Auckland and completed ORL residency in New Zealand, followed by a Fellowship at the University of California, Davis in the Voice and Swallowing Centre. She is a member of the American Bronchoesophagological Association, Dysphagia Research Society, New Zealand Society of Otolaryngologists Head and Neck Surgeons, American Academy of Otolaryngologists, RACS Academy of Surgical Educators and a Fellow of the Royal Australasian College of Surgeons. Dr Allen's research interests include vocal fold scar, airway stenosis, cough and reflux, and novel dysphagia management. She is Section Editor of Current Opinion in Otolaryngology Head and Neck Surgery and her publications have appeared in journals such as Laryngoscope, European Archives of Otolaryngology, Otolaryngology Head and Neck Surgery, Head and Neck and Dysphagia.

## Andrew Cautley **BDS, MDS, MRACDS(Pros), FADI**

Specialist Prosthodontist, Nelson, New Zealand



Andrew is a Specialist Prosthodontist based in Nelson, where he has been since 1994. He also has a branch practice in Wellington focusing of full-arch implant reconstructions. For the past 20 years he has been a Visiting Consultant at Hutt Hospital, where a significant portion of his time is taken up treating patients who require dental rehabilitation following cancer surgery. Andrew has lectured widely in Australia, New Zealand and beyond, and his practice focuses on fixed prosthodontics and implants.

## **Susan Coulson** PhD, MAppSc, BAppSc

Senior Lecturer, Physiotherapy, University of Sydney, Australia

Dr Susan Coulson is a clinical and academic physiotherapist whose main area of interest is in assessment and treatment of facial nerve disorders. Her Doctoral and Masters research were at the University of Sydney, where she currently holds an academic position. For more than 25 years, her clinical and research work has focused on assessment and treatment facial nerve disorders including 3-D motion analysis, reliability of grading systems, telemedicine, reviews and intervention studies. Susan is a founding member of the multidisciplinary team of practitioners at the Sydney Facial Nerve Clinic.



## **Sally Langley** FRACS

President, Royal Australian College of Surgeons

Dr Sally Langley is a plastic and reconstructive surgeon, who is based in Christchurch, New Zealand. She has worked in both public and private surgery in Christchurch for more than 30 years. Her work has covered the whole spectrum of plastic surgery including craniofacial, cleft lip and palate, head and neck, paediatric, reconstructive including microsurgery, hand surgery, as well as skin cancer and breast surgery.

Dr Langley has been involved with surgical education and training throughout her career. She was an examiner in plastic and reconstructive surgery for nine years and for two years she served as the New Zealand deputy Chair of the Court of Examiners, the entity which conducts the Fellowship exam of the Royal Australasian College of Surgeons (RACS).

Dr Langley is a former president of the New Zealand Association of Plastic Surgeons. In 2014 she was elected member of the RACS Council where she chaired the Professional Standards and Development Board from 2019 till 2021. Since May 2021 Dr Langley is the RACS President.



## **Anna Miles** PhD

Senior Lecturer, Speech Science, School of Psychology,  
University of Auckland, New Zealand

Dr Anna Miles is a practising speech-language therapist with 20 years of experience working in the acute and community setting. Anna is a senior lecturer at The University of Auckland. She is a researcher, lecturer and clinician in the area of voice and swallowing disorders. Anna runs a hospital-based student teaching clinic as well as an outpatient voice and



swallowing rehabilitation clinic. She is the New Zealand Speech-language Therapists' Association Clinical Expert in Adult Dysphagia.

The Swallowing Research Laboratory in the Centre of Brain Research at The University of Auckland, led by Dr Miles, strives to improve the lives of people with swallowing difficulties through improved assessment, treatment and medical education. The laboratory hopes to reduce the risks of pneumonia and death associated with swallowing difficulties as well as improve the quality of life of sufferers.

## **Alison Rich** BDS, MDSc, PhD, FRACDS, FFOP(RCPA)

Professor of Oral Pathology, Faculty of Dentistry,  
University of Otago, Dunedin, New Zealand

Alison is Professor of Oral Pathology at the Faculty of Dentistry and Head of the Pathology Department, Dunedin School of Medicine, University of Otago, New Zealand. She is a registered specialist in oral pathology and is Head of the Oral Pathology Centre, the University's oral pathology diagnostic service and the Leader of the Oral Immunopathology Research Group. She is a previous Chair of the Faculty of Oral and Maxillofacial Pathology of the Royal College of Pathologists of Australasia and their current Chief Examiner.



## **Swee Tan** ONZM MBBS PhD FRACS

Executive Director, Gillies McIndoe Research Institute,  
Wellington, New Zealand

Dr Tan studied medicine at Melbourne University and trained as a plastic and reconstructive surgeon in New Zealand. Following a Craniofacial Fellowship at Oxford and Craniofacial Research Fellowship in Boston, he was appointed Consultant Plastic & Cranio-Maxillofacial Surgeon at Hutt Hospital in 1995, where he was the Director of Plastic Surgery 2000-2006 and Director of Surgery 2007-2013. He founded the Centre for the Study & Treatment of Vascular Birthmarks, a supra-regional referral centre, in 1996, and was awarded a PhD by Otago University in 2001 for his work in infantile haemangioma. He is the Founder and Executive Director of the Gillies McIndoe Research Institute. He is an elected member of 13 national and international medical and scientific societies. He was the past President of the ANZHNCS 2008-2010 and the Founding Chair of the New Zealand Research Foundation of the ANZHNCS. Well-known internationally for his research in vascular anomalies and cancer, Dr Tan is a recipient of 20 science prizes and 25 honours and awards including Wellingtonian of the Year – Science and Technology, KEA World Class New Zealand Award, and ONZM. He is an author of 187 book chapters and articles in peer-reviewed journals, and has delivered over 400 presentations at conferences.



# General Information

## Website

**[anzhncsnzaps2020.w.events4you.currinda.com](http://anzhncsnzaps2020.w.events4you.currinda.com)**

## Registration and Information Desk - Level 4

The registration desk is situated in the foyer on Level 4 outside the Coronet/ Remarkables Room, QT/Rydges Hotel. The Plenary sessions will all take place in the Queenstown Room on Level 5.

We welcome your enquires on any conference detail. The desks will be open at the following times:

Wednesday	5.00 pm - 6.30 pm
Thursday	8.00 am - 6.00 pm
Friday	7.00 am - 7.30 pm
Saturday	8.00 am - 3.15 pm

## Contact Phone Numbers

Registration Desk Staff: 027 562 5949

Queenstown Taxis (Bluebubble): 03 450 3000

Super Shuttles: [www.supershuttle.co.nz](http://www.supershuttle.co.nz)

Police/Ambulance/Fire: 111

Queenstown Medical Centre: 03 441 0500

## Abstracts

Abstracts for the presentations and posters are both available in this handbook and electronically on the conference website.

## **Attendee List**

There is a list of conference attendees available at the registration desk. Please note this only includes delegates who have consented to having their information included.

## **Certificate of Attendance & Evaluation**

A certificate of attendance will be emailed directly to delegates following the conclusion of the conference and once evaluation has been submitted.

## **COVID-19 Considerations**

This event will comply with the current Government COVID-19 regulations that apply at the time of the conference. Attendees should not attend this event if they have symptoms. Attendees should scan the COVID Tracer App or complete the attendance record available on the registration desk. Hand sanitiser has been provided. Any change in COVID-19 levels may require a change in the advertised program and/or venue layout at short notice.

## **Defibrillator Location**

A defibrillator is located on Level 6 by the pool door (close to the restaurant and bar).

## **Internet Access**

Wireless internet: QT-Event Password: QQueenstown

## **Toilets**

There are toilets located on the 5th & 6th Floors (there are no toilets on the 4th floor)

## **Mobile Phones/Devices**

Mobile phones are allowed in the conference rooms, however please turn all devices to silent mode.

## Name Badges

All conference attendees and industry representatives are requested to wear their name badges at all times during the conference and social functions. It is your official entrance pass to the sessions and conference catering.

We invite you to return your name badge to the registration desk at the end of the conference for recycling.

## Parking

Car parking is available at NZ\$15 per night. There is no reservations, limited spaces, first come first served. However there is free parking on the lakefront with no time limits.

## E-Poster Display

E-Posters will be displayed on three display screens in the trade exhibition area - they will also be available online via the livestream dashboard.

Please take time to view the poster displays during refreshment breaks.

*E-Posters sponsored by:*



## Prizes: Registrar Presentations

ANZHNCs Prizes include Best Scientific Presentation NZ\$500, Best Allied Health Presentation NZ\$500, Best Poster NZ\$500. Presentations take place Friday afternoon.

*Sponsored by:*



NZAPS Prizes include Best Presentation NZ\$800, 2nd Best Presentation NZ\$400, Best Poster NZ\$300. Presentations take place Sunday midday.

*Sponsored by:*

## Medtronic

## Catering and Special Diets

Catering includes morning tea, lunch, afternoon tea on the days of registration which will be served in the Coronet/Remarkables Room on Level 4. (Note morning tea and lunch only on Sunday). The meeting dinner is not included with registration, please see the registration desk to purchase tickets.

Vegetarian options are included in all refreshment breaks. If you have advised any special dietary requirements on your registration these would have been notified to the caterers. All lamb, beef, chicken served at the main conference venue is certified Halal. Please make yourself known to the catering staff if you require help finding your meal.

*Barista Coffee will be available in the Trade Exhibition Area and has been sponsored by:*



SheffMed NZ Ltd

## Suggestions for Dining Queenstown CBD:

Blue Kanu, 16 Church Street [bluekanu.co.nz](http://bluekanu.co.nz)

ph: 03 442 6060

Botswana Butchery, 17 Marine Parade [botswanabutchery.co.nz](http://botswanabutchery.co.nz)

ph: 03 442 6994

Jervois Steak House, 8 Duke Street [jervoissteakhouse.co.nz](http://jervoissteakhouse.co.nz)

ph: 03 442 6263

Rata, 43 Ballarat Street [ratadining.co.nz](http://ratadining.co.nz)

ph: 03 442 9393

**More dining options: [queenstownnz.co.nz](http://queenstownnz.co.nz)**

# Presentation Information

## Oral Presenters

### In Person

All presenters will have provided their presentation slides in advance. All presentations will take place in the Queenstown room. A dedicated AV technician will be managing the presentations. Notes view will be available to all presenters. All presentations in the Plenary room will be livestreamed and recorded. Presentations must not exceed the allotted time which includes Q&A. A timekeeper will indicate 2 minutes and 1 minutes remaining.

### Remote

All presenters located outside of New Zealand (this is indicated by <sup>LS</sup> on the program) will have provided their presentation as a pre-recording in advance. This will be played at the allotted time (please check the latest program on the website for the most up to date timings). Following their pre-recording, presenters will be available to appear live for their Q&A via Zoom (link emailed previously - virtual presenters are asked to be available approximately 15 minutes prior and after their Q&A time. Questions from both the live and virtual audience will be managed by the moderators.

## E-Poster Presenters

All posters will be electronic this year. Poster authors will have submitted their pdf and Powerpoint files previously. In Person delegates will be able to view the e-posters on screens in the trade exhibition/refreshment break area in the Coronet/Remarkables Room on Level 4. Virtual attendees will be able to view the e-posters via a link on the Livestream Page.



## **Access to the Livestream**

All delegates (Virtual and In Person) will have access to the livestream. A link and password has been emailed in advance. The recording will be available to view for six months.

## **Late Changes**

With such a high volume of presentations, oral and poster presentations, files cannot be changed once submitted.

If for any reason, a presenter can no longer be available to present in person or be available for their scheduled live Q&A, we ask them to contact the Meeting Organiser immediately by email [sally@events4you.co.nz](mailto:sally@events4you.co.nz) or by reporting to the Registration Desk located in the Level 4 Foyer.

Any last minute changes to the program will be reflected on the online program on the Meeting website and livestream page.

# Meeting Dinner

## Meeting Dinner

**Venue** Jervois Steak House, 8 Duke Street, Queenstown

**Date** Saturday 7th August

**Time** 7.00 pm for 7.30 pm

**Price** \$150

Dinner includes food and beverages.

Dress is smart casual.

Partners are welcome.

Transport to and from QT/Rydges departing at 7pm sharp.



# Abstracts: Oral

In Alphabetical Order  
(presenting author surname)

## Application of a clinical framework to map speech pathology service capabilities and potential cost savings to enhance head and neck cancer care in regional areas

Jasmine Foley<sup>1</sup>, Elizabeth Ward<sup>1, 2</sup>, Laurelie Wishart<sup>1, 2</sup>, Clare Burns<sup>1, 3</sup>, Rebecca Nund<sup>4</sup>, Nicky Graham<sup>5</sup>, Corey Patterson<sup>6</sup>, Amy Ashley<sup>6</sup>, Julie Fink<sup>6</sup>, Emily Tiavaasue<sup>7</sup>, Wendy Comben<sup>6</sup>

1. School of Health & Rehabilitation Sciences, The University of Queensland, Brisbane, QLD, Australia

2. Centre for Functioning and Health Research, Metro South HHS, Brisbane, QLD, Australia

3. Speech Pathology, Royal Brisbane and Womens Hospital, Metro North HHS, Brisbane, QLD, Australia

4. Speech Pathology, The University of Queensland, Brisbane, QLD, Australia

5. Speech Pathology, Childrens Health Queensland HHS, Wondai, Queensland, Australia

6. Speech Pathology, The Townsville Hospital, Townsville, Queensland, Australia

7. Speech Pathology, Mt Isa Hospital, North West HHS, Mt Isa, Queensland, Australia

### Purpose:

Individuals who undergo head and neck cancer (HNC) treatment require ongoing support from speech pathology (SP) services. However, there are recognised challenges accessing SP services in non-metropolitan areas where infrastructure, staffing and resources can be limited.

### Aims:

The primary aim was to examine the utility of a task-based capability framework, specific to SP cancer care services, through mapping the service capabilities of a group of regional/rural facilities within a cancer network. The secondary aim was to model potential consumer and service cost savings if local SP service capabilities are increased.

### Methods and Procedures:

Four sites within a regional/rural service area participated. A mixed methods approach was used to examine the utility of applying a task-based capability framework (specific to adult cancer care) to map service capabilities. From that data, potential cost savings in travel for the health service (reimbursement) and people accessing HNC services (determined by accessing the closest service/s to meet their needs) from August 2016 to March 2020 was modelled.

### Results:

While there were some individual differences, most tasks listed in the HNC clinical framework were able to be provided by the 4 participating non-metropolitan sites. Modelling the re-distribution of these SP HNC services away from the tertiary site to local sites (if these services were provided) for 44 regional people showed average potential savings of \$22,278 for the health system and \$31,994 for the patient.

### Conclusions:

Mapping HNC service capability using the clinical framework tool highlighted many aspects of HNC care could be delivered at local SP sites. Enhancing local SP service capabilities in HNC care demonstrates potential cost savings for patients and services.

## An ex vivo examination of oral cancer-derived exosomes

**Mohammad Aziz<sup>1</sup>, Benedict Seo<sup>1</sup>, Haizal Mohd Hussaini<sup>1</sup>, Merilyn Hibma<sup>2</sup>, Alison M Rich<sup>1</sup>**

1. Sir John Walsh Research Institute, University of Otago, Dunedin, Otago, New Zealand

2. Pathology Department, University of Otago, Dunedin, Otago, New Zealand

**Purpose:** Exosomes are membrane bound nanovesicles released by cells into their extracellular environment. Their contents, including proteins and nucleic acids, can be transferred from one cell to another, including between cancer cells, leading to transcriptional and translational changes in the recipient cell. Salivary exosomes provide a potential pathway to detect oncogenes and oncoproteins in patients with various diseases, including oral squamous cell carcinoma (OSCC). They may provide a useful source for diagnosis and monitoring cancer progression. This study compared the mRNA levels of the genes of interest FOXM1, DNMT1, HOXA7, CCNB1 and HSPA1A and proteins of interest (POI) FOXM1, DNMT1, CCNB1 and HSP70 in exosomes derived from plasma and saliva of OSCC patients and healthy controls.

**Methodology:** Exosomes were isolated from plasma and saliva using ultracentrifugation, and their presence confirmed by Cryo-EM. The exosomal RNA and proteins were extracted and subjected to qPCR for mRNA analysis and ELISA for protein analysis.

**Results and Conclusion:** Cryo-EM revealed structures consistent with the expected size of exosomes, and exosomal surface protein markers were detected in all samples. Transcripts for HSPA1A only were detected with a higher expression in OSCC plasma (mean  $2^{-\Delta\text{CT}}$ : 0.68) and saliva (mean  $2^{-\Delta\text{CT}}$ : 0.73) exosomes compared to controls. All the POI were detected in all samples with a higher expression of FOXM1, DNMT1 and CCNB1 in OSCC plasma exosomes and a higher expression of FOXM1 and DNMT1 in OSCC saliva exosomes compared to matched controls. Due to high variation between individual samples, the results were not statistically significant except for FOXM1 protein, which showed a significantly higher expression in OSCC plasma exosomes. The results provide the first evidence that there is more HSPA1A RNA and FOXM1 and DNMT1 protein in plasma and saliva OSCC exosomes than healthy controls.

## When pre-operative imaging fails to identify the sentinel lymph node(s)

**Sonya Cameron<sup>1</sup>, Anne Collins<sup>1</sup>, Patrick Lyall<sup>1</sup>, William McMillan<sup>1</sup>, Rebecca Ayers<sup>1</sup>, Eric Kim<sup>1</sup>, Louise Thomas<sup>1</sup>, Dean Ruske<sup>1</sup>, Jamie Ryan<sup>1</sup>**

1. Southern District Health Board, Dunedin, OTAGO, New Zealand

### Background

Currently, a sentinel lymph node biopsy is recommended when the Breslow thickness is equal to or greater than 0.8mm and should be considered in other cases on an individual basis. It is estimated that pre-operative imaging fails to identify the sentinel lymph node in 3-7% of cases. Failure to localise the sentinel node can result in a management dilemma with no established guidelines as to how to proceed.

### Aim

To estimate the failure rate of pre-operative sentinel node imaging and the subsequent management strategies employed.

### Methods

Lymphoscintigram data from patients in Dunedin hospital over a ten-year period was reviewed. Patient demographics and melanoma-specific data was collected. The rate of non-localisation of the sentinel node was calculated and the management strategies employed were examined. In addition,

a convenience sample of melanoma surgeons across Australasia and Ireland were invited to complete an online survey to establish international practice when such cases are encountered. The cohort included plastic and reconstructive surgeons, general surgeons and head and neck surgeons respectively. Participants were identified via surgical colleges and professional organisations. The study was approved by the Human Ethics Committee, University of Otago, Dunedin, New Zealand.

## Results

The rate of non-localisation of the sentinel node by lymphoscintigram in Dunedin hospital was consistent with rates reported internationally. All patients were subsequently managed in the setting of a multidisciplinary meeting and underwent further imaging in addition to the recommended clinical follow-up. Responses to the online survey indicated similar management strategies were employed by melanoma surgeons across Australasia and Ireland.

## Conclusion

Currently, there are no evidence-based guidelines as to how to proceed when pre-operative imaging fails to detect a sentinel lymph node in melanoma patients. The results of this study provide valuable information regarding the current practices of melanoma surgeons when faced with this dilemma.

id #1224

## Comparison study of dysphagia at 12 months following transoral robotic surgery and definitive chemo-radiation for oropharyngeal squamous cell carcinoma

**Emma Charters<sup>1</sup>, Jonathan Clark<sup>1</sup>, Hans Bogaardt<sup>2</sup>, Amy Freeman-Sanderson<sup>3</sup>, Kirrie Ballard<sup>2</sup>**

1. Chris O'Brien Lifehouse, Camperdown, NSW, Australia

2. Health Sciences, University of Sydney, Sydney, NSW, Australia

3. Health Sciences, University of Technology Sydney, SYDNEY, NSW, Australia

### Background

Dysphagia outcomes for the surgical compared with radiotherapy approaches for the treatment of oropharyngeal squamous cell carcinoma (SCC) is still being determined. Transoral robotic surgery allows some patients to choose primary surgical intervention for their cancer treatment plan then either avoiding or undergoing a de-escalated post-operative radiotherapy adjuvant treatment, rather than the traditional high dose chemo-radiotherapy. It is thought that this would improve the swallowing function for patients. We aimed to describe and compare the dysphagia characteristics of definitive intensity modulated radiotherapy (IMRT) and TORS at one year post treatment

### Methods

Prospective, observational case matched cohort design, in a multi-centre trial (Chris O'Brien Lifehouse and Royal Prince Alfred Hospital)

Instrumental swallow assessment; fibreoptic endoscopic evaluation of swallowing, secretion severity scale, airway protection, penetration and aspiration scale, boston clearance and residue scale

Clinician rated measures: performance status scale (head and neck), functional oral intake scale

Patient rated measures: MD Anderson Dysphagia Index

### Results:

In final months of recruitment, for completion in April 2020

## Specificity of a non-invasive oral cancer test in head and neck cancers beyond the oral cavity

**Lachlan Cook**<sup>2,1</sup>, **Charmaine Woods**<sup>3,2</sup>, **Shanan Woo**<sup>4,5</sup>, **Stefanos Kanatsios**<sup>4,5</sup>, **Caroline Moore**<sup>4</sup>, **Damian Hussey**<sup>2</sup>, **Michael McCullough**<sup>4</sup>, **Eng Ooi**<sup>2,1</sup>, **Tami Yap**<sup>4,5</sup>

1. Department of Otorhinolaryngology, Head and Neck Surgery, Flinders Medical Centre, Adelaide

2. College of Medicine and Public Health, Flinders University, Adelaide

3. Flinders Medical Centre, Glenelg, SOUTH AUSTRALIA, Australia

4. Melbourne Dental School, University of Melbourne, Melbourne

5. Department of Oral and Maxillofacial Surgery, Royal Melbourne Hospital, Melbourne

The high mortality and morbidity of head and neck cancer diagnosed at later stages highlights the need for early detection techniques and screening tools. We aim to determine whether oral swirls, a potential non-invasive screening tool for head and neck cancer, are able to predict the presence of oropharyngeal squamous cell carcinoma (SCC). Oral swirls are a simple, rapid and cost-effective method used to isolate salivary microRNAs from extracellular vesicles, which have previously been able to predict oral cavity squamous cell carcinoma with 87% sensitivity and 82% specificity. A multicentre study is underway within the Departments of Otorhinolaryngology, Head and Neck Surgery at Flinders Medical Centre in South Australia and Royal Melbourne Hospital in Victoria, as well as the Dental Oncology Unit of the Victorian Comprehensive Cancer Centre. Oral swirl samples are collected in the pre-treatment stage for known malignancies and in the clinic or pre-operative setting for normal controls. For this study, oral swirl samples have been collected from 113 participants across all sites, with 69 head and neck cancers including 30 oral cavity SCC, 24 oropharyngeal SCC and 8 unknown primary head and neck SCC. microRNA quantification will be performed with RT-qPCR using a multiplex primer pool of 7 microRNAs from a previously published protocol, with the addition of 4 key microRNAs identified in the literature as being dysregulated in oropharyngeal SCC. Differential microRNA expression between samples with known malignancy compared to controls will be used to build a predictive model to determine whether oropharyngeal SCC can be identified using an oral swirl test.

## Profiling the oral microbiome in novel barrier impaired mouse models of OSCC

**Jarryd Boath**<sup>1</sup>, **Yuchen Bai**<sup>1</sup>, **Charbel Darido**<sup>1</sup>

1. Peter MacCallum Cancer Centre, Parkville, VIC, Australia

Oral Squamous Cell Carcinoma (OSCC) is the most common cancer of the head and neck region. Most OSCC patients present with advanced stage disease, and treatment is met with high levels of recurrence and metastasis. The use of clinical features to classify the malignancy of oral lesions is difficult because they vary in appearance and size and are open to subjective interpretation by clinicians. While a histopathologic diagnosis is generally more indicative of the malignant changes, it does not inform which premalignant lesion is at risk of progression to OSCC. The oral epithelial tissue serves as a semi-permeable protective "barrier" that is under constant immune surveillance and homeostatic repair to ensure both physical and selective permeability functions that are pivotal for preventing OSCC. When barrier integrity is compromised, it exposes the oral tissue to microbial imbalance and pathogen outgrowth that may promote cancer development. The metagenomics revolution in both sequencing and its analytic pipelines is fostering an explosion of interest in how the oral microbiome impacts physiology and propensity to disease. In this talk, I will describe novel genetic, carcinogenic and viral mouse models of OSCC that recapitulate the full sequence of the human disease from premalignant lesions to OSCC. These models are being exploited to investigate

the role of the microbiome and its association with disease status. We envision that by establishing microbial hallmarks of OSCC initiation, we will be able to introduce preventative studies and risk classification of premalignant lesions. The outcomes will ultimately revolutionize how we manage oral premalignancy in the clinic, prevent oral cancer, and reduce mortality and morbidity associated with OSCC.

**id #1424**

## **Review of patient perceptions and accessibility using telehealth consultations in an outpatient head and neck cancer setting**

**Kaman Dhillon<sup>1</sup>, Jamil Manji<sup>1</sup>, Mario Tapia<sup>1</sup>, Matthew Magarey<sup>1</sup>, Sam Flatman<sup>1</sup>, Jessica Prasad<sup>1</sup>, Kevin Nguyen<sup>1</sup>, Stephen Kleid<sup>1</sup>**

*1. Peter MacCallum Cancer Centre, Melbourne, VIC, Australia*

### **Purpose:**

This study aims to evaluate acceptability, satisfaction and perceptions of Telehealth technology amongst patients having ongoing cancer care with the Head and Neck surgery clinic at the Peter MacCallum Cancer Centre during the COVID-19 pandemic.

### **Methodology:**

This cross-sectional study recruited patients that attended Head & Neck Telehealth clinic appointments between March - September 2020. Patients completed a survey including demographic, socioeconomic and clinical variables, and an array of questions in Likert scale format. The primary outcome measure was patient satisfaction with Telehealth clinical review.

### **Results:**

115 patients were invited to participate, and 100 were included in the analysis. Greater than 90% of patient's had a positive experience with Telehealth appointments and most importantly were willing to have future Telehealth appointments, especially if they were every second appointment. In contrast, 24% of patients who felt that a lack of examination was possibly an issue and slightly more than that felt they could not examine themselves at home. Regional and rural patients were more accepting and positive about the Telehealth clinic visit. That cohort also repeatedly cited savings in travel time and ability to better partake while also completing their normal day to day activities. All participants had access to some form of telecommunication device with 63% having 3 or more devices to choose from.

### **Conclusion:**

The study demonstrates the feasibility of using telehealth appointments in the Head & Neck Surgical Oncology setting. This has benefits not only from a virus containment perspective but also in increasing accessibility for regional and rural patients.

**id #1373**

## **The Whakaari/ White Island eruption 2019: The impact on doctors**

**Raz Di Bartolo<sup>1</sup>, Nicole Schoombie<sup>1</sup>, Sharon Jay<sup>2</sup>, Paul Baker<sup>1</sup>, Richard WongShe<sup>1</sup>, Amber Moazzam<sup>1</sup>**

*1. Plastics Department, National Burns Centre, Middlemore, Auckland, New Zealand*

*2. General Surgery Dept, Tauranga, New Zealand*

### **Aim**

The Whakaari/White Island 2019 eruption is one of New Zealand's most significant mass casualty event as result of a volcanic eruption [in European history]. This event tested doctors across the nation in the management of major burns. The aim of the study was to assess of the psychosocial impacts of a mass casualty on registered doctors. The main objectives were to investigate whether social, workload, and structural factors impacted burn out and/or secondary trauma symptoms



in registered doctors. Another objective was to assess doctors' perception of the patient care of Whakaari/White island patients.

## Methods

Following approval from Auckland Health Research Ethic Committee and locality approval from each district health board, an anonymous online questionnaire was distributed through e-mail to all doctors involved in the management of Whakaari/White Island patients (e.g. ED, Plastics, Burns, ICU). The survey measured several factors specific to the White Island/Whakaari Volcanic Eruption: work satisfaction, support factors, structural factors, workload characteristics, and social support. The questionnaire also assessed secondary trauma and burn out from an existing validated measure (Adams, Figley, and Boscarino, 2008).

## Results

Results will be analysed and will be presented at NZAPS.

## Conclusion

The results from this study may contribute how New Zealand manages future national disasters that involve the management of burn injuries. We hypothesise regional units may need more support in management of burn victims and may experience more secondary trauma and burnout. Understanding the resources and current burn expertise at all units could help for future disaster planning.

id #1425

## The history of breast implants: from lipoma to silicone and everything in between

**Fraser Donaldson<sup>1</sup>, Matthew Peters<sup>1</sup>**

*1. Royal Brisbane and Women's Hospital, Newmarket, QUEENSLAND, Australia*

Vincenz Czerny reported the first successful breast augmentation in 1895. Following a unilateral partial mastectomy, he transplanted a trunk lipoma to reconstruct the defect. From then to 1962 when Cronin and Gerow reported the first successful insertion of a silicone implant a wide variety of techniques were trialled. This period of time saw the insertion of prosthetics including glass and ivory balls, ox cartilage, wool, polyethylene chips, polyvinyl alcoholic sponge and silastic rubber. Injections of paraffin or liquid silicone were also trialled and in some places are still in practise today. These techniques are associated with a wide array of outcomes and significant complications ranging from infection and skin necrosis through to pulmonary embolism and death.

Reportedly after noticing a hanging transfusion bag bare the resemblance of a breast Cronin and Gerow in conjunction with Dow Corning Corporation developed and trialled silicone implants in dogs and progressed to the first insertion of a silicone implant in a patient in 1962. From then to today there has been rapid growth in the field of breast augmentation and to the current implants accepted and approved for use. This period has seen multiple different models and products both introduced and withdrawn with concerns ranging from high rates of silicone leakage, high complication rate, mass litigation and queried links to autoimmune illnesses and cancer.

From the first breast augmentation to today it is clear to see the advancement in products available along with the high standards and expectations for product safety and testing prior to use. With ongoing research and development and with surveillance for long term outcomes of the current available implants it will be of interest to see what the next advancement in breast augmentation is.

## Nutritional status and skeletal muscle status in patients with head and neck cancer: Impact on outcomes and implications for practice

**Merran Findlay<sup>1,2,3</sup>, Kate White<sup>1,2</sup>, Chris Brown<sup>4</sup>, Judy Bauer<sup>5</sup>**

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

2. Cancer Nursing Research Unit, Susan Wakil School of Nursing and Midwifery, Faculty of Medicine and Health, The University of Sydney, Sydney, NSW, Australia

3. Chris O'Brien Lifehouse, Sydney, NSW, Australia

4. National Health and Medical Research Council Clinical Trials Centre, The University of Sydney, Sydney, NSW, Australia

5. School of Human Movement and Nutrition Sciences, University of Queensland, Brisbane, QLD, Australia

### Purpose

Computed tomography (CT)-defined skeletal muscle (SM) depletion and malnutrition are demonstrated poor prognostic factors in patients with head and neck cancer (HNC). We aimed to examine the impact of nutritional status and SM features on overall survival (OS), treatment completion, unplanned admissions and length of stay (LOS) in patients undergoing radiotherapy (RT) or chemoradiotherapy (CRT) of curative intent for HNC.

### Methodology

Retrospective, observational study with nutritional status determined by Scored Patient-Generated Subjective Global Assessment and tissue-density data derived at the third lumbar vertebra (L3). Sarcopenia and myosteatorsis were defined by sex-specific threshold values stratified by body mass index (BMI) for Skeletal Muscle Index (SMI, cm<sup>2</sup>/m<sup>2</sup>) and Skeletal Muscle Radiodensity (SMR, HU).

### Results

Pre-treatment data (n=277: 78% male, mean (SD) age 60 (13) years), revealed the prevalence of malnutrition (24.9%), sarcopenia (52.3%), myosteatorsis (82.3%) and concurrent sarcopenia and myosteatorsis (39.7%). Malnutrition was independently associated with reduced OS for moderate (HR 2.57; 95% CI 1.45-4.55, p=0.001) and severe (HR 3.19; 95% CI 1.44 – 7.07, p=0.004) malnutrition but not sarcopenia (HR 1.09; 95%CI 0.70 – 1.71, p=0.700) or myosteatorsis (HR 1.28; 95% CI 0.57 – 2.84, p=0.500). Malnutrition was associated with treatment discontinuation (p<0.001), unplanned admission (p=0.021) and greater LOS (0.052). SM features were associated with unplanned admissions for: no features (32%), sarcopenia only (50%), myosteatorsis only (25%) and concurrent sarcopenia and myosteatorsis (50%), p < 0.001. Median (Q1, Q3) LOS was greater for: sarcopenia only (5 (3,32)), myosteatorsis only (10 (5,30)), concurrent sarcopenia and myosteatorsis (14 (4,33)) days versus no features (3 (2,11)) days, p<0.001.

### Conclusion

Malnutrition is a more powerful prognostic indicator than CT-defined SM depletion in these patients. Nutritional status should be assessed using validated methods to move towards developing a typology of high risk criteria for this complex patient group.

## Streamlined plastic allocation of resources and tactics against Covid19 (SpartanCov19): a Waikato DHB experience

**YinQian (Jason) Low<sup>1</sup>, Luxi Sun<sup>1</sup>, Eric Tan<sup>1</sup>, Yang Gao<sup>2</sup>**

1. Plastic and Reconstructive Surgery, Waikato DHB, Hamilton, WAIKATO, New Zealand

2. Plastic and Reconstructive Surgery, Middlemore Hospital, Auckland, New Zealand

## Purpose

To review department activity during Level 2 lockdown for COVID19 and critically appraise measures taken for staff and patient safety

## Methodology

Electronic data of activities within department before, during and after pandemic lockdown in intervals of 3 months were acquired from clinical coding.

A survey of medical staff's wellbeing was conducted within 1 week of Level 2 lockdown was conducted using validated workplace questionnaire.

Complications arising from Level 2 lowdown period when COVID19 streamlined service provision was introduced were obtained from Mortality and Morbidity (M&M) database and critically appraised.

## Results

2 out of 16 staff anonymously reported depression with risk to self from lockdown with concerns of 'own ability to work safely.' (chi squared  $p=0.004$ )

Elective work requiring admission was reduced by 20% (chi squared  $p=0.00001$ ) and acute service requiring admission was reduced by 60% (chi squared  $p=0.000001$ ).

General clinical activities was reduced by 33% (chi squared  $p=0.05$ ).

2 patients with complex pathology were delayed for surgery with significant progression of disease on the day of surgery when seen by different teams leading to drastic change in management.

2 elderly patients contacted by phone consultation during lockdown presented to their general practitioners with regional recurrences within the same week of consultation where no concerns were identified.

Hand rehabilitation service was significantly reduced for acute trauma ( $p=0.002$ ) leading to significant morbidity and cost.

## Conclusion

Development of department streamlined measures to meet clinical needs and safety requirement during pandemic lockdown is a new experience where the balance is extremely delicate and challenging both at all levels.

**id #1203**

## Reflections on 30 years of practice in New Zealand

### David Glasson<sup>1</sup>

#### *1. PLASTIC SURGERY SPECIALISTS, WELLINGTON, New Zealand*

I began training in 1982, and retired from surgery after 33 years of Specialist practice, at the end of 2020. During this period, Plastic Surgery developed and expanded rapidly, and it was an exciting time to be part of it. As a valedictory to the specialty, and to colleagues, I will present some personal aspects of my career, along with some practical insights and comments on our profession. I hope there may be one or two take-home messages for everyone.

**id #1418**

## Return to work after trans-oral robotic surgery for oropharyngeal SCC

Lorne Green<sup>1</sup>, Fiona Ip<sup>2</sup>, Mario Tapia<sup>1</sup>, Meiling Zhou<sup>1</sup>, Lachlan McDowell<sup>4, 3</sup>, Ben Dixon<sup>2, 5</sup>, Matthew Magarey<sup>1, 2, 6</sup>

*1. Department of Surgical Oncology, Head and Neck Surgery, Peter MacCallum Cancer Centre, Melbourne, Victoria, Australia*

*2. Head & Neck Surgery, Epworth Healthcare, Richmond, Victoria, Australia*

*3. Sir Peter MacCallum Department of Oncology, University of Melbourne, Melbourne, Victoria, Australia*

4. Department of Radiation Oncology, Peter MacCallum Cancer Centre, Melbourne, Victoria, Australia

5. Department of Surgery, University of Melbourne, Melbourne, Victoria, Australia

6. Department of Medical Education, University of Melbourne, Melbourne, Victoria, Australia

*Purpose:* There is an increasing number of survivors from oropharyngeal cancer who are younger and still of working age, and are faced with the prospect of returning to work (RTW) after treatment. The aim of this study was to investigate the number of patients who RTW after trans-oral robotic surgery (TORS) and to explore their experience of working after treatment, their mental health and overall quality of life (QOL).

*Method:* A cross-sectional, multi-centre, study undertaken using the TORS database at the Peter MacCallum Cancer Centre (PMCC) and Epworth Healthcare, Melbourne, Australia. Eligible patients were between the age of 18-65 years and were employed at or within the 3 months before diagnosis, and had completed curative treatment with TORS for primary oropharyngeal squamous cell carcinoma (SCC). Participants completed a study specific questionnaire to assess their employment status and return to work, as well as other validated questionnaires including the EORTC QLQ-C30, QLQ-H&N45 and the HADS.

*Results:* 46 patients, mean age 55 years (range 39-65 years, 85% men) were included in this preliminary analysis. Majority of patients had tonsillar (52.1%) or base of tongue (32.6%) cancer. Patients were staged using AJCC 8<sup>th</sup> edition, most were p16 positive. The mean RTW time was 14 weeks after finishing treatment (defined as: date of surgery; or end of chemo/radiotherapy if receiving adjuvant therapy). Patients who had surgery alone returned to work quicker than patient receiving surgery + adjuvant chemo/radiotherapy. Patients also reported overall good QOL and mental health outcomes after TORS; fatigue and pain were the main barriers to RTW.

*Conclusion:* To our knowledge this is the first study of its kind on patients receiving primary TORS for their oropharyngeal SCC and our results suggest quicker rehabilitation back to work than patients having chemo/radiotherapy as their primary treatment modality from the literature.

id #1236

## The free abdominoplasty flap in breast reconstruction – The untold story

**Richard Hamilton<sup>1</sup>, Ingemar Fogdestam<sup>2</sup>**

1. Hamilton House Day Surgery, Adelaide, SA, Australia

2. Plastic Surgery, Sahlgrenska Hospital, Gothenburg, Sweden

This year marks the fortieth anniversary of the first use of a free abdominoplasty flap in breast reconstruction. Before this operation the options open to a woman who had undergone a mastectomy and who was seeking some sort of breast reconstruction were extremely limited. The main approach available at the time was a multi-staged pedicled flap taken from the abdomen – a procedure that took several months to complete, was extremely taxing on the patient and very uncertain of outcome. Understandably, it was not often performed. The free abdominoplasty flap operation, performed in Gothenburg, Sweden in 1979 changed all that. Microsurgery had made possible an operation that could in one session reconstruct a breast. This operation, and the pedicled TRAM flap which followed two years later, transformed breast reconstructions from rarely performed procedures to common operations. This is all part of recorded history. What is not known is the major Australian contribution to this pioneering work. Bernard O'Brien had established a Microsurgery Research Unit which became part of St Vincent's Hospital in Melbourne in 1976. The whole operation was planned there, all the anatomical research was carried out in the unit's cadaver laboratory, and both the microsurgeons who were to perform the operation, one Swedish and one Australian, were trained there. And all the time that this preparation was being carried out in Melbourne, The Sahlgrenska Hospital in Gothenburg, Sweden, where the trailblazing operation was to take place, did not even have a microsurgery unit. On the fortieth anniversary of the operation, it is time to finally acknowledge

## Expression of Cathepsins B, D and G in metastatic head and neck cutaneous squamous cell carcinoma

**Felix Humphries<sup>1</sup>, Helen D Brasch<sup>1</sup>, Erin Paterson<sup>1</sup>, Josie Patel<sup>1</sup>, Nicholas Bockett<sup>1</sup>, Paul F Davis<sup>1</sup>, Swee Tan<sup>1,2,3</sup>**

1. Gillies McIndoe Research Institute, Wellington, WGN, New Zealand

2. Wellington Regional Plastic, Maxillofacial & Burns Unit, Hutt Hospital, Wellington, New Zealand

3. Department of Surgery, The Royal Melbourne Hospital, The University of Melbourne, Melbourne, Australia

### *Purpose*

We have previously demonstrated the presence of two cancer stem cell (CSC) subpopulations within metastatic head and neck cutaneous squamous cell carcinoma (mHNCSCC) expressing components of the renin-angiotensin system (RAS), which promotes tumourigenesis. Cathepsins B, D and G are enzymes that constitute bypass loops for the RAS. This study investigated the expression and localisation of cathepsins B, D, and G in relation to CSC subpopulations within mHNCSCC.

### *Methodology*

Immunohistochemical staining was performed on mHNCSCC tissue samples from 20 patients to determine the expression and localisation of cathepsins B, D, and G. Immunofluorescence staining was performed on two of these mHNCSCC tissue samples by co-staining of cathepsins B and D with OCT4 and SOX2, and cathepsin G with mast cell markers tryptase and chymase. Western blotting and quantitative reverse transcription (RT-qPCR) were performed on five mHNCSCC samples and to four mHNCSCC-derived primary cell lines, to determine protein and transcript expression of these three cathepsins, respectively. Enzyme activity assays were performed on mHNCSCC tissue samples to determine whether these cathepsins were active.

### *Results*

Immunohistochemical staining demonstrated the presence of cathepsins B, D and G in in all 20 mHNCSCC tissue samples. Immunofluorescence staining showed that cathepsins B and D were localised to the CSCs both within the tumour nests (TN) and peri-tumoral stroma (PTS) and cathepsin G was localised to the phenotypic mast cells within the PTS. Western blotting demonstrated protein expression of cathepsin B and D, and RT-qPCR demonstrated transcript expression of all three cathepsins. Enzyme activity assays showed that cathepsin B and D to be active.

### *Conclusion*

The presence of cathepsins B and D on the CSCs and cathepsin G on the phenotypic mast cells suggest the presence of bypass loops for the RAS which may be a potential novel therapeutic target for mHNCSCC.

## A proteomic signature of treatment response in HPV-related oropharyngeal cancer

**Christopher Jackson**<sup>1</sup>, Jia (Jenny) Liu<sup>2</sup>, Asim Anees<sup>2</sup>, Zainab Noor<sup>2</sup>, Steven Williams<sup>2</sup>, Sandro Porceddu<sup>3</sup>, Howard Liu<sup>3</sup>, Rahul Ladwa<sup>3</sup>, Joseph Whitfield<sup>4</sup>, Roger Reddel<sup>2</sup>, Qing Zhong<sup>2</sup>, Phillip J. Robinson<sup>2</sup>, Ben Panizza<sup>1</sup>

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### Purpose:

Prediction of treatment response within HPV-positive oropharyngeal squamous cell carcinoma (OPSCC) remains crude. We aimed to develop and validate a pre-treatment proteomic signature that identifies the high-risk subset of HPV-positive OPSCC. This model would improve both individual prognostication as well as recruitment of clinically appropriate patients for de-escalation trial inclusion.

### Methodology:

This retrospective case-control study included 124 patients with locally advanced HPV-positive OPSCC treated with definitive radiotherapy +/- systemic therapy at the Princess Alexandra Hospital (PAH, Brisbane, Australia) between 2007 and 2019. Ethical approval was obtained through the Metro South Human Research Ethics Committee at the PAH. Primary tumour biopsy specimens were analysed using data-independent acquisition mass spectrometry. Disease free survival (DFS) was the primary end-point and combined residual and recurrent disease occurring within the 5-year follow-up period. A proteomic signature associated DFS was identified from the top 50 proteins in univariate cox, as the set of proteins that formed the optimal combination to achieve a multivariate cox model with the lowest Akaike Information Criterion.

### Results:

A 21-protein signature was identified through this analysis. When applied to the training cohort, computed risk score categorised patients into low, intermediate and high risk of recurrence ( $P < 0.0001$ ). The top 10 proteins from the 21-protein signature out-performed clinicopathological variables in prediction of DFS for the training cohort (Hazard ratio (HR) 30.76,  $p < 0.001$ , c-index 0.843). This proteomic signature was validated using the heterogeneous head and neck cancer TCGA cohort for overall survival ( $n = 502$ , HR 1.7,  $p = 0.0002$ ).

### Conclusion:

This 21-protein signature represents the first proteomics-based risk stratification model for HPV-positive OPSCC. Refining pre-treatment prognostication, through application of this protein signature, has the potential to benefit both the individual patient and trials.

## Outcomes of osseointegrated implants in head and neck cancer patients

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## Purpose

To determine the outcomes of osseointegrated implants in patients treated for head and neck cancer.

## Methodology

Retrospective cohort study of patients who have received osseointegrated implants placed at a single head and neck center between January 1st 2008 to June 31st 2018. The Kaplan-Meier method was utilised for survival estimates of implants placed into native bone and reconstructed bone. Cox regression was used for multivariate analysis of factors affecting implants survival.

## Results

A total of 244 implants were placed into native bone and 236 into vascularised bone grafts with follow up ranging from 6 to 108 months. Implants placed into free flap bone compared to native bone had a higher failure rate (HR 7.26, 95%CI 1.8-28.5,  $p=0.005$ ). Radiation, chemotherapy, hyperbaric oxygen, smoking and position had no effect overall. Comparing implant survival in free flaps by donor site including fibula, iliac crest, scapula, radial forearm and medial femoral condyle showed no difference in survival ( $p=0.68$ ). One and five year survival rates in more commonly utilised flaps were 97% and 82% for fibula, 97% and 87% for iliac crest and 96% and 74% for scapula. Factors that negatively affected implant survival in composite free flaps included previous smoking (HR 9.53, 95%CI 2.25-79.16,  $p=0.037$ ), current smoking (HR 20.3, 95%CI 2.41-171.26,  $p=0.006$ ) and placement in radiation exposed bone (HR 3.79, 95%CI 1.03-13.85,  $p=0.04$ ).

## Conclusion

Implant survival rates in head and neck cancer patients are acceptable, however, they are lower in composite free flaps compared to native bone. There is no difference in implant survival among different composite free flaps. Smoking history and radiation exposure have a negative effect on implant survival when placed in composite free flaps.

id #1378

## Presence of transcription factors involved in pluripotency in head and neck mucoepidermoid carcinoma

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## Background

Mucoepidermoid carcinoma (MEC) is the most common malignant salivary gland tumour making up to 35% of malignant salivary gland tumours. There is accumulating evidence that cellular dedifferentiation whereby cells acquire a multipotent progenitor-like state regulated by the overexpression of key transcription factors, is a common feature in some solid tumors.

## Aim

The aim of our study was to determine whether the transcription factors KLF4, SOX2 and c-MYC, which when co-expressed are central regulators of cellular dedifferentiation to pluripotency, are present in MEC.

## Methods

Total RNA was extracted from MEC tissue to analyse gene expression of KLF4, SOX2, c-MYC

and the epithelial cell adhesion marker EpCAM using real time quantitative PCR (RT-qPCR, n = 6, biological replicates). For spatial profiling, tissue was fixed and immunohistochemical staining (n = 9, biological replicates) was performed with KLF4, SOX2, and c-MYC. EpCAM was also included to identify tumour nests from stroma. Five control samples were stained for the same markers as the tumor samples.

## Results

Immunohistochemical staining and RT-qPCR demonstrated protein and mRNA expression of all three transcription factors and EpCAM, respectively. Serial immunohistochemical imaging of the tumour samples showed subpopulations of EpCAM positive tumour cells co-expressing KLF4, SOX2 and c-MYC.

## Conclusion

Here we report the presence of transcription factors that have been shown to be involved in regulating pluripotency in MEC. Further studies are warranted to determine the causative role of these subpopulations in MEC phenotype.

id #1228

## Effect of introduction of surgeon-performed ultrasound to a head and neck surgical oncology clinic

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**Purpose:** Surgeon-performed ultrasound (SUS) for head and neck masses is increasingly performed by head and neck surgeons. This is the first Australian study assessing its impact in a head and neck surgical oncology clinic, examining the effect on various parameters.

**Methodology:** Retrospective analysis was conducted on a prospectively collected database, analysing and comparing all new patients reviewed six months prior to (pre-SUS group), and six months following (post-SUS group) the introduction of SUS to the outpatient head and neck surgical oncology clinic. Number of radiology imaging investigations, fine-needle aspirations (FNA) performed, clinical appointments, and time to definitive treatment decision were analysed and compared.

**Results:** 365 patients were included in this study: 169 in the pre-SUS group and 196 in the post-SUS group. The groups were well-matched in demographics, sites of disease and diagnoses. There was a statistically significant difference between the pre-SUS and post-SUS groups in the number of total radiological imaging investigations performed (1.60 vs 0.70,  $p < 0.00001$ ), radiologist-performed FNAs (0.24 vs 0.10,  $p = 0.0234$ ), time for definitive treatment decision being made (16.4 days vs 11.6 days,  $p = 0.04338$ ), and number of clinical encounters (3.03 vs 2.29,  $p < 0.00001$ ). No statistically significant difference was observed in the number of head and neck surgical oncology clinic appointments between the 2 groups (1.70 vs 1.66,  $p = 0.6672$ ).

**Conclusion:** Surgeon-performed ultrasound decreases the number of radiological imaging tests performed, number of radiology FNA's performed, time for definitive treatment decision being made, and number of clinical appointments overall. This supports its use in head and neck cancer clinics and has important implications for both patients and the healthcare system.

id #1413

## Does a same day 'see and treat' clinic improve skin cancer excision



## rates?

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*Purpose:* In 2017 our unit introduced 'See and Treat' skin cancer clinics providing consultation and surgery on the same day. Prior studies of similar service models have demonstrated decreased waiting times, lower treatment costs and high patient satisfaction. We hypothesise that the shorter waiting time to treatment and greater consultant supervision improves excision rates for cutaneous malignancies.

*Methods:* A retrospective analysis compared patients treated via the traditional consultation and waitlist model in the 11 months prior to June 2017 with 'See and Treat' patients from September 2017 for the same duration. Patient demographics, surgeon experience level, pathology type and anatomic location of lesions were recorded. Excision rates were classified as complete for microscopic margins  $\geq 0.5\text{mm}$  for basal cell carcinomas,  $\geq 5\text{mm}$  for squamous cell carcinoma and any clearance for squamous cell carcinoma in situ or excision biopsies of melanoma.

*Results:* 762 patients with 1189 lesions were treated through traditional waitlist clinics and 870 patients with 1117 lesions through 'See and Treat'. Patient demographics, pathology and lesion locations were comparable between the groups. Complete excision rates were higher in the 'See and Treat' group (79.7% vs 74%,  $p=0.0175$ ). Risk factors for incomplete or narrow excision were lesions located on the ear, scalp, nose and eyelids.

*Conclusion:* 'See and Treat' clinics improve excision rates for skin cancers, in addition to reducing waiting times and increasing patient satisfaction.

id #1399

## A review of locoregional reconstructive options for cutaneous periauricular defects in the era of microsurgery

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### Purpose

Cutaneous periauricular defects following resection of head and neck malignancies are commonly encountered by the reconstructive surgeon. Cancers arising in this area are of higher risk and comprehensive excisions are warranted, leading to defects with significant functional and aesthetic burden. Over time, locoregional flaps for defects of the head and neck are being employed less frequently as the efficacy of free flaps in a broad patient population continually improves. Optimal outcomes, however, are not always the result of microsurgical reconstruction, and local tissue may provide superior qualities.

This presentation will seek to classify periauricular defects and highlight multiple feasible local and regional options available in each of the sub-sites described. Case examples will be discussed and a review of the current literature undertaken.

The purpose is to prompt the reconstructive surgeon to consider all options when presented with these defects and consider the benefits of locoregional reconstruction.

### Methodology

A novel classification system of cutaneous periauricular defects was formulated, and reconstructive options for each proposed. A literature review of *PubMed* and *MedLine* was performed using terms related to each defect and type of reconstruction – a total of forty-two papers were reviewed. Cases

are used to illustrate several of these operative choices.

### **Conclusion**

Locoregional flaps can provide reliable and aesthetically favourable reconstruction of cutaneous periauricular defects and should be considered when reconstruction is planned.

**id #1348**

## **Spring-assisted cranioplasty for sagittal craniosynostosis – Our 10 year experience**

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**Purpose:** Spring-assisted cranioplasty is an alternative surgical option for patients with sagittal craniosynostosis practiced at our centre since 2009. The technique has been described as being less invasive with reduced morbidity compared to total calvarial remodelling but requires a second procedure for spring removal. We hope to present our centre's experience with this technique over the last 10 years.

**Methods:** Clinical notes of all patients with sagittal craniosynostosis treated by our craniofacial team between 2009 and 2019 was reviewed for complication rates, operative time, transfusion requirement, and cephalic index difference. Outcomes of the first five years of practice were then compared to the latter five.

**Results:** 32 patients included with mean follow up of 48 months. No events of dural tears, cerebrospinal fluid leak or increased intracranial pressure. One patient was readmitted for suspected post-operative infection, one for scar revision, and one for early spring removal. Three patients required further revision for inadequate correction and all were in our first five years of practice. Despite this, correction measured by mean cephalic index difference in initial and latter five years was 5.8 vs 7.1 ( $p < 0.00001$ ). Further comparisons of first and latter five years showed improving practice with reduced theatre time for spring insertion 178 vs 130 minutes ( $p = 0.000108$ ), and reduced transfusion requirements with 100% vs 47% of patients requiring blood which could related to the increased use of tranexamic acid from 0% to 59%.

**Conclusion:** Spring-assisted cranioplasty is a safe technique for sagittal synostosis with a low complication profile. Transfusion requirement remains an ongoing concern despite the less invasive nature of this procedure and tranexamic acid may play a role to reduce this. Over time, our practice continues to improve which may be due to the learning curve, paradigm shift in anaesthetic care, or modifications in operative technique.

**id #1387**

## **Extended use of antimicrobial silver dressings: An in vitro health economics study**

**Andrew May<sup>1</sup>, Zlatko Kopecki<sup>1</sup>, Allison Cowin<sup>1</sup>**

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**Background and aims:** Large wounds such as major burns are susceptible to microbial infection and resulting biofilm. Consequences of infected wounds include mortality and also significant morbidity from complications such as delayed wound healing, contracture and skin graft loss. Antimicrobial

dressings such as those containing silver are widely used. These release ionised silver ions which have a wide mechanism of action. Such dressings are, however, expensive and, because of the concern for oxidation of the silver within once opened, these products are currently for single use only, which is less cost effective. This study aimed to investigate the effectiveness of commonly used antimicrobial silver dressings if opened and used in piecemeal fashion over 3 months.

Method: Commercially available silver based dressings were tested *in vitro* against *staphylococcus aureus*, *pseudomonas aeruginosa* and *escherichia coli*. The standard Kirby-Brauer diffusion disc lab assay was used, which measures the Zone of Inhibition surrounding antimicrobial agent on lawned agar plates. Fresh dressings were tested for then divided and stored at three temperature points in a sealed container. Dressings were sampled and re tested at 1, 3, 6 and 12 weeks to detect any reduction in effectiveness.

Results: Aquacel Ag, Acticoat and Acticoat 7 were all effective against the pathogens with no loss of antimicrobial activity at any storage temperature over the 3 month period. Mepilex Ag yielded no zone of inhibition against any pathogen, however this is consistent with previous studies.

Conclusion: Except for Mepilex Ag, there seems to be no reduction in *in vitro* effectiveness of antimicrobial silver dressings for 3 months once packaging is opened, regardless of storage temperature. This suggests that any oxidation of silver is not clinically significant and that economically minded use of silver dressings in piecemeal, opened packaging fashion may be safe.

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id #1214

## White Island burn distribution patterns

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On 9th December 2019, White Island in New Zealand erupted when 47 people were on or near the island. At the time of eruption, they were broadly separated into three groups; one group nearing the crater (most suffered immediate loss of life), another group headed back to the jetty, and a group of five who had arrived on a tourist helicopter. Of the initial survivors, 31 (age range 13-72) sustained extensive burns requiring admission to Plastic Surgical departments around the country. The average Total Body Surface Area (TBSA) burn was 45% (range 7-90%). Distribution and severity of injury varied according to proximity to the crater and therefore exposure to blast injury, thermal injury and acidic ash from pyroclastic flow.

Within a few days of the eruption, increasing distance from the eruption was correlating with survival. Clothing and personal protective equipment influenced burn distribution. Patterns of injury were unique to this incident and consistent among many survivors. These included severe burns to both palmar and dorsal hands with sparing of feet, scalp, perineum and perioral areas. These burn distributions naturally impacted upon the surgical management including donor site availability. Those with perioral sparing from use of masks had less significant inhalation injury.

We report on patients cared for at the National Burn Centre for New Zealand. Specifically we consider how burn distribution and survival was influenced by location on the island during the eruption, extent of clothing and use of masks, behavioural responses and first aid, exposure time and extraction methods.

## Therapeutic potential for the treatment of adenoid cystic carcinoma

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### INTRODUCTION

The natural history of adenoid cystic carcinoma (ACC) is relentless, defined by treatment failure, locoregional recurrence and metastatic disease. Treatment options are limited to palliative systemic therapy. Despite the introduction of therapies against new treatment targets, clinical trials present poor response rates and survival benefit.

### METHODS

Our research is focused on improving the therapeutic potential for treatment targets in head and neck ACC. This work has focused on the application of novel prochlorperazine (PCZ) combination therapy to promote increased clustering of treatment targets. This repurposing of PCZ is centred on inhibition of dynamin mediated endocytosis pathways. The combination therapy of PCZ and cetuximab (anti-EGFR) combination therapy has recently completed phase I clinical trials and is soon to commence phase II trial. Our research is now centred on the application of PCZ combination therapy to ACC treatment targets, including prostate specific membrane antigen (PSMA). PSMA is expressed in up to 94% of ACC cases and is internalised via the same mechanisms as EGFR opening the possibility of PCZ combination therapy to promote tumour homogeneity and improved treatment responses.

### RESULTS

We present application of PSMA from its namesake in the prostate to head and neck ACC. This includes PCZ spatiotemporal manipulation across preclinical models in PSMA expressing disease. This translational research is centred on improved PET staging, radionuclide and immunotherapy applications. This is underpinned by presented clinicopathological data and correlated treatment targets highlighting an ACC patient population in need for improved treatment.

### CONCLUSION

This presentation presents the foundation for improving response rates and outcomes for therapeutics undergoing clinical trial and future immunotherapy applications in ACC and PSMA expressing cancers.

## Highlighting the value a breast reconstruction clinical nurse specialist brings to a plastic surgery unit

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Publish consent withheld

## The effects of COVID-19 in plastic surgery emergencies: What have we learned?

**Robert Phan<sup>1</sup>, David Lee<sup>1</sup>, David Urbanavicius<sup>1</sup>, Thomas Boland<sup>1</sup>, Maryum Qureshi<sup>1</sup>, Richard Zinn<sup>1</sup>, Rodrigo Teixeira<sup>1</sup>**

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**Introduction:** COVID-19 has had significant impact upon all health services. On 16<sup>th</sup> March 2020 the state of Victoria introduced policies to reduce the risk of COVID transmission, such as banning congregations. Clinicians were also compelled to alter their practice to reduce risk to health care workers and patients such as reducing aerosol generating anaesthesia. This study aimed to determine if these measures have changed the presentation patterns in traumatic injuries and anaesthesia use.

**Method:** A retrospective analysis of plastic surgery emergencies presenting to our health service from 15<sup>th</sup> January to 14<sup>th</sup> May in 2019 and 16<sup>th</sup> January to 14<sup>th</sup> May 2020 was performed, representing 60 days either side of lockdown measures.

**Results:** 307 patients presented prior to lockdown and 307 presented after in 2019, with 307 and 287 patients presenting in 2020 respectively. Patients presented with similar age distribution, location of injury and region of injury, although less patients were injured with power tools and more injured by crush injury in 2020. When comparing after lockdown in 2020 and corresponding period in 2019, there was an increase in power tool, crush and workplace related injuries, with corresponding decrease in sporting injuries. There was a reduction in proportion of general anaesthesia use after guidelines were revised with no adverse patient outcomes.

**Conclusion:** Although similar number of traumas cases requiring operative management presented in 2019 and 2020 periods either side of lockdown, the mechanism of injury, location and region of injury did show differing trends, which can be used for future risk education and resource allocation. Anaesthesia use was successfully de-escalated without adverse events, enhancing both patient and clinician safety and likely reflects previous overuse of general anaesthesia and sedation.

## Exploiting 3-D models of salivary gland adenoid cystic carcinoma to discover novel therapies and biological insights

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AdCC is predominantly driven by the activation of the proto-oncogene MYB which encodes a transcription factor that in turns governs cell fate and stem-progenitor cell expansion; key processes subverted in cancer. The development of 3D models of AdCC has provided an unprecedented opportunity to explore a novel link between MYB expression and a neural crest cell fate marker expression. Consistent with the neural crest cell of origin of this tumour we examined this relationship by profiling of tumouroid cultures for MYB and neuronal and stem cell gene expression signatures (eg, SOX10, CD133, Nestin, NOTCH1, MAP2, GMP6b, FAB7, TUBB3). In parallel we have undertaken a comprehensive multiplex immunohistochemistry analysis of tumouroids of these gene markers. In rarer situations, AdCC is driven by a MYB family member – MYBL1 (A-MYB) and here we explored the reciprocal situation where either but both family members are expressed. This information is highly relevant to understanding outcomes of reported and ongoing AdCC clinical trials that target MYB.

## Case series: Immediate targeted muscle reinnervation in two quadruple amputees

**Emma-Leigh Rudduck<sup>1</sup>, Frank Bruscino-Raiola<sup>1</sup>, Abby Hutchinson<sup>1,2</sup>, David Lee-Gow<sup>1,2</sup>, Margaret Angliss<sup>1</sup>**

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Amputations confer significant long-term issues, with pain, physical and psychological disability. We present the first two cases of quadruple amputees that have undergone acute Targeted Muscle Reinnervation (TMR) in a specialised centre with multidisciplinary team involvement. Our aims were to reduce pain post-operatively and improve myoelectric control of prostheses. Mr JD and Ms LC, a 55 year old male and a 69 year old female respectively, underwent quadruple amputations with immediate TMR after developing four-limb necrosis from sepsis and disseminated intravascular coagulation. Each patient completed self-reporting questionnaires for each limb at 6, 9 and 12 months post amputation which evaluated wear and use of prostheses, sleep habits, phantom pain, neuroma pain and overall quality of life. Both patients had no neuropathic pain by 6 months post-operatively and considerable reduction or complete resolution in phantom limb pain by 12 months. This coincided with little to no analgesia use by 6 months in both cases and supports the current literature for amputees post TMR. We obtained better myoelectric control with Ms LC as she had a two site myoelectric prosthesis and intuitive control with virtual prostheses for bilateral upper limbs. Unfortunately due to funding, the definitive prescription of multi-articulating pattern recognition prosthesis is currently being determined for both patients. Despite this, both have had similar functional outcomes at 12 months with the ability to walk unaided at home or outside on uneven ground. We hope to expand our service in future.

## A comparison of the genomic profiles of young and old Patients with oral squamous cell carcinoma demonstrates a higher rate of EGFR copy number variation in younger patients

**Laveniya Satgunaseelan<sup>1,2</sup>, Sean Porazinski<sup>3,4</sup>, Dario Strbenac<sup>5</sup>, Aji Istadi<sup>3</sup>, Cali Willet<sup>6</sup>, Tracy Chew<sup>6</sup>, Rosemarie Sadsad<sup>6</sup>, Carsten E Palme<sup>7</sup>, Jenny Lee<sup>8</sup>, Michael Boyer<sup>8</sup>, Jean YH Yang<sup>5,9</sup>, Jonathan R Clark<sup>2,7,10</sup>, Marina Pajic<sup>3,4</sup>, Ruta Gupta<sup>1,2,7</sup>**

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5. *School of Mathematics and Statistics, The University of Sydney, Sydney*

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8. *Department of Medical Oncology, Chris O'Brien Lifehouse, Sydney*

9. *Charles Perkins Centre, The University of Sydney, Sydney*

10. *Royal Alfred Institute of Academic Surgery, Sydney*

OSCC in patients under the age of 50 years is on the rise globally, with limited personalised treatment options. Our study uncovers a clinically actionable molecular profile in a well curated institutional cohort of OSCC patients <50 years (n=17), with validation utilising TCGA dataset (patients <50 years – n=9; patients >50 years – n=11). We demonstrate significant divergence at the genomic and transcriptomic level between these two age groups. Whole genome and transcriptomic sequencing revealed a subset of OSCC patients <50 years with *EGFR* amplification and increased EGFR RNA abundance. Functional assays using patient tumour-derived cell lines (PDCLs) demonstrated responsiveness to treatment with a panel of EGFR inhibitors in PDCLs with *EGFR* amplification. Encouragingly, afatinib, a second-generation EGFR tyrosine kinase inhibitor, proved an efficacious therapeutic opportunity. Our findings of *EGFR* amplification were validated with fluorescent *in situ* hybridisation (FISH). FISH is a widely available testing modality in diagnostic pathology laboratories, which can be readily used to identify suitable young patients for targeted therapy in the future.

**id #1395**

## **Indocyanine green fluoroscopy in free flap surgery: a single surgeon's experience in Waikato**

**Maria Mani<sup>1</sup>, Eric Tan<sup>2</sup>, Luxi Sun<sup>2</sup>**

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Introduction: We would like to explore the use of indocyanine green fluoroscopy (ICGf) in our free flaps service.

Methods: All head and neck free flap patients operated by a single surgeon from August 2020 to April 2021 were investigated with on-table ICGf immediately after microanastomosis.

Each ICGf cycle involved intravenous injection of 12.5 mg of indocyanine green in 10 ml distilled water after initiating video fluoroscopy over the microanastomosis site.

Results: 26 patients were included: 20 head and neck, 2 post oncological hand reconstruction and 4 trauma related limb reconstruction.

Flap survival was 100%. The largest flap in this study was an anterolateral thigh flap measuring 33 cm X 9cm based on a single perforator.

All arterial and venous microanastomosis were sutured with 8'0/9'0 Ethilon and venous couplers respectively.

The mean age, weight and estimated Glomerular filtration rate (eGFR) were 56 years, 79 kg and 72. All patients had normal liver function profiles.

No intravenous heparin were used prior to ICGf.

Gain at 45-55% were optimal for microanastomosis assessment.

In 5 cases where we assessed flap vascularity, Gain at 75% setting were optimal.

No anaphylaxis and/or skin reaction were observed. All patients had less than 2mg/kg of ICG.

Three required one repeat cycle (1 Indo Carmin was used in error and 2 were given before video fluoroscopy were ready).

ICGf is a sensitive tool for assessment of microanastomosis as 21 out of 26 free flaps had some leakage of the agent at the anastomosis site during fluoroscopy (no revision needed).

We observed in one case where the lumen of the flap's vein was more than 3 times the size of the arterial lumen; the fluoroscopy signals was difficult to appreciate flow within the vein.

Conclusion: In our experience, ICGf is a safe adjunct in microanastomosis assessment for free flaps.

## Osteointegrated implants for prosthetic based ear/eye reconstruction: a 15 years case series at Waikato DHB

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Introduction: Osteointegrated implants (OII) based reconstruction of the ear and eye has been reported to be a good alternative to autologous reconstruction.

We would like to share our 16 years case series of OII in Waikato DHB.

Methods: A list of patients treated in prosthetic department from March 2004 to February 2020 were generated and a standardised proforma was used for data collection.

Results: A total of 59 patients with 89 prosthesis for ear and one for eye were included in this case series. 47 patients had a one stage reconstruction.

Mean age was 36 years with the youngest patient being 2 and oldest 88 years. 51 patients are Pakeha, seven Maori and one has Fijian ethnic background.

Male: Female ratio was 26:33. Average follow up time was 23 months (range 11 months to 35 months).

Seven patients were current smoker at the time of OII surgery, 2 ex-smoker (6 months or more) and the remaining were non-smokers.

Forty-five cases were for congenital defects (41 for isolated ear congenital abnormality and four as part of syndromic pathology). Six were performed for chronic infection resulting in loss of major subunits of ear(s), seven for neoplastic pathology and one for external ear trauma.

Forty eight were for functional hearing purpose and 41 for craniofacial implants for external ear reconstruction.

Infection was reported in 18 patients with 15 treated with antibiotics alone. Three out of 89 prosthesis (3%) required removal and washout of insertion site. There was no statistical difference in infection rates between different indication groups.

All 7 smokers developed infection of implants while 11 of 52 non-smoker/ex smoker developed infection. In radiotherapy group 2 out of 13 implants became infected.

Conclusion: Infection rate is low in our case series with smoking being a high risk factor for this.

## Evaluation of a streamlined head and neck service from conception to delivery of service with enhanced recovery regimes: a 12 months experience in Waikato

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Introduction: A new streamlined head and neck service (sHNS) was evaluated in Plastic Surgery, Waikato DHB to improve service delivery. We wish to share our learning experience and pitfalls in setting this combined service.



Methods: A detailed analysis of all head and neck procedures managed by the presenting author from August 2020.

Results: From August 2020, over a period of six months, 21 patients had free flaps combined with neck dissection, 10 patients had regional flap reconstruction combined with neck dissection and 9 with neck dissection alone.

Radial forearm and thigh flaps were our main reconstruction options of choice in addition to four functioning gracilis, 1 jejunal, 1 latissimus dorsi and 1 chimeric fibula flap.

All flaps survived and 92% have more lymph nodes count than Sydney Melanoma Unit index. Our worst complication were bilateral pneumothoraces and pulmonary embolism on the same day of surgery (fibula flap).

29 out of 40 patients were over 70 years of age (73%). 12 reported significant pain/anxiety and 9 with significant weight/appetite loss at pre-operative stage.

All 40 patients were seen by members of a surgical pre-operative optimisation and post-surgical rehabilitation multidisciplinary team during first outpatient consultation. 22 patients over 70 years of age required immediate intervention pre-operatively.

Safeguards for robust flap monitoring in the ward remains our greatest challenge with 3 out of 4 patient requiring return to theatre for evacuation of haematoma at day 6 (1) and low threshold exploration (2). An enhanced recovery regime was developed to improve this deficit.

Post-operative protocols based on validated questionnaires identified 3 more patients for revision surgery and 2 for pain team referral.

Conclusion: Our 6 months data suggests sHNS improves patient care with holistic pre-operative and post-operative multidisciplinary approach. A 12 months data will be available by July for further evaluation.

**id #1335**

## **Finishing the job: review of techniques for revision and refinement in head and neck reconstruction**

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Facial disfigurement is a distressing consequence of head and neck cancer reconstruction. The degree of perceived disfigurement is related to T-stage, surgical procedure, presence of post-operative complications, radiation and associated functional deficits such as drooling, impaired swallow and speech impediment. Self-image is a critical psychosocial factor in patients' lives and can affect many domains such as self-esteem, interpersonal relationships, occupation and ongoing engagement with society. These factors all contribute significantly to long-term quality of life. The goal of the index reconstruction is to facilitate adequate oncologic resection and expedite wound healing to minimise time to adjuvant treatment. Subsequent revision procedures focus on complications, functional deficits, restoring facial subunits, addressing contour deformities and asymmetries. Surface colour and texture often fall low on the agenda but can be very effective in the final stages of pursuit to replace like with like and reducing residual hallmarks of pathology. Refinement techniques include free flap revision, closure of fistulae, local flaps, symmetrising procedures, liposuction, fat grafting, scar revision, laser, resurfacing and even tattooing. We present a review of current techniques for head and neck reconstruction revision and our series of patients to illustrate these techniques.

# Abstracts: Posters

In Alphabetical Order  
(presenting author surname)

## Squamous cell carcinoma of the scalp; a surgical perspective from Brisbane

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### Purpose

Queensland is third-most populous state in Australia and yet has the highest incidence of Non Melanoma Skin Cancer (NMSC) in Australia.<sup>1</sup> Squamous Cell Carcinoma (SCC) is the second most common tumour of the scalp and can present with advanced disease posing unique challenges for surgical reconstruction and curative outcomes.

We present our surgical experience of scalp SCC in a tertiary plastic surgery centre evaluating prognostic factors, reconstruction options and clinical outcomes.

### Methodology

Over a four year period (2014 to 2017) we retrospectively reviewed patients with cutaneous SCC of the scalp treated by surgical excision at the Royal Brisbane and Women's Hospital, Brisbane, Queensland. These data were analysed for clinical demographics, pathological features, surgical management and outcomes (recurrence or mortality).

### Results

There were 239 scalp SCCs in 215 patients. The majority of patients were male (95%) with a median age of 75 years. Important risk factors at presentation were noted in the cohort; immunocompromised (4%), previous radiotherapy (14%), regional lymphadenopathy (3%) and involvement of the skull (6%). The majority of tumours were pathologically moderate (45%) or poorly (29%) differentiated, with an overall mean depth of 6mm (range 0.9 – 35 mm). Furthermore, perineural invasion was noted in 11% of tumours. Clear surgical margins were achieved in 95% of patients. Scalp defects were reconstructed utilising skin grafting (51%), local flaps (34%) and free flaps (6%). Clinical outcomes at 5 years were disease free progression (70%) and disease specific mortality (10%).

### Conclusion

Our experience of scalp SCC highlights a high risk patient population presenting with pathologically advanced tumours. We advocate an aggressive surgical excision with appropriate reconstruction to achieve clearance margins and optimise overall clinical outcomes.

1. Pollack A, McGrath M, Henderson J, Britt H. Skin cancer by state and territory. Aust Fam Physician. 2014;43(8):507.

## The utility of frozen section pathology in oral squamous cell carcinoma - A systematic review

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Background: Oral squamous cell carcinoma (SCC) is the most common head and neck malignancy with approximately 200,000 cases diagnosed each year and 100,000 patient deaths annually. Due to the complex oral anatomy and decreased visual and physical access, achieving adequate surgical margins on primary excision of oral SCC can be challenging. Frozen section histopathological analysis aims to examine tissue samples intraoperatively and assess the adequacy of tumour resection margins to guide further treatment. The literature surrounding its use and impact on

improving final margin status, recurrence and survival in cases of oral SCC is mixed.

**Objectives:** This study aimed to systematically review the literature and compare final margin status, locoregional recurrence and overall survival between cases of oral SCC surgically resected with frozen section intraoperative analysis versus gross examination of the tumour specimen alone.

**Methods:** A systematic review was conducted adhering to the Preferred Reporting Items for Systematic Reviews (PRISMA) guidelines. A search was performed in EMBASE, PubMed, Cochrane Library and Scopus. No date or language restrictions were applied. Observational and experimental studies that directly compared one or more of the primary outcomes between the two cohorts were considered for inclusion.

**Results:** Five studies met the inclusion criteria. Due to a paucity of data and study heterogeneity a met-analysis was not performed. There was no significant difference in final margin status, disease free survival or overall survival between cases of oral SCC resected with the use of frozen section intraoperatively and with clinical examination alone.

**Conclusion:** As a result of the current findings, including but not limited to the significant monetary cost incurred and the time required, the routine use of frozen section analysis in the surgical treatment of oral SCC is not recommended.

**id #1217**

## **Fibreoptic endoscopic evaluation of swallow in transoral robotic surgery (TORS): An examination of the acute post-operative period for oropharyngeal squamous cell carcinoma**

**Emma Charters<sup>1</sup>, Hans Bogaardt<sup>2</sup>, Amy Freeman-Sanderson<sup>3</sup>, Kirrie Ballard<sup>2</sup>, Jonathan Clark<sup>1</sup>**

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**Background:**

Transoral Robotic Surgery (TORS) is a minimally invasive approach for the treatment of oropharyngeal squamous cell carcinoma (OPC). The effects on swallowing and speech need to be comprehensive evaluated in order to understand the associated morbidity and to educate prospective patients pre- and post-operatively.

**Methods:**

A prospective cohort of 21 patients were recruited to undergo baseline and repeated post-operative swallowing, communication and weight measurements up to x months post-surgery. Fiberoptic endoscopic evaluation of swallowing was used to examine secretion burden, airway protection, aspiration risk and the presence of residue.

**Results:**

16 patients (76.2%) had penetration-aspiration scores  $\geq 3$  or higher, seven (33.3%) aspirated on liquids and three (14.3%) did so silently, representing a deterioration in swallow function compared with baseline, with a recovery trajectory that did not return to baseline for 9 (42.5%) patients at 6 months. Swallowing and communication scores were significantly worse in base of tongue primary tumours and with advanced age.

**Conclusion:**

Patients experience a significant decline in swallowing function post-TORS with a heavy secretion load, pharyngeal residue, laryngeal penetration and aspiration, and weight loss. This improves within 3 months but often does not reach baseline levels in this period. Silent aspiration occurred in 14% and thus warrants instrumental assessment to ascertain aspiration risk.

## Systematic review and meta-analysis of the impact of dosimetry to dysphagia and aspiration related structures

**Emma Charters<sup>1</sup>, hans bogaardt<sup>2</sup>, amy freeman-sanderson<sup>3</sup>, Kirrie Ballard<sup>2</sup>**

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### Background

Technological advances in radiotherapy have allowed investigations into new methods to spare healthy tissue in those treated for head and neck cancer. This systematic review with meta-analysis demonstrates the effect that radiation has on swallowing.

### Methods

Selection and analysis of studies examining the effect of radiation to swallowing structures. A fixed effects meta-analysis calculated the pooled proportions for select outcomes of dysphagia, common across many studies.

### Results

The majority of the papers found a correlation between radiation dose to the swallowing structures and dysphagia, however a meta-analysis found the studies carried a significant degree of heterogeneity. The appraisal demonstrates the need for large-scale studies using a randomized design and instrumental dysphagia assessments.

### Conclusions

Radiation dose to dysphagia and aspiration structures is correlated with incidence of dysphagia and aspiration. The variables in this population contribute to the heterogeneity within and cross studies and future studies should consider controlling for this.

## A case report and literature review of large early in-transit metastasis of stage I merkel cell carcinoma

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Merkel cell carcinoma (MCC) is a rare cutaneous neuroendocrine malignancy with a well-documented propensity for regional and distant metastasis. The rate of MCC metastasis to regional lymph nodes is reported at 23-45%, hence the consensus guidelines put forward by The American Joint Committee on Cancer (AJCC) and National Comprehensive Cancer Network (NCCN), recommending sentinel lymph node biopsy for clinically node-negative patients with MCC. Information regarding regional in-transit metastasis of MCC whilst scarce suggests that this is uncommon. We present a case of a 69-year-old male with a MCC of his forehead and no palpable lymphadenopathy. He underwent wide local excision with clear margins and a negative sentinel lymph node biopsy (pathological stage I), followed by adjuvant radiotherapy. He re-presented 10 months following his initial definitive excision and treatment with a massive dermal metastatic deposit in the ipsilateral temporal region. We also review the available literature on patterns and risk factors for MCC metastasis in general, with a particular focus on in-transit metastasis.

## Microvascular reconstruction of head and neck defects in the elderly

**James Every**<sup>1,2</sup>, **Narayana Subramaniam**<sup>1</sup>, **Rebecca Dawson**<sup>1</sup>, **Sydney Ch'ng**<sup>1</sup>, **Tsu-Hui (Hubert) Low**<sup>1,2</sup>, **Carsten Palme**<sup>1</sup>, **Jonathan Clark**<sup>1,2,3</sup>, **James Wykes**<sup>1</sup>

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3. Royal Prince Alfred Institute of Academic Surgery, Sydney Local Health District, Sydney, Australia

### Abstract

**Background:** Microvascular free flap reconstruction of the head and neck is a common technique utilised across many ages. The purpose of this study was to identify if advanced age or comorbidity was associated with worse postoperative outcomes in patients undergoing free flap reconstruction.

**Methods:** A retrospective analysis was performed on 344 consecutive patients undergoing free flap surgery of the head and neck. Demographic, clinical and pathological factors were considered along with Charlson Comorbidity Index scores (CCI) and American Society of Anaesthesiologist (ASA) status. Logistic regression analysis was used to investigate the association of age, CCI or ASA with postoperative complications.

**Results:** Elderly patients ( $\geq 75$  years) had a higher overall complication rate (OR 1.7,  $p=0.04$ ) that was restricted to medical complications (OR 2.1,  $p=0.05$ ) and not surgical complications (OR 1.4,  $p=0.14$ ). Reconstructions of defects from cutaneous malignancy predominated in the elderly cohort (48% vs 29%,  $p<0.01$ ), but there was no difference in complication rate when cutaneous or mucosal subgroups were separated by age or flap type (Osseous vs. Soft tissue). ASA IV was weakly associated with surgical complications (OR 3.89,  $p=0.053$ ), but CCI and elderly age were not associated with any outcome. Median length of stay was similar between age groups.

**Conclusion:** Free flap reconstruction in older patients was associated with increased medical complications, and surgical complications were weakly associated with ASA status. Advanced age or comorbidity should not preclude microvascular reconstruction, but comorbid status should be optimised preoperatively and factors predisposing to medical complications minimised where possible.

## Recurrence, metastatic rates and possible role for sentinel lymph node biopsy in cutaneous scalp SCC: a five year retrospective study in Waikato, New Zealand

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### Purpose

To audit the excision margins of cutaneous squamous cell carcinoma (SCC) of scalp correlate them with recurrence and metastatic rates; investigate if there is a role for sentinel lymph node biopsy

### Methodology

A search on Waikato DHB histology database on all patients who were recorded as having a histological diagnosis of 'SCC' and 'scalp' was conducted from October 2013 to September 2018.

Only patients with primary cutaneous SCC of the scalp were included in the study.

All cases were divided into different stages based on the American Joint Committee on Cancer

8<sup>th</sup> Edition and a standard proforma was used for data collection. Relevant statistical tests were conducted on results to investigate for significance.

## Results

291 lesions in 229 patients with cutaneous SCC were included in the study.

Average age at time of diagnosis was T1 (75 years), T2 (80 years) and T3 (82 years) (ANOVA  $p=0.8$ ) and mean follow up 18 months with 9% loss to follow up.

Incomplete or narrow excision margins at first excision was 8% overall.

Regional Metastatic rate for T1 was 6.5% (7/107), T2 9.2% (6/65) and T3 12% (7/57) (t test  $p=0.06$ ).

T1 has a recurrence rate of 100% for excision margins of less than 1 mm for peripheral margin (7/7) and 40% for deep margins (4/10) (t test  $p=0.03$ ).

Number needed to treat (NNT) is 20 for T2/T3 in comparison to T1.

## Conclusion

Our study suggests that the overall risk of regional metastasis for scalp cutaneous SCC to be low (less than 20%) with sentinel lymph node biopsy not indicated for T2/T3 groups.

id #1342

## Impacts to swallowing associated with the mandibular lingual release approach (MLRA) in the context of oral/oropharyngeal cancer: A scoping review

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**Purpose:** Conduct a scoping review to synthesise available evidence regarding the mandibular lingual release approach (MLRA) and post-operative swallowing impacts for oral cavity and/or oropharyngeal squamous cell carcinoma (OC/OPSCC). A better understanding of swallowing impacts post-MLRA is needed to inform speech pathology (SP) clinical pathways and guide dysphagia interventions for this population.

**Background:** OC/OPSCC and its subsequent surgical and non-surgical management can affect swallowing at all stages of the cancer journey. The MLRA is a rare open-access approach used for surgical resection of large or inaccessible OC/OPSCC. Currently, little is known about the relationship between the MLRA and post-operative swallowing. A synthesis of existing evidence is needed to inform future research and guide clinical practice for these patients.

**Methods:** A systematic search of 5 databases from 1950-July 2020 was conducted with 8 studies meeting study inclusion criteria. Data extraction included study purpose, design, outcome measures (OCM), participants characteristics and findings. Quality assessment was conducted using the ASHA level of evidence tool.

**Results:** Quality assessment rating was low for all studies. Only half-reported data from swallow related OCMs, and these were limited to measures from a patient-reported questionnaire ( $n=3$ ) and a non-validated clinician scale ( $n=1$ ). Dysphagia was a recognized consequence, however the absence of specificity in the data prevented calculations of incidence or severity. Three author groups commented on the potential for post-op dysfunction due to disruption of the floor of mouth musculature, however assessment of swallowing biomechanics was not conducted. There was no clear data on time to resolution.

**Conclusions:** The available evidence is biased towards reporting surgical outcomes, with only limited and low-quality data available for swallowing complications post-MLRA. For appropriate clinical pathways to be developed, further systematic studies are required investigating the biomechanics of dysphagia post-MLRA including its nature and pattern of recovery.

**id #1374**

## **Medial sural artery perforator flap – Single centre experience in extremity and head and neck reconstruction**

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**Purpose.** The medial sural artery perforator (MSAP) free flap is gaining traction as an additional option in reconstructive surgery due to its low donor site morbidity, reliable pedicle and thin, pliable characteristics. These properties make it an ideal option in a variety of head and neck, upper and lower extremity defects. To date no clinical data has been reported in the Australian population. We analyse a single centre's experience with the MSAP free flap with respect to versatility, outcomes and donor site morbidity.

**Methodology.** Retrospective analysis of consecutive cases between 2018 and 2020 using the MSAP flap. Data was collected from hospital database and operation reports, with photographic evidence used to support findings. Patient demographics, co-morbidities, indication for reconstruction, defect location, recipient vessel, Ischaemic time, length of stay, length of follow up, complications and outcome were recorded.

**Results.** Nine patients were included in this study (n=9). 8 males and 1 female, with an average age of 53.3 years (range 35-68). Three head and neck, five lower limb and one upper limb defect was reconstructed. All donor sites were closed directly, one patient developed donor site haematoma requiring evacuation. Overall 8 flaps were successful with one flap loss. Three patients required return to theatre; one for haematoma and two for venous thrombosis requiring revision. Average length of hospital stay was 13.9 days (range 9-21 days), average follow up 3 months (range 1-6 months).

**Conclusion.** The medial sural artery is a viable option across head and neck, upper and lower extremity reconstruction when thin tissue is required. It has the additional benefit of minimal donor site morbidity compared to the radial artery free flap given that it can be closed directly in most cases.

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**id #1419**

## **Wrapping and dangling in lower limb microsurgical reconstruction - can we do better?**

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**Purpose.** The immediate post-operative management of patients who undergo lower limb microsurgical reconstruction is often case and clinician based. The use of compression and introduction of gravity dependant conditioning - 'wrapping and dangling' - in the post-operative period are employed by most microsurgical centres, however a consensus on an optimal protocol is yet to exist. The timing and sequence of post-operative protocols has been speculated to impact outcomes in terms of wound healing, flap loss, function, and aesthetics. However, delay in initiation of wrapping and dangling can prolong hospital stay and patient immobilisation, thereby increasing hospital-related complications such as pneumonia, venous thrombo-embolism, and pressure injuries

**Methodology.** Retrospective analysis of single centre post-operative management of lower limb microsurgical reconstruction from consecutive cases between 2019 and 2020. Patient demographics, mechanism of injury, orthopaedic fixation, flap used, time to initiate wrapping and dangling, flap outcome, length of stay and complications were attained from hospital records

**Results.** 33 patients (34 flaps) underwent microvascular reconstruction of the lower limb. Most cases were for trauma (22), with the remainder comprising of oncology (7) and infection (4). Patients who had an unexpected return to theatre within the first 5 days were excluded from the study. Average time for commencement of compression was 6.4 days, with initiation of gravity dependant positioning at 7.1 days. There was no significant difference between fasciocutaneous and muscle flaps. Clinical monitoring and doppler ultrasound were for flap monitoring

**Conclusion.** Lack of a defined department-wide protocol for wrapping and dangling can delay patient discharge and lead to complications for both the patient and healthcare system. Unfamiliarity among allied health and junior staff with post-operative management can be a contributing factor. Herein we propose a streamlined protocol for both fasciocutaneous and muscle free flaps in lower limb reconstruction with the aim to educate junior staff

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id #1346

## Head and neck lymphoedema and dysphagia following chemoradiotherapy for head and neck cancer: A 12 month longitudinal investigation

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11. *School of Mathematical and Statistical Sciences, Arizona State University, Tempe, Arizona, United States of America*

**Purpose:** Head and neck lymphoedema (HNL) is prevalent following head and neck cancer (HNC) treatment, and has been associated with more severe dysphagia. However, little is known about its trajectory post-treatment and how this impacts swallowing. The aim of this prospective longitudinal cohort study was to: (1) examine the trajectory of HNL in patients with HNC treated with chemoradiotherapy (CRT); and (2) examine the association between HNL and dysphagia.

**Methodology:** Thirty-three patients (91% male, 91% oropharyngeal tumours) were recruited and data collected at 3, 6 and 12 months post CRT. External HNL (E-HNL) was assessed with the Assessment of Lymphoedema of the Head and Neck and the MD Anderson Cancer Centre Lymphoedema Rating Scale. Internal HNL (I-HNL) was assessed with Patterson's Radiotherapy Oedema Rating Scale. Swallowing was assessed via instrumental, clinical and patient-reported outcome measures. Associations between HNL and swallowing were examined with multivariable regression models.

**Results:** E-HNL was prevalent at 3 months (71%), had begun to improve at 6 months (58%), and was largely resolved by 12 months (10%). The majority had moderate/severe I-HNL at 3 months (96%) and 6 months (84%), with some reduction at 12 months (64%). More severe penetration/aspiration and increased diet modification were associated with higher severities of E-HNL ( $p=0.001$ ,  $0.036$ , respectively) and I-HNL ( $p<0.001$ ,  $0.007$ , respectively), and more diffuse I-HNL ( $p=0.043$ ,  $0.001$ , respectively). More difficulty eating solid foods was also associated with a higher severity of E-HNL ( $p=0.004$ ) and more diffuse I-HNL ( $p=0.002$ ).

**Conclusion:** E-HNL is most prevalent at 3 months post CRT and has largely resolved by 12 months, whereas I-HNL persists. There is some reduction in I-HNL severity/diffuseness, but it did not fully resolve over 12 months. Patients who have more severe E-HNL and I-HNL or have more diffuse I-HNL may also experience more severe dysphagia.

id #1237

## Exploring the application of machine learning to predict cancer-specific survival in head and neck cancer patients using manually curated datasets

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### **Purpose:**

Factors that impact on head and neck cancer (HNC) survival, more specifically cancer-specific survival (CSS), are poorly understood with no available survival data beyond 2009 in NSW. Furthermore, national and state cancer registries contain limited clinical data necessary for robust machine learning analysis. Therefore the Prince of Wales Hospital (POWH) manually curated HNC datasets (HREC 10/040) were used to predict CSS and identify prognostic factors.

### **Methodology:**

Content data was sourced from MOSAIQ, an oncology-specific electronic medical records system, whereas cause/date of death data was obtained via linkage with the National Death Index. Newly

diagnosed patients with squamous cell carcinoma of the oral cavity, oropharynx, nasopharynx, hypopharynx, and larynx without distant metastases, presenting at POWH between 01-01-2000 and 31-12-2017 for definitive treatment were eligible. Nineteen available demographic, tumour, and treatment variables were used for prediction. Five machine learning models (logistic regression, gradient boosted trees, random forest, support vector machine, artificial neural network) were trained with 5-fold cross-validation in Python. Factors associated with CSS were examined using forward stepwise conditional Cox regression in SPSS 25.

### Results:

Data on 886 patients was analysed, of whom 238 died from HNC (median follow up of 3.67 years). The support vector machine model scored the best overall performance metrics with 85% classification accuracy, 65% sensitivity/recall, 93% specificity, 78% precision, 70% f1 score, and 91% area under the curve. Multivariate Cox regression identified higher T and N stage, hypopharynx and oral cavity cancers (compared to larynx), and any form of radiotherapy treatment as negative prognostic factors, and operable cancers as favourable prognostic factors.

### Conclusion:

Using manually curated datasets has demonstrated high classification accuracy. The support vector machine model should be considered for use in clinical decision support systems to improve our understanding of the factors impacting on and predicting CSS to drive improvements in patient care.

id #1229

## Lateral temporal bone resections – Radiological diagnostic accuracy and prognostic indicators

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Purpose: Australia has one of the highest incidences of cutaneous malignancies in the world, and those in the peri-auricular region may require lateral temporal bone resections (LTBR). This study aims to analyse the diagnostic accuracy of various imaging modalities and the prognostic indicators for survival.

Methodology: A retrospective analysis was performed on all patients who underwent LTBR for cutaneous malignancies between January 2015 and December 2019 at a dedicated tertiary oncology referral centre.

Results: 36 patients were included in this study, with a median age of 79.96 years. Pathology was squamous cell carcinoma in 29 patients, basal cell carcinoma in 4 patients, sarcoma in 2 patients and melanoma in 1 patient. 6 patients underwent concurrent parotidectomy, 2 underwent neck dissection, and 18 underwent both. 9 required free flap reconstruction. R0 resection was achieved in 22 patients. 26 patients received post-operative radiotherapy. Computed tomography (CT), magnetic resonance imaging (MRI) and positron emission tomography (PET) showed good diagnostic accuracy in identifying disease in the parotid gland, external auditory canal, and mastoid bone, but had poor sensitivity in identifying cervical nodal metastasis (CT=0.167, MRI=0.167, PET=0.4). 11 patients recurred with a median duration of 108 days. 36% of patients undergoing salvage surgery recurred while 12% of those undergoing primary resections recurred. Overall survival at 2 and 5 years were 78% with recurrence free survival at 2 and 5 years being 75% and 48%, respectively. Tumour differentiation ( $p=0.0314$ ) and type 2 LTBR ( $p=0.0301$ ) showed significant correlation with overall survival, with post-operative N0 staging ( $p=0.0625$ ), adjuvant radiotherapy ( $p=0.0664$ ) and primary resections ( $p=0.0733$ ) approaching significance.

Conclusion: LTBR is an important treatment modality for patients with peri-auricular cutaneous malignancies. Pre-operative considerations for the extent of surgical resection including neck dissections requires clinicoradiological correlation, particularly in patients with poorly differentiated tumours.

## Primary amyloidosis of the epiglottis – Case report and review of the literature

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**Background:** Primary laryngeal amyloidosis is extremely rare and represents less than 1% of all benign laryngeal tumours. This is the third reported case of isolated primary epiglottic amyloidosis in the literature.

**Case Report:** A 54-year-old female presented to the head and neck surgical oncology clinic with an incidental epiglottic lesion found during intubation for an unrelated surgical procedure. She is an ex-smoker and was otherwise well. She was asymptomatic and flexible nasendoscopy demonstrated a small benign-appearing lesion on the right laryngeal aspect of the epiglottis. MRI identified a thickened epiglottis, with calcification and low T2 signal intensity. Panendoscopy revealed a firm lesion involving the lower half of the laryngeal surface of the epiglottis, particularly on the right side, crossing the midline and extending to the petiole. The remainder of the larynx was not involved. Histopathological examination of biopsies taken showed mucosa in which the lamina propria is largely replaced by amyloid. The patient was discussed at the head and neck multi-disciplinary meeting with the plan of ongoing observation. Her condition remained stable 4 months following her diagnosis. **Discussion:** Primary amyloidosis of the larynx is extremely rare and presents with non-specific symptoms and radiological findings. Tissue biopsy is therefore vital for diagnosis with histopathological findings being characterised by homogenous eosinophilic extra-cellular deposits which stain with Congo red under microscopy. Secondary causes of amyloidosis such as rheumatoid arthritis and myeloma may need to be excluded based on clinical suspicion. Treatment of primary head and neck amyloidosis is dependent on patient symptoms, with long term follow up recommended to monitor disease progression.

**Conclusion:** Isolated primary amyloidosis of the epiglottis is an extremely rare benign condition and diagnosis requires clinical suspicion in patients presenting with non-specific symptoms and benign-appearing laryngeal lesions. Tissue biopsy with histopathological examination is vital for diagnosis.

## A speech pathology service delivery model in radiation oncology for head and neck cancer

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**Purpose:** Currently, there is limited evidence addressing speech language pathology (SLP) service delivery in head and neck cancer (HNC). This study aims to demonstrate a service delivery model based on SLP services at Prince of Wales Hospital (POWH).

**Method:** Cross-sectional analysis of service metrics was conducted on patients receiving HNC intervention at POWH between Jan 2015-Dec 2016. Primary outcome measures were; occasions of service (OOS), clinical hours, and instrumental assessments at each stage of treatment within the first 12 months post treatment. Secondary outcome measures evaluated this service delivery model using Functional Oral Intake Scale scores and surveys completed by patients, carers and clinicians.

**Results:** Three clinical hours was the median requirement for all tumour sites at any time point. Care requirements were highest across all tumour sites immediately post treatment between 2.5 - 12.5 hours of service, and again at six months post treatment for the hypopharynx cohort with 6.1

hours of service. Instrumental assessment use was low, >16% of any tumour site, except for the hypopharynx cohort, with 57% of patients requiring modified barium swallow at three months post treatment. Functional swallowing outcomes were equivalent to or better than outcomes identified in the literature. Surveys demonstrated high rates of service satisfaction with 98% of responses reporting the SLP session was useful and 100% of responses reporting they had adequate time in sessions to address concerns.

*Conclusion:* This study demonstrated the SLP services provided to the HNC cohort at POWH within the first 12 months of treatment. The service patterns were consistent with the known peaks of treatment toxicities, and high service requirements were associated with tumour sites associated with swallowing dysfunction. The service delivery model outlined within this study may assist in the benchmarking and planning of SLP HNC services and is a step towards service standardisation.

**id #1400**

## **A novel, low-cost nerve approximating device**

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### **Purpose**

Timely primary repair of a transected peripheral nerve is the gold standard to achieve optimal outcomes<sup>1</sup>. Important technical considerations in end-to-end nerve repair include approximation under minimal tension and alignment of blood vessels<sup>1</sup>. The repair is then maintained with sutures. There currently exist several commercially available devices that assist approximation for nerve repairs.

The purpose of this presentation is to describe an innovative approximator that can be manufactured by any surgeon using readily available materials. While similar devices have previously been described using syringes<sup>2</sup>, the following description is novel.

### **Methodology**

Construction:

The device consists of three sterile hypodermic needles. One 18G (pink) bevelled drawing-up needle, and two 30G (yellow) needles. The 18G needle is passed through the hub of each 30G needle at ninety degrees (see images).

Use:

The 30G needles are passed through the epineurium or adjacent soft tissues of the prepared proximal and distal nerve stumps, the 30G hubs are then slid down the 18G needle shaft to bring the nerve ends together (see image). The device is discarded into the sharps disposal unit on completion of the case.

### **Findings=**

The device both immobilises and approximates the nerve ends, but also maintains alignment to facilitate an ideal repair. It can then be turned to enable suturing of the posterior part of the nerve. The sterile materials required are readily available in all operating theatres and assembly time is minimal. The cost of manufacturing this device at the time of writing is approximately AUD\$0.22, compared with significantly more expensive commercial devices. Additionally, there is no requirement for sterilisation or maintenance. Larger needles can conceivably be employed in tendon repair surgery.

### **Conclusion**

This innovative device enables accurate nerve approximation and alignment in the absence of a commercial approximator.

1. Griffin MF, et al. Peripheral nerve injury: Principles for repair and regeneration. *Open Orthop J*, 2014; 8: 199-203;
2. Bayramiçli M, et al. Nerve and tendon approximator. *The Journal of Hand Surgery*, 1997; 22(4): 743-754.

## Free thenar flap reconstruction of a high-pressure paint injection injury: a case report

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### Purpose

To highlight the free thenar flap as a functional option in the reconstruction of an extensive volar finger soft tissue defect caused by a high-pressure injection (HPI) injury.

### Case Report

A 53-year-old right-hand dominant male handyman sustained a HPI injury to his left middle finger with a water-based paint while working at home. He presented to our emergency department 48 hours later with increasing pain and swelling (see image). Two debridements resulted in a large volar soft tissue defect extending from the proximal interphalangeal joint crease up to and involving the fingertip (see image).

At day five post-injury, an ipsilateral free thenar flap was raised and anastomosed to the ulnar digital artery and dorsal vein to reconstruct the defect. The donor site was closed with a full thickness skin graft. After a smooth post-operative course he was discharged at day five. On outpatient review at three months, there was complete flap survival and the patient had returned to work with full range of motion in flexion and preserved fingertip sensation (see image).

### Discussion

Described Kamei in 1993, the free thenar flap is based on a consistent superficial palmar branch of the radial artery<sup>1</sup>. Since this time, it has been described in the reconstruction of a variety of volar hand defects<sup>2</sup>. High-pressure injection injuries are rare and potentially devastating injuries, often resulting in significant soft tissue loss post-debridement. Descriptions of free thenar flap reconstruction of HPI injuries are scarce in the literature.

### Conclusion

The free thenar flap is an excellent source of glabrous skin for the functional reconstruction of volar finger soft tissue defects following HPI injury.

1. Kamei K, et al. A new free thenar flap. *Plast Reconstr Surg*, 1993;92(7): 1380-1384.
2. Sassu P et al. Fourteen Cases of Free Thenar Flap: A Rare Indication in Digital Reconstruction. *Annals Plastic Surgery*, 2008; 60(3): 260-266.

## Versajet hydrosurgery as a useful tool in nasal reconstruction

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### Purpose

Attempts have been made to achieve better aesthetic, functional and efficient results following locoregional flaps in nasal reconstruction. The Versajet device (Smith & Nephew) is a handheld hydrosurgical tool, that delivers a high-speed jet stream of saline, to precisely debride tissues. It has been demonstrated to be a safe and effective tool in infected wounds, burns and ulcers (1, 2). We present the use of Versajet in debriding and contouring locoregional flaps in nasal reconstruction.

### Methodology

Over a 20-month period in a single hospital we reviewed consecutive cases that used the Versajet

device in the subsequent stages of their nasal reconstruction surgery for the preparation and sculpting of locoregional flaps.

## Results

There were 7 consecutive patients (3 males, 4 females) in whom we utilised Versajet. The majority (71%) of cases were for Basal cell carcinoma with an overall median age of 51 years. All nasal reconstructions used a paramedian forehead flap, that were divided and contoured 3 to 4 weeks later. There was 100% flap survival. A key benefit to using the Versajet device was the precise contouring of the flap to the defect, in a timely and safe manner (Figure 1). Of the 7 cases, one patient required a further revisional procedure.

## Conclusion

Our study further adds to the literature in the safe and effective use of the Versajet device in surgical debridement. However, we highlight its benefits in nasal reconstruction that can reduce theatre time, optimise clinical outcomes and reduce further subsequent procedures.

1. Granick, M. S., Posnett, J., Jacoby, BS, M., Noruthun, S., Ganchi, P. A., & Datiashvili, R. O. (2006). Efficacy and cost-effectiveness of a high-powered parallel waterjet for wound debridement. *Wound Repair and Regeneration*, 14(4), 394–397. <https://doi.org/10.1111/j.1743-6109.2006.00136.x>
2. Granick, M., Boykin, J., Gamelli, R., Schultz, G., & Tenenhaus, M. (2006). Toward a common language: surgical wound bed preparation and debridement. *Wound Repair and Regeneration: Official Publication of the Wound Healing Society [And] the European Tissue Repair Society*, 14 Suppl 1, S1-10. <https://doi.org/10.1111/j.1743-6109.2005.00096.x>

**id #1345**

## Phase 3 KEYNOTE-630 study of adjuvant pembrolizumab versus placebo in patients with high-risk locally advanced cutaneous squamous cell carcinoma

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**Purpose:** Almost 20% of patients with high-risk locally advanced (LA) cutaneous squamous cell carcinoma (cSCC) treated with standard-of-care surgical resection and adjuvant radiotherapy (RT) experience local disease recurrence within 5 years. The PD-1 inhibitors cemiplimab and pembrolizumab have recently shown antitumor activity and manageable safety in LA or metastatic cSCC. The randomized, double-blind, placebo controlled, phase 3 KEYNOTE-630 (NCT03833167) study will investigate adjuvant pembrolizumab in high-risk LA cSCC.

**Methodology:** Eligible patients have histologically confirmed LA cSCC with  $\geq 1$  high-risk feature, have undergone complete macroscopic resection of all known cSCC disease (with/without microscopic positive margins), and have completed adjuvant RT ( $\geq 45$  Gy). Patients must be disease free  $\leq 28$  days from randomization and have an ECOG performance status of 0/1. Patients are randomly allocated 1:1 to pembrolizumab 400 mg Q6W or placebo for  $\leq 9$  cycles (approximately 1 year), until disease recurrence, start of new anticancer treatment, unacceptable toxicity, or withdrawal. Randomization is stratified (yes vs no) by extracapsular extension, cortical bone invasion, and prior systemic therapy. The primary end point is recurrence-free survival per investigator review with biopsy confirmation. Secondary end points are OS, safety, and health-related quality of life. Imaging is performed Q12W until the end of year (EOY) 2, then every 6 months until EOY 5. AEs are monitored throughout the study and  $\leq 30$  days after treatment end (90 days for serious AEs) and graded per NCI CTCAE v4.0. Patient-reported outcomes are assessed on day 1 of cycles 1-3, then Q12W until EOY 2. Crossover from placebo to pembrolizumab ( $\leq 18$  cycles) is allowed if biopsy-proven disease recurrence occurs before EOY 5. Pembrolizumab retreatment ( $\leq 18$  cycles) is allowed if disease recurs  $> 6$  months after completion of 9 pembrolizumab cycles and before EOY 5. Enrollment of  $\sim 570$  patients is planned.

**Results:** N/A

**Conclusion:** Recruitment is ongoing in 20 countries.

id #1389

## Mucormycosis in burns: a systematic review

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Mucormycosis is a complex and rare fungal infection with a high mortality rate. It presents with scattered black/necrotic ulcers, white fungal elements, and progression of wounds despite seemingly adequate debridement. Diagnosis is confirmed on wound histology with culture, however diagnosis is often delayed and it is difficult to treat.

There is currently no comprehensive review of burns related mucormycosis infections within the literature, making this the first paper to provide evidence-based recommendations to treat this complex problem. We performed a systematic review of publications from 1946, and identified 151 cases of mucormycosis complicating burns. The mortality rate was 54.5%, and there was no significant change in survival over time. There was a significant increase in mortality with axial body site involvement compared with isolated peripheral involvement.

The standard treatment within the reported cases was prompt and radical surgical debridement. Utilisation of frozen section to guide debridement seemed to aid in clinical decision making around extent. No systemic treatment reached statistical significance, however IV amphotericin B trended towards significance. Although there is no strong evidence for topical amphotericin B or hyperbaric oxygen treatment, there may be benefit in some cases. In the absence of burns specific evidence, we recommend early and aggressive debridement in conjunction with the European Confederation of Medical Mycology guidelines of IV liposomal or lipid complex amphotericin B at  $> 5\text{mg/kg/day}$ , with posaconazole at 800mg daily in divided doses as a salvage therapy or oral step-down option<sup>1</sup>. Treatment should be directed by susceptibility data where possible.

1. Comely, O. A. et al. ESCMID† and ECMM‡ joint clinical guidelines for the diagnosis and management of mucormycosis 2013. *Clin. Microbiol. Infect.* 20, 5–26 (2014)



## Dermatofibrosarcoma protuberans arising in keloid scar – a rare case report

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Dermatofibrosarcoma protuberans (DFSP) is a rare cutaneous tumour, representing approximately 0.1% of cutaneous malignancies. They can be locally invasive and have a recurrence rate of up to 60%, but have low metastatic potential. We present a case of a 30-year-old female in Far North Queensland with a DFSP arising in a chronic keloid scar on her upper chest. The lesion was widely excised to pectoralis major muscle and reconstructed with a free parascapular flap. We also reviewed the available literature on this phenomenon, finding only two other reported cases of DFSP arising in keloid scar.

## Preserve the nerve – incorporating advanced technology to improve the safety and reliability of the bilateral sagittal split osteotomy in corrective mandibular surgery

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The bilateral sagittal split osteotomy (BSSO) is a common procedure used to correct deformities of the mandible. Since its inception in the 1950s, the BSSO has undergone many modifications and adjustments that were developed in order to improve the predictability of the bone split, as well as to reduce the complication of damage to the inferior alveolar nerve (IAN). Our method begins with pre-operative fine-slice CT to virtually plan the surgery, as well as to delineate precise course of the patients' mandibular canals as studies have shown these to be highly variable. Custom-made 3D-printed cutting guides and osteosynthesis plates are carefully designed to maximise surgical safety and efficiency, as well as to minimise human error. Predictive hole positioning adds to surgical efficiency and reliable results. Computer-aided design (CAD) and computer-aided manufacturing (CAM) technology are not new to the field of orthognathic surgery. However, we have reviewed other modifications to the BSSO published recently, and believe that this method we describe holds a uniquely reliable, advanced and safe place among them, achieving predictable splits whilst significantly reducing the risk of damage to the IAN. We anticipate that this and similar methods and technology will become gold standard in the future for these procedures. We do emphasise that surgical skill and knowledge must be maintained so that unexpected changes to the virtual plan can be dealt with in theatre.

## Epidemiological evaluation of Ledderhose Disease (Plantar Fibromatosis) In a cohort of patients with Dupuytren's Disease: A single center experience

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*3. Allied Health, Peninsula Health and Department of Physiotherapy, Faculty of Medicine, Nursing*

**Background:** There is limited and inconsistent description of the epidemiology of Ledderhose disease (LD).

**Objective/Aims:** Our primary aim was to evaluate the epidemiology of LD in a cohort of patient's with Dupuytren's disease (DD), the secondary aim was to assess if any associations existed between LD and patients' risk factors for LD.

**Method:** We conducted a cross sectional case study from May 2019 to May 2020 and data were collected from patients in a single DD clinic. There were 76 patients recruited

**Results:** In all cases examined, the prevalence of LD was 42% (n=32) with a high proportion of males (78%) with LD. There were no statistical significant differences in LD risk factors between patients with DD with or without LD (p>0.05). There were no potential LD predictors determined.

**Conclusion:** Our study found a higher prevalence of LD in patients with DD compared to what has been previously reported in the literature. Knowledge of epidemiology of LD in DD patients can aid accurate counselling of patients with LD and subsequently provide a base for aetiological studies.

id #1216

## Quality measures in cervical lymphadenectomy for cutaneous malignancy, eleven years of experience

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### *Background:*

Therapeutic lymphadenectomy remains the gold standard for surgical management of clinically evident regional cervical disease for cutaneous malignancy. However, international consensus on adequate lymphadenectomy is lacking. With attempts to establish quality measures, high volume centres have suggested benchmarks for minimum and average nodal yield, as well as recurrence and complication rates<sup>1</sup>. We aimed to compare our key performance indicators to those benchmarks published in the literature.

### *Methods:*

We conducted a retrospective observational study using prospectively maintained data, from a Waitemata District Health Board and the Melanoma Unit over an eleven year period (2007-2018). Data for Melanoma and Cutaneous Squamous Cell carcinoma (cSCC) were analysed separately.

### *Results:*

91 cervical lymphadenectomies performed for cutaneous malignancies were included. Mean nodal yield for  $\leq 3$  and  $\geq 4$  dissection levels were 19.7 and 38.7 nodes respectively. Overall combined local and regional recurrence rate of 25%, with subgroup analysis for melanoma group (60) and SCC group (28) revealing regional nodal recurrence of 15% and 11%, respectively. We observed a 38.5% complication rate; however less than 5.5% was considered grade IIIb/IIIb(d) [Clavien-Dindo]. Median follow-up of 19.3 months, 5 year survival rate of 38% for melanoma and 32% for cSCC .

### *Conclusion:*

Our centre provides head and neck oncological resection services to the largest District Health Board in the country. Our data indicates that we are meeting quality measures, as suggested by high volume centres<sup>1,2</sup>. We believe that any surgeon with subspecialty training in head and neck surgery can meet quality measures with regards to cervical lymphadenopathy for cutaneous malignancy.

1. Spillane AJ, Bernard LH, Cheung BM, Stretch JR, DP, Scolyer RA. Proposed quality standards for regional lymph node dissection in patients with Melanoma. *Annals of Surgery*, 2009. 249(3), 473-480.

2. Rossi CR, Mozzillo N, Maurichi A, Pasquali S, Quaglino P, Borgognoni L, et al. The number of excised lymph nodes is associated with survival of melanoma patients with lymph node metastasis. *Annals of Oncology*, 2014; 25, 240-246.

id #1406

## The deep inferior epigastric artery as an arterial interposition graft in the wrist

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*Introduction:* Ischaemia in the distal upper extremity causes severe pain and digital ulceration. These changes are seen in chronic conditions such as scleroderma but may be precipitated by trauma. We present the use of a deep inferior epigastric artery interposition graft for radial artery insufficiency. In this case existing vaso-occlusive changes from scleroderma were exacerbated by iatrogenic damage to the radial artery during fixation of a distal radius fracture.

*Case Report:* A 43-year-old female with a history of limited scleroderma and severe Raynaud's sustained a distal radius fracture 5 years earlier. Following volar plating she experienced severe pain and digital ulceration. This resulted in terminalisation of the middle fingertip and debridement of the index and thumb. Botox, iloprost infusion and attempted recanalisation provided only limited short term relief. Venous bypass had been attempted by the vascular team but had been unsuccessful. Following her deep inferior epigastric artery grafting she has improved perfusion, resolution of pain and healing of a chronic ulcer on her index finger. The plate was removed during the same operation which revealed that there had been iatrogenic injury to the radial artery during plating.

*Discussion:* Management of vascular insufficiency of the hand is challenging. Veins are considered inferior for grafting due to size mismatch, valves and being more difficult to handle. Arterial long term patency rates are superior. The deep inferior epigastric artery has predictable anatomy, provides on average 12cm of length and can be accessed with the patient supine. It creates minimal donor morbidity and is expendable.

*Conclusion:* Arteries provide a superior graft. The deep inferior epigastric artery is a reliable donor for arterial grafting. This case further illustrates its utility for the treatment of arterial insufficiency of the upper extremity.

id #1351

## The perils of Cansema

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### PURPOSE

To highlight the dangers associated with the use of a "natural" remedy for non-melanoma skin cancers

### CASE

3 patients have presented to clinic with locally advanced disease. Patients used a topical escharotic (Cansema or black salve) resulting in more locally advanced disease (and regionally advanced disease in 1 of these cases) leading to larger resection and reconstruction and therefore greater morbidity.

### DISCUSSION

Black salve is derived from the plant *Sanguinaria canadensis*, known colloquially as "blood root"<sup>1</sup>.

It is a strong escharotic paste which causes profound inflammation and eschar to tissues<sup>1,2</sup>. Given its lack of evidence as well as varied strengths as there is no regulated formula, this treatment is unpredictable and potentially dangerous. There are multiple case reports of cancer spread and death due to delayed diagnosis and inadequate treatment due to Cansema, and significant tissue damage leading to a poor cosmetic outcome (pictures 1 and 2) <sup>1,2</sup>.

The Therapeutic Goods Administration of Australia has banned sales of this product in Australia, however is available for purchase online<sup>2</sup>. In our institution, it appears that patients have easy access to this medication resulting in a larger treatment burden of the head and neck requiring more extensive surgery. In one of these cases, prior treatment with Cansema resulted “islands” of tumour which makes resection more difficult. Pathological opinion so far has identified dermal scar and extensive ulceration with suppurative inflammation and tissue necrosis.

Given this, it is concerning that patients still continue to use alternate therapies such as Cansema and there is a role for increased education for our patients.

1. Rosendahl, C. Science or Snake oil: what is black salve? Faculty of medicine, University of Queensland (2018). Accessed at <https://medicine.uq.edu.au/article/2018/05/science-or-snake-oil-what-black-salve>.
2. New Zealand Medicines and Medical Devices Safety Authority. Trans-Tasman Early Warning System – Alert Communication. Medsafe (2013). Accessed at <https://www.medsafe.govt.nz/safety/EWS/2013/black-salve.asp#:~:text=Black%20salve%20is%20an%20escharotic,also%20cause%20a%20disfiguring%20injury>

**id #1376**

## What's a free flap without an app?

**Caitlin O'Hare<sup>1</sup>, Shiv Chopra<sup>1</sup>, Corey Williams<sup>2</sup>, Law King<sup>2</sup>, Benjamin Chalmers<sup>1</sup>, Milap Rughani<sup>1</sup>**

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### **Purpose**

Free flap reconstruction is accepted as a gold standard in head and neck reconstruction.

Clinical audit is fundamental in healthcare systems to monitor patient outcomes, efficacy of intervention and evaluation of key performance indicators (KPI). Acquisition of accurate, relevant and real time data is key in this audit process. Globally innovation in smart devices and digital applications have transformed health informatics. However, in many hospitals there is a dichotomy between these global technological advances and collecting data for clinical audit purposes.

We present the development of a digital application that collects prospective data for the purposes of clinical audit and improving patient outcomes in Head and Neck Reconstruction.

### **Methodology**

We developed a customised digital application (Microsoft Power Apps, Office 365) compatible with android and apple platforms. The ‘app’ is integrated within our hospitals information technology network (Microsoft Sharepoint) and is secure, compliant and available for multiple users. Data is collected prospectively from time of operation and can be updated to include subsequent complications, disease pathology or further patients’ interventions (surgery, adjuvant therapy or mortality). This data can produce real time audit and KPI.

## Results

We have trialled the application within our hospital setting for the last six months and collected data on 60 free flaps. We have modified the software to incorporate clinical photographs, pathology reports and complications; this can be presented to a wider audience. We aim to extend this application to enable multiple sites access across Queensland Health Network.

## Conclusion

This technological innovation embraces accurate and relevant data acquisition in order to improve clinical audit and patient related outcomes for head and neck reconstructions.

id #1415

## Time to clinically meaningful changes in pain in patients with advanced cutaneous squamous cell carcinoma treated with cemiplimab in a Phase 2 clinical trial

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**Purpose:** Cemiplimab, a PD-1 inhibitor, is indicated for treatment of cutaneous squamous cell carcinoma (CSCC) in patients with metastatic (mCSCC) or locally advanced (laCSCC) disease not eligible for curative surgery/radiation. Cemiplimab resulted in RECIST objective response rate (complete+partial response) of 44.0%, median times to tumour response of 2.0 months and progression-free survival (PFS) of 18.4 months safety profile was consistent with other anti-PD-1 agents. Cemiplimab-treated patients achieved clinically meaningful (CM) pain reductions (measured using the patient-reported EORTC QLQ-C30 pain domain), which was further characterised by the relationship between time to a CM change in pain and tumour response.

**Methodology:** Adults (N=193) with confirmed diagnosis of invasive CSCC received IV cemiplimab 3 mg/kg Q2W (mCSCC n=59; laCSCC n=78) or 350 mg Q3W (mCSCC n=56). The QLQ-C30 was administered at baseline and day 1 of each treatment cycle. Kaplan–Meier survival analysis (with censoring at drop-out) was used to estimate time to 1<sup>st</sup> CM (≥10-point) reduction (improvement) or

increase (worsening) in QLQ-C30 pain scores. Pain medication use was captured over the treatment period.

**Results:** For pain score at 1<sup>st</sup> tumour response (cycle 2), the least squares mean change from baseline of responders ( $-13.8 \pm 1.7$ ;  $n=81$ ) differed from that of non-responders ( $-3.3 \pm 2.1$ ;  $n=71$ ) by  $-10.5$  (95% CI:  $-15.6$  to  $-5.3$ ;  $P<0.0001$ ); pain reduction was maintained at least through cycle 5 and was independent of opioid pain medication use. For responders, Kaplan–Meier estimated median time to 1<sup>st</sup> CM pain improvement (2.1 months;  $n=51$ ) and 1<sup>st</sup> CM pain worsening (14.8 months;  $n=77$ ) approximated median times to tumour response (2.0 months;  $n=85$ ) and PFS (18.4 months;  $n=193$ ), respectively.

**Conclusion:** In cemiplimab-treated CSCC patients, early pain reduction tracked with 1<sup>st</sup> tumour response and pain worsening with PFS. These results suggest that changes in pain may correlate with tumour response.

id #1247

## The safety of erythropoietin stimulating agents during active treatment of head and neck squamous cell carcinoma: a literature review

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Erythropoietin stimulating agents (ESAs) are commonly used adjuncts for the management of anaemia in select patient populations. Patients with head and neck squamous cell carcinoma (HNSCC) are particularly at risk of multi-factorial anaemia, with both local tumour and systemic effects contributing, which itself has been independently associated with poor prognosis and intrinsic resistance to adjunctive therapy.

In surgical patients with head and neck squamous cell carcinoma (HNSCC) undergoing curative intent therapy, the use of ESAs may be relatively contraindicated, with a significant trend towards increased locoregional failure and mortality demonstrated in several studies for patients undergoing primary radiotherapy. Several good quality randomised controlled trials have detected significant differences in rates of locoregional recurrence and overall survival, though data from surgical cohorts is lacking. In some studies, their use during curative-intent treatment was associated with a higher risk of death and locoregional recurrence than smoking.

The optimization of patient health pre-operatively includes the management of risk factors such as smoking and medications. Surgeons should be alert to the risks associated with the ongoing use of ESAs in patients receiving curative intent therapy prior to proceeding with surgery. These studies and the issuing of a black box warning by the FDA should alert clinicians to this risk. Despite a lack of research investigating surgical cohorts with HNSCC, the clear trend towards early locoregional failure and mortality amongst patients with advanced HNSCC receiving primary curative-intent radiotherapy on ESA therapy is suggestive of their contraindication.

## High-resolution pharyngeal manometry analysis identifies specific biomechanical patterns in patients with dysphagia following head and neck cancer treatment

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### Background:

Videofluoroscopy swallowing studies (VFSS) have identified features contributing to dysphagia in patients following head and neck cancer (HNC) treatment. High-resolution pharyngeal manometry (HRPM) is a novel technology that can reveal altered swallowing biomechanics. Accordingly, this study aimed to compare VFSS functional outcome measures with novel HRPM analysis of swallowing biomechanics in patients following multi-modal treatment for HNC.

### Methods:

Retrospective swallow data analysis was conducted in adults referred for simultaneous VFSS and HRPM studies, presenting with moderate-severe dysphagia following HNC treatment. Pharyngeal residue and aspiration status were quantified on VFSS using the Normalised Residue Rating Scale, Penetration-Aspiration Scale, and the Dynamic Imaging Grade of Swallowing Toxicity (DIGEST) grades. HRPM recordings were analysed using the online Swallow Gateway application and referenced to normative ranges. Spearman rank correlations determined the relationships between VFSS and HRPM continuous variables.

### Results:

Swallow studies were available for fourteen patients (13 male, mean age 63y, ranging 48-74y). Reduced pharyngeal pressures were evident in 57% (8/14) of patients, and 43% (6/14) presented with upper oesophageal sphincter (UOS) dysfunction. Only two patients presented with both abnormalities. Increased UOS relaxation pressure was associated with increased DIGEST Safety and Summary Grades ( $r=0.600$ ,  $p < 0.005$  and  $r=0.605$ ,  $p < 0.05$ , respectively). Reduced UOS opening was associated with increased DIGEST Safety Grades ( $r=-0.533$ ,  $p < 0.005$ ). Prolonged UOS relaxation time correlated with increased DIGEST Efficiency and Summary Grades ( $r=0.698$ ,  $p < 0.005$  and  $r=0.585$ ,  $p < 0.05$ , respectively). Abnormal pharyngeal contractility measures did not correlate significantly with any quantifiable VFSS outcomes.

### Conclusion:

Moderate-severe dysphagia in patients following multi-modality HNC treatment is associated with two distinct HRPM biomechanical patterns: reduced pharyngeal contractile pressures, and UOS dysfunction. Pharyngeal residue and aspiration observed on VFSS were associated with UOS dysfunction measures but not pharyngeal contractile pressures. This study illustrates that HRPM swallow analysis can enhance VFSS assessment.

## The use of expiratory muscle strength training (EMST) in the management of dysphagia and aspiration in the head and neck (H&N) cancer population – experiences from Prince of Wales Hospital.

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### Purpose

Treatment for H&N cancer requires a complex, multimodal approach to offer the best prospect of long-term cure. There can however be significant functional costs and dysphagia is a well-known and difficult to manage sequale of treatment (Nguyen et al 2005)

A 2019 feasibility study by the speech pathology department at POWH demonstrated the potential merit of EMST in the management of chronic dysphagia. This study aimed to continue to evaluate this treatment approach.

### Methodology

Patients were selected and consented for inclusion in the study during 2020. Baseline and post treatment measures were captured including severity of penetration aspiration (PAS), functional oral intake scores (FOIS), Dysphagia Outcome Severity Score (DOSS), maximum expiratory pressure (MEP) and a modified quality of life questionnaire (Swal-QOL).

Patients participated in an 8-week therapy programme using the EMST device under the guidance of a speech pathologist. Some aspects of the protocol were modified due to COVID 19.

### Results

20 patients commenced the programme although 2 did not complete the full 8 weeks. Results demonstrated improvement in several of the outcome measures collected including PAS, FOIS and quality of life scores.

### Conclusion

EMST appears to be a useful tool in addressing swallow safety in chronic dysphagia in the H&N neck cancer population. Severity and frequency of aspiration appear to be reduced although impact on swallow efficiency is unclear. It is easy to implement with a relatively low therapist/patient burden both in terms of time and complexity. Whilst early experiences are positive, there is an ongoing need for further larger studies to allow more robust evaluation of its efficacy.

## A collaborative approach to establishing speech pathology research in head and neck cancer: A model of organisational and academic support, research productivity and building research capacity at Prince of Wales

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### Purpose

It is well recognised that quality, transparent research should underpin all health related intervention (Barratt 2008). Despite this, there are significant gaps in both skills required and levels of confidence in undertaking research (Finch et al 2015). In 2010 the speech pathology department at Prince of Wales recognised the need to foster clinical research and with the support of the department of radiation oncology developed a longitudinal database to capture functional speech and swallowing outcomes for patients undergoing head and neck cancer treatment.



This study aims to evaluate this particular model of research, examining the experiences of those involved, difficulties and benefits encountered and the extent to which this approach can foster clinical research capacity.

#### Methodology

10 key stakeholders were identified as being essential for the establishment and use of the research database including those responsible for funding of the research position, academic links from the University of Queensland, clinicians and management. These stakeholders were consented to be involved in a semi-structured interview which explored the benefits, challenges and experiences of collaborating in this approach to research.

#### Results

Interviews were transcribed and using a qualitative content analysis approach were analysed to identify key themes of relevance. Several consistent themes emerge across the group as well as those more relevant to individuals including improving research profiles, meeting organisational KPIs, skill development, and achieving academic excellence.

#### Conclusion

Fiscal support, strong academic links and protected research time are key components in developing quality research in the workplace. Successful collaborations and support are essential when fostering a research culture and developing quality, evidence based interventions.

**id #1355**

## **Primary analysis of Phase 2 results for cemiplimab in patients (pts) with locally advanced basal cell carcinoma (laBCC) who progress on or are intolerant to hedgehog inhibitors (HHIs)**

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**Purpose:** There is no approved therapeutic option post-HHI for pts with laBCC. Cemiplimab, an antibody, is approved for treatment of advanced cutaneous squamous cell carcinoma (CSCC) in pts who are not candidates for curative surgery/radiation. Both BCC and CSCC are keratinocytic tumours with high tumour mutational burden (TMB) from ultraviolet mutagenesis and are potentially amenable to immunotherapy. We present the primary analysis of the laBCC cohort from the pivotal Phase 2 study of cemiplimab in the second-line (or greater) setting.

**Methodology:** Pts with laBCC received cemiplimab 350 mg Q3W IV ( $\leq 93$  weeks or until progression). The primary endpoint was objective response rate (ORR) by independent central review (ICR). Secondary objectives included safety and tolerability, duration of response (DOR), progression-free survival (PFS) and overall survival (OS). ORR included two responses confirmed after the data cut-off date of 17 February 2020.

**Results:** 84 pts were enrolled; 66.7% male; median age (range): 70 years (42–89); median follow-up: 15 months (range: 0.5–25). ORR per ICR was 31% (95% CI: 21–42), including five complete responses and 21 partial responses. Median DOR and median PFS/OS have not been reached. Per Kaplan–Meier, an estimated 85% of responses were ongoing at 12 months. Estimated PFS for all patients was 19 months. The most common adverse events (AEs) were fatigue (30%), diarrhoea (24%) and pruritus (21%); 17% of patients discontinued treatment due to AEs. Median baseline TMB was 58.2 and 23.5 mutations/Mb among responding (n=18) and non-responding (n=38) pts, respectively, but responses occurred at all TMB levels. Exploratory biomarker analysis identified downregulation of major histocompatibility complex-I expression as a potential immune evasion mechanism in non-responding BCCs with high TMB.

**Conclusion:** Cemiplimab is the first agent to establish clinical benefit for pts with laBCC who progress on or are intolerant to HHI therapy, regardless of biomarker status.

**id #1407**

## **Transoral robotic surgery as a single modality treatment for oropharyngeal squamous cell carcinoma**

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### **Purpose**

The advent of minimally invasive transoral robotic surgery (TORS) has changed the role of surgery in the multimodal approach to treatment of oropharyngeal squamous cell carcinoma (OPSCC). Current literature suggests that in early OPSCC, TORS and radiotherapy as single modalities have comparable oncological results. However, there is a relative paucity of research investigating differences in morbidity between these modalities.

### **Methodology**

A multi-centre retrospective cohort study of patients at two tertiary Head & Neck cancer centres. Patients with primary OPSCC, clinical stage of T1-2 and up to 1 clinical cervical metastatic lymph node (N0-1) that underwent TORS were included. All subjects underwent initial staging neck dissection where pathological staging was established based on the American Joint Committee on Cancer Cancer Staging (AJCC 8<sup>th</sup> Ed). Patients with pN0-1 cervical lymph node were treated definitively with TORS as a single-modality. Those with positive TORS margins or multiple LN's received adjunctive radiotherapy (PORT) or chemoradiotherapy (CRT). Patients were followed postoperatively for 25

months on average. Outcomes related to postoperative feeding, overall survival and recurrence free survival were studied.

## Results

Ninety-six patients were included in the study (N=96). Of these, 56 received single modality TORS (smTORS), 26 adjuvant PORT (aPORT), and 14 adjuvant CRT (aCRT). Both overall survival and recurrence free survival was 96% in the smTORS and aPORT groups, and 93% in the aCRT group. A pre-morbid (normal) diet was achieved postoperatively in 95% of smTORS and aPORT subjects, and 78% of aCRT subjects. One case within the aPORT group required a PEG tube for feeding (4%).

## Conclusion

TORS as a single modality treatment for selected primary OPSCC cases has shown excellent survival outcomes and may potentially yield improved functional outcomes in the short and long-term in comparison with multimodality treatment for these tumours.

id #1324

## Sentinel lymph node biopsy for squamous cell carcinoma of the lip: a review of current evidence

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**Background:** Sentinel lymph node biopsy (SLNB) is well-established in breast cancer and melanoma surgery for staging and prognostication. However, data supporting the use of SLNB for non-melanoma skin cancers is sparse. Squamous cell carcinoma (SCC) of the lip is the most common head and neck cancer, with a considerable reduction in survival for patients who have regional nodal metastases.

**History:** Neck dissection is generally not performed in the absence of clinically suspicious cervical nodes for lip SCC. Primary lymphatic drainage for the lower lip is to submental and submandibular nodes, which has been thought to be associated with technical difficulties in performing SLNB.

**Current Evidence:** Current literature does include a few small (<50 patient) prospective trials of SLNB for T1-T2 N0 lip SCC, with results generally indicating sentinel node identification in ≥80% patients, with 7-26% SLNB positive rate. False negative rates and complications were reported to be low. However, a systematic review<sup>1</sup> in 2014 concluded that current evidence was insufficient to justify elective treatment of the neck in clinically N0 lip SCC patients and that close observation is viable.

**Conclusion:** There is a small amount of emerging evidence which suggests considering SLNB for T1/T2 clinically node-negative lip SCC. Robust literature to support such a practice is currently lacking. However, it seems reasonable that SLNB may provide useful staging and prognostic information in such cases of lip SCC to better guide patient and clinician decision-making. Technical difficulties and resource availability may prove barriers to widespread implementation of the practice.

id #1333

## Staples versus sutures: which is superior for closure of scalp wounds?

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**Background:** Scalp wounds are a common presentation in the emergency department and for many different surgeons operating in the head and neck. Closure using sutures or staples has long presented a conundrum. While sutures are the standard of choice for most areas of the body, the scalp often lends itself to surgical staples. This literature review examines the evidence behind the relative merits of each technique.

**Literature Review:** Overall evidence in the area is lacking. Two prospective randomized studies

were identified. Ritchie (1989)<sup>1</sup> performed a prospective double-blind randomized trial with 200 emergency department patients with scalp wounds and found no difference in morbidity or wound infections between sutures and staples; however, staples were significantly faster, less painful and carried no risk of needle-stick injury and hence were preferred. In the paediatric population (n=88), similar results were found by Kanegaye and colleagues (1997)<sup>2</sup>, with staples the significantly faster and less expensive option over suturing in their prospective randomized study. A recent survey of American Mohs' surgeons (Neill et al. 2020<sup>3</sup>) found staples were more commonly used on the scalp due to preferable speed of closure, and equivalent complications, cosmesis and patient satisfaction to sutures. Whilst preservation of hair follicle units is another purported anecdotal benefit of staples, no research has yet been done to support this claim.

**Conclusion:** The limited available evidence supports the use of staples for scalp wounds, given their greater speed and cost efficiency over traditional sutures, with equivalent healing rates, infection and cosmesis. Their relative effect on hair follicle preservation remains uncertain and a topic for further research.

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id #1372

## A review of burn presentations to Waikato Regional Burns Centre

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### Introduction

Burn injuries can have a significant and lifelong impact on not only patient, but also their family and friends. Many burn injuries are preventable.

Waikato Hospital is one of the four regional burn units in New Zealand and includes a wider catchment area than the Waikato District Health Board region. It also services the surrounding district health boards of Bay of Plenty, Lakes, Tairāwhiti and Taranaki, which is more than 900,000 people (Census 2018). The Waikato region has a higher proportion of people that identify as New Zealand Maori when compared to the total population of New Zealand.

### Objectives

The aim of our study was to determine whether there was a disproportionate number of NZ Maori patients presenting with acute burn injuries to the burn unit at Waikato Hospital in order to determine a target population for intervention.

### Method

We conducted a retrospective study of acute burn presentations to Waikato Hospital from December 2012 to January 2021 entered into the ANZBA registry. Repeat presentations were excluded from the analysis.

## Results

In total, there were 1060 acute burn presentations to the Regional Burns Unit at Waikato Hospital from December 2012 to January 2021. 39.6% of acute burn patients identified as New Zealand Maori and of the 0-4 year age group, 48.8% are NZ Maori. The cause of burn injuries in 0 to 4 year olds was similar in NZ Maori patients compared to the total population.

## Conclusions

There is a disproportionate number of NZ Maori patients presenting to Waikato Hospital Regional Burns Unit when compared to the NZ Maori population. This inequality is the most concerning in the 0 to 4 year old group. The results of this study has allowed us to identify a population in which we can aim to target with interventions to reduce acute burn injuries.

id #1364

## Computed tomography (CT) - defined sarcopenia assessment in patients with head and neck cancer who are overweight or obese: A comparison of two methods

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### Purpose

CT-defined sarcopenia, or low skeletal muscle mass, assessed using the cross-sectional area (CSA) at the third lumbar vertebra (L3), is the gold standard in body composition analysis and an independent prognostic indicator in head and neck cancer (HNC). Body mass index (BMI) is often used as a nutritional marker, however this measure does not indicate proportions of lean mass, and sarcopenic obesity (obesity with depleted muscle) can go undiagnosed. This study compared two methods of sarcopenia assessment in patients with HNC who are overweight or obese.

### Methodology

All patients presenting to the head and neck clinic until December 2020 with newly diagnosed HNC of the larynx, hypopharynx, nasopharynx, oropharynx or oral cavity, with a BMI>25 who had a diagnostic positron emission tomography-computed tomography (PET-CT) scan were included. CSA of muscle was measured at L3 and the third cervical vertebra (C3) and converted to an estimated L3 value (described by Swartz et al. 2016). Agreement between methods was assessed by the Bland-Altman method. Sarcopenia was determined based on pre-defined, sex-specific thresholds for skeletal muscle index and compared in each group.

### Results

Scans of 59 patients were analysed, of which 26(44%) had a BMI  $\geq$ 30 (92% male, 76% oropharynx, median age 59yrs). Good correlation was observed between L3 and estimated C3 CSA ( $r=0.78$ ,  $p<0.001$ ). Mean difference (bias) =12.0cm<sup>2</sup>, (SD=20.4, 95%CI 6.7-17.3) with limits of agreement exceeding clinical acceptability (-27.9-40.9cm<sup>2</sup>), indicating poor agreement between methods. Sarcopenia was diagnosed in 19% of the L3 group and 39% in the C3 group (sensitivity 72.7%, specificity 68.8%). There was weak agreement in sarcopenia diagnosis ( $k=0.292$ , 95%CI 0.1-0.5).

## Conclusion

The level of agreement between the C3 estimate and actual L3 measures of skeletal muscle in this cohort is weak. The subsequent diagnosis of sarcopenia may be substantially inaccurate and requires further validation in larger populations.

id #1417

## Aggressive histological subtypes of BCC have higher rates of incomplete excision on the head and neck

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**Purpose:** Non-melanoma skin cancer (NMSC) are the most common cancers in Australia and worldwide, occurring predominantly on sun exposed areas of the head and neck. Of these, basal cell carcinoma (BCC) is most common (1). Surgical excision remains the mainstay of treatment, however the challenges of maintaining function and cosmesis without tissue surplus are particularly vital in the head and neck. The rates of incomplete excision are known to vary between low and high-risk histological subtypes (2). Our aim is to reduce the rates of incomplete excision by analysing the associated risk factors.

**Methodology:** A review was undertaken of patients undergoing surgical excision of a head and neck BCC between 2015-2020 at the Plastic and Reconstructive Surgery Unit of the Royal Hobart Hospital, Tasmania, Australia. This study was approved by the Human Research Ethics Committee of Tasmania (H0018554)

**Results:** During the study period, 1009 BCC were excised from the head and neck. Of these, 9.8% were incompletely excised. When compared to nodular, infiltrative (OR: 2.44, p 0.005), sclerosing (morphoeic) (OR: 3.07, p <0.001), micronodular (OR: 3.9, p <0.001), and basosquamous (OR: 6.7, p <0.002) were all significantly more likely to be incompletely excised.

**Conclusion:** High-risk histological subtypes of BCC are more likely to be incompletely excised than low risk lesions, and as such, great care should be taken when excising high-risk lesions.

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id #1420

## Does the histological differentiation of head and neck cutaneous SCC affect rates of incomplete excision?

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**Purpose:** Non-melanoma skin cancer (NMSC) are the most common cancers in Australia and worldwide, occurring predominantly on sun exposed areas of the head and neck. Squamous cell carcinoma (SCC) is second most common NMSC after basal cell carcinoma, however SCC behaves more aggressively, and is more likely to metastasise to locoregional lymph nodes or distant sites (1). Surgical excision remains the mainstay of treatment, however the challenges of maintaining function and cosmesis without tissue surplus are particularly vital in the head and neck. Our aim is to reduce the rates of incomplete excision by analysing the associated risk factors.

*Methodology:* A review was undertaken of patients undergoing surgical excision of a cutaneous head and neck SCC between 2015-2020 at the Plastic and Reconstructive Surgery Unit of the Royal Hobart Hospital, Tasmania, Australia. This study was approved by the Human Research Ethics Committee of Tasmania (H0018554)

*Results:* 435 cutaneous SCC were excised during the study period. 221 (51%) were moderately differentiated, 118 (27%) well differentiated and 96 (22%) poorly differentiated. When compared with well differentiated SCC, moderately differentiated (OR: 3.26 p 0.01) and poorly differentiated (OR: 5.47, p 0.001) were more likely to be excised incompletely.

*Conclusion:* Our study has demonstrated that cutaneous SCC, arising on the head and neck, with moderate or poor histological differentiation are more likely to be incompletely excised than well differentiated.

1. Alam M, Ratner D. Cutaneous squamous-cell carcinoma. *N Engl J Med.* 2001;344(13):975-83.
2. Tan P-Y, Ek E, Su S, Giorlando F & Dieu T, 2007. 'Incomplete Excision of Squamous Cell Carcinoma of the Skin: A Prospective Observational Study'. *PRS* 120(4): 910-916.

**id #1421**

## **Factors contributing to the incomplete excision of BCC on the head and neck**

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Non-melanoma skin cancers (NMSC), particularly basal cell carcinoma (BCC) are the most common cancers, where they are associated with significantly increased morbidity and mortality. The mainstay of treatment for BCCs is surgical excision, with clear published guidelines for advised margins. Clear margins have been shown to result in complete removal of the tumour and a reduction in recurrence rates. Despite this, there is clear evidence that approximately 30-40% of NMSC excisions result in close or involved margins, however the reasons for this remain unelucidated.

We undertook a retrospective analysis of head and neck BCC excisions at single plastic surgery unit in a tertiary public hospital in Australia to investigate the rates of close or involved margins and any associated factors. Specifically, we examined factors including histological subtype, anatomical location on the head and neck, lesion diameter and depth, and the presence of perineural invasion or lymphovascular invasion. This study was approved by the Human Research Ethics Committee of Tasmania (H0018554)

The rate of incomplete or close excision was greater with more invasive subtypes of BCC such as infiltrating (OR = 2.91, p = 0.0008) and sclerosing (OR = 3.65, p <0.0001) as well as those occurring on the external ear (OR = 3.00, p = 0.0001). This data supports the published literature. Additionally, increased lesion diameter (p <0.001) and lesion depth (p <0.001) are strongly associated with higher incomplete excision rates in BCCs. To our knowledge, this has not previously been reported.

In conclusion, BCCs with more aggressive histological subtypes were more likely to be incompletely excised, as were those located on the external ear and with greater diameter and depth. These findings could potentially advise margin guidelines for head and neck BCC excision.

1. Alam M, Ratner D. Cutaneous squamous-cell carcinoma. *N Engl J Med.* 2001;344(13):975-83.



## An alternative therapy on the rise: colloidal silver and its implications for skin cancer treatment

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*1. Sunshine Coast University Hospital, Birtinya, Sunshine Coast, QLD*

The use of silver in medicine can be traced back thousands of years, featuring in different forms and preparations for many indications throughout history. Long recognised for its anti-microbial properties, modern use of silver is now most commonly seen impregnated into dressings, particularly used in chronic wounds and thermal burns. In recent years colloidal silver has increased in popularity as a 'natural' remedy, being readily available online, in alternative health stores and even self-made at home. Its advocates preach unsubstantiated claims in regard to its efficacy and overestimate the scope of its ability in treating a wide range of serious conditions from HIV to metastatic cancer, without warning users of the possible side effects. Argyria is a benign, permanent condition associated with ingestion or topical application of silver-containing compounds which results in deposition of silver throughout all body tissues and blue-grey discoloration of the skin. A 66-year-old gentleman was referred to the plastic and reconstructive clinic regarding a fungating 3.5 x 4cm lesion of his left supra-orbital region which he had been self-treating with daily ingestion of colloidal silver for more than a decade. Due to this prolonged and heavy consumption he demonstrated marked clinical features of argyria which posed unique challenges for his anaesthetic options, reconstruction planning and adjunctive cancer treatments. This presentation will discuss a brief history, clinical features and implications of argyria with associated clinical and histopathological images and review the recommendations based on current literature for treating skin cancer in patients with argyria.

## Benign subcutaneous emphysema of the upper limb: A case report and literature review

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*2. Orthopaedic Surgery, Northern Beaches Hospital, Sydney, NSW, Australia*

Subcutaneous emphysema is usually considered to be a surgical emergency and should be considered gas gangrene or necrotising fasciitis until proven otherwise. In rare circumstances, however, patients may present with benign subcutaneous emphysema, which is non-infectious, self-limiting and does not require surgery.

Benign subcutaneous emphysema of the upper limb is a rare entity that has been reported less than 20 times in the English literature. First, we present the current literature on benign subcutaneous emphysema. Most presentations have been attributed to a laceration over the olecranon that act as a ball-valve mechanism, pushing air into the soft tissue when the patient moves their elbow.(1) Other reported causes include blunt trauma, insect bite, air rifle shooting, iatrogenic from intravenous cannulation and elbow arthroscopy and accidental puncture with a pneumatic tyre pump. (2-7)

Second, we present the case of a 51 year old man who presented with a right elbow laceration from a hedge trimmer and rapidly increasing swelling to his upper limb. He had subcutaneous emphysema of his volar compartment of arm extending to shoulder, as well as of his dorsal compartment of his forearm, extending to the dorsum of his hand. He was initially managed conservatively with intravenous antibiotics and elevation. The day after he presented, he had an MRI which was reported as necrotising fasciitis with widespread soft tissue gas. He underwent surgical exploration which showed gas bubbles in the fascia but no signs of infection and healthy muscle. Our case illustrates



the diagnostic dilemma associated with benign subcutaneous emphysema of the upper limb. It is also the first case to show MRI findings associated with benign subcutaneous emphysema.

1. De M, Stevenson J. Subcutaneous emphysema of upper limb. *Emergency Medicine Journal* 2001;18:522.
2. Hamed EA. Upper Limb Emphysema: Noninfectious Background. *Journal of Clinical Trials*. 2019;9(6):1000387
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4. Looi C, Arumugam M. A case of acute compartment syndrome of the hand complicating subcutaneous emphysema due to accidental nitrogen gas insufflation. *Journal of Orthopaedics, Trauma and Rehabilitation*. 2019;27(1):81-4
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6. Onwochei VE, Kelly ME, Lyons R, Khan W, Barry KM. Benign subcutaneous emphysema: A case report with bite. *International Journal of Surgery Case Reports* 2015;9:89-91
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**id #1353**

## **Pilomatrix carcinoma: An increasingly reported rare tumour. A case report and review of the literature**

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*1. Plastic and Reconstructive Surgery, Northern Beaches Hospital, Sydney, NSW, Australia*

*2. Anatomical Pathology, Northern Beaches Hospital, Sydney, NSW, Australia*

Pilomatrix carcinoma, the malignant variant of the common pilomatrixoma, is a rare, locally aggressive tumour. It typically presents as an asymptomatic firm nodule, most commonly in the head and neck region. Patients are most often older Caucasian males in their 6<sup>th</sup> and 7<sup>th</sup> decades. Pilomatrix carcinoma is so rare that to date less than 150 cases have been reported in the English literature.(1, 2) Indeed, in their 2017 systematic literature review, which examined reports published between 2004 and 2017, Jones et al. identified case information for only 22 patients.(3)

First, we present a case of a 69 year old man from a nursing home who presented to our emergency department with a fast growing, mobile exophytic mass on the side of his neck. A punch biopsy of the lesion was reported as basal cell carcinoma. However, following wide local excision, the lesion was identified as a pilomatrix carcinoma.

Second, adding to the findings of Jones et al., we conduct our own updated literature review. We searched PubMed and Embase databases for literature on "pilomatrix carcinoma" published between 2016 and 2021. Publications included by Jones et al. were excluded, as were animal studies. We identified 22 new cases published in the past five years, suggesting an increase in either the incidence or recognition of this rare tumour.

1. Bremnes RM, Kvamme JM, Stalsberg H, Jacobsen EA. Pilomatrix carcinoma with multiple metastases: report of a case and review of the literature *Eur J Cancer*. 1999;35:433-7.
2. Cornejo KM, Deng A. Pilomatrix carcinoma: a case report and review of the literature *Am J Dermatopathol*. 2013;35:389-94.
3. Jones C, Tsoon M, Ho W, Portelli M, Robertson BF, Anderson W. Pilomatrix carcinoma: 12-year experience and review of the literature. *J Cutan Pathol*. 2018;45(1):33-8.

# Notes

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# Exhibitor List

1

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2

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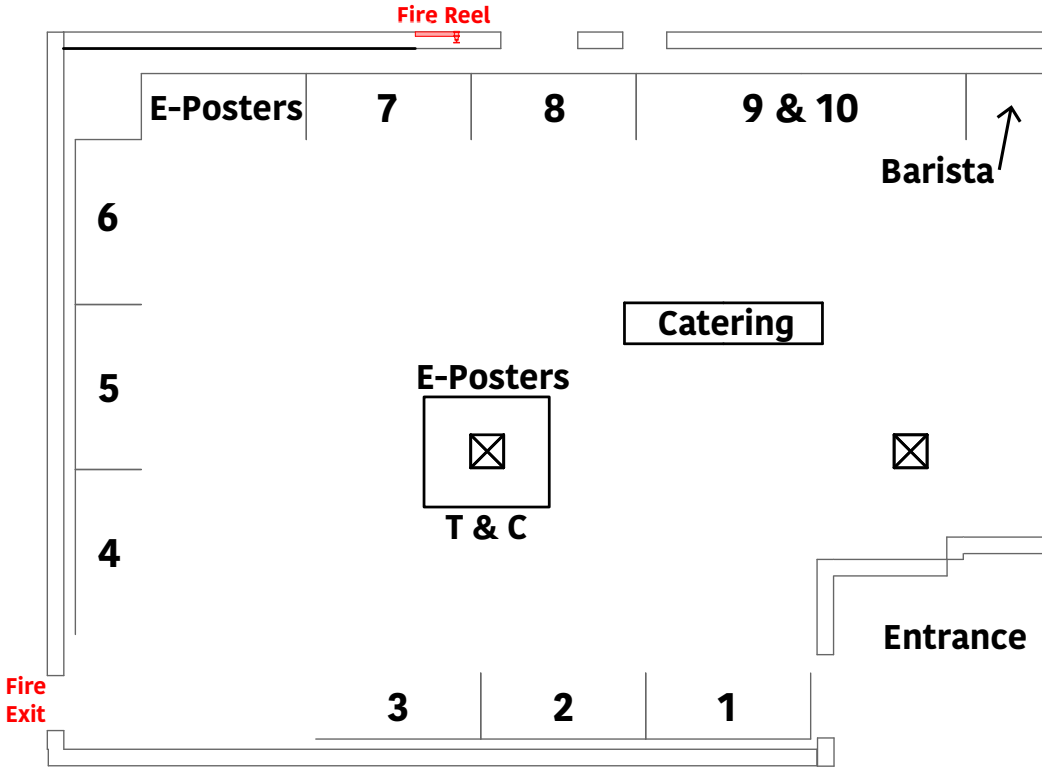
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18

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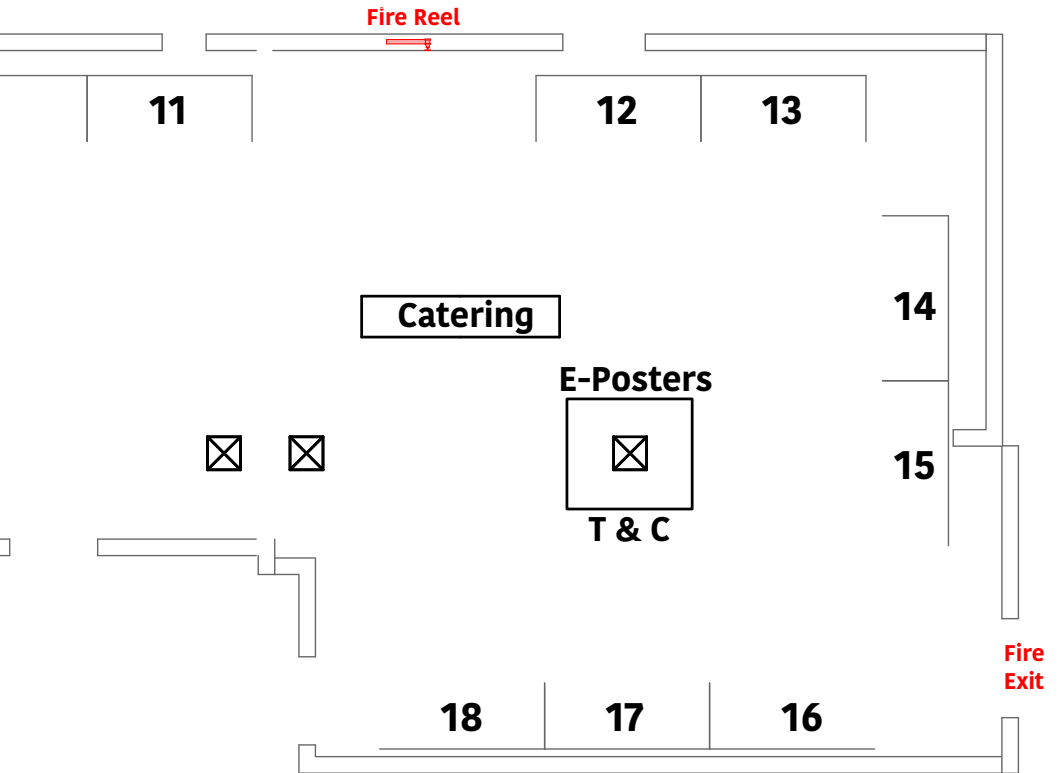
The Trade Exhibition Floorplan can be viewed on the following page

# Exhibitor Floorplan



## KEY

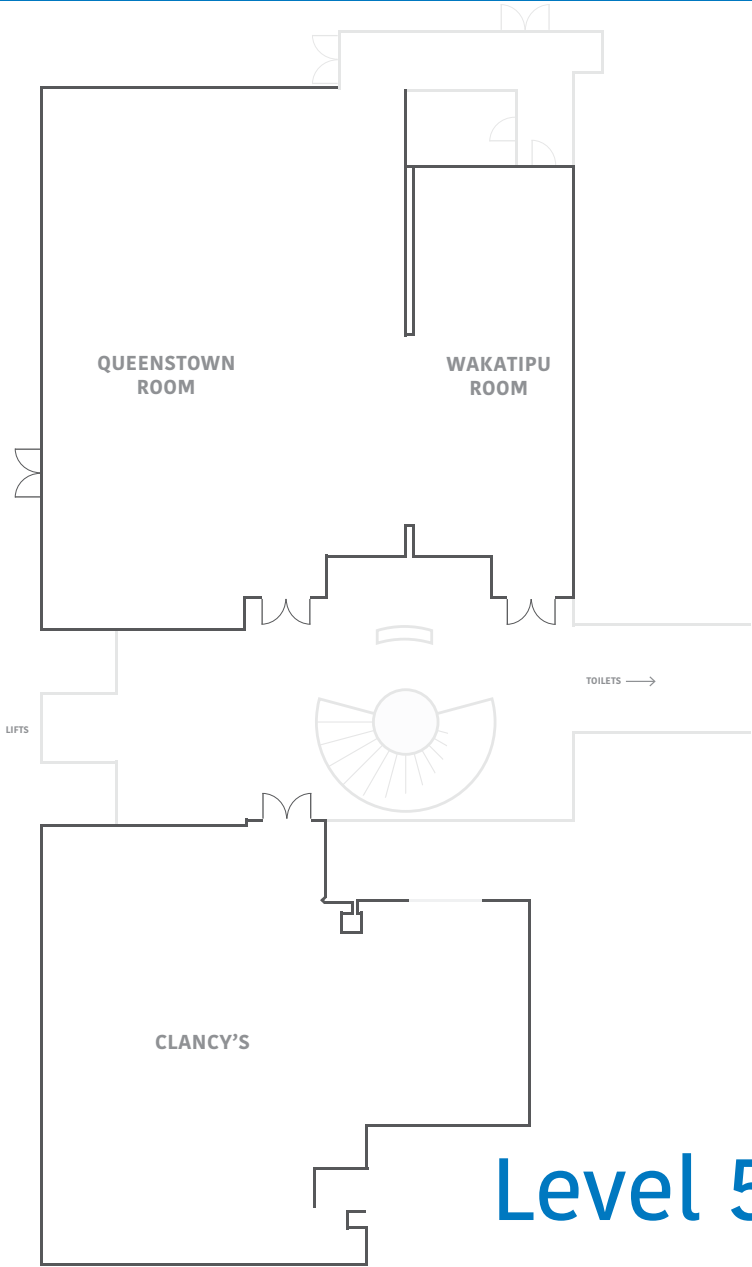
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| 1 | Medartis            | 6    | LifeHealthcare      |
| 2 | RACS                | 7    | Ostralos            |
| 3 | Stryker             | 8    | Atos Medical        |
| 4 | Device Technologies | 9&10 | Merck Sharp & Dohme |
| 5 | InterMed Medical    |      |                     |



- 11 Sheffmed
- 12 Medtronic
- 13 NZAPS
- 14 Integra
- 15 Surgical Innovations

- 16 Capes Medical
- 17 Johnson & Johnson
- 18 Carl Zeiss (NZ) Ltd

# Plenary Room Floorplan



**Level 5**