Agenda

06 November 2024

9:00 am - 5:00 pm
PLEASE REFER TO THE WORKSHOP TAB FOR THE ANZSCTS ROBOTICS PROGRAM (TICKETED EVENT)

Scientific Session - Default

07 November 2024

8:00 am - 5:00 pm
PLEASE REFER TO THE WORKSHOP TAB FOR THE NURSES AND ALLIED HEALTH DAY PROGRAM (TICKETED EVENT)

Scientific Session - Default

8:00 am - 5:00 pm
PLEASE REFER TO THE WORKSHOP TAB FOR THE TRAINEES DAY PROGRAM (TICKETED EVENT)

Scientific Session - Default

07 November 2024

1:00 pm - 2:00 pm
WOMEN IN CARDIOTHORACIC SURGERY LUNCH AND AVANT WOMEN IN CARDIOTHORACIC SURGERY GRANT 2024

Workshop - Default - Laguna 1

07 November 2024

5:30 pm - 7:30 pm
WELCOME RECEPTION (TICKETED EVENT)

Cocktail - Default - Poolside

08 November 2024

7:10 am - 8:10 am
MEDTRONIC MASTERCLASS: FUTURE PROOFING AORTIC VALVE SURGERY: A MASTERCLASS FOR THE NEXT ERA OF CARDIAC SURGERY

Scientific Session - Default - Ballroom 3 - Ballroom 2 - Ballroom 1

Proudly sponsored by Medtronic

7:10 am
Introduction
David Andrews

7:15 am
Innovative aortic valve replacement: Assessing lateral access techniques and real-world insights from the ACE registry
Tom Verbelen

7:25 am
7-Year follow-up of >1100 patients who received a contemporary pericardial aortic bioprosthesis
Robert Klautz

7:40 am
Advancing aortic valve surgery: Enhancing EOA with Avalus Ultra™ and new minimally invasive aortic valve techniques
Pieter Kappetein

7:55 am
Discussion

8:05 am
Closing remarks
David Andrews

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08 November 2024

8:30 am - 10:00 am
SESSION 1 - GENERATION NEXT: SURGEONS OF THE FUTURE

Scientific Session - Default - Ballroom 3 - Ballroom 2 - Ballroom 1

8:30 am
President's and Convenors' Welcome
Emily Granger

8:35 am
The future heart transplant surgeon: skillset and the "tools" you need?
Amy Fiedler

8:45 am
TAVR and the cardiac surgeon: beyond the OR and into the Cath lab?
Kendra Grubb

9:00 am
Coronary artery surgery 2024 - what surgeons should be doing
Anson Cheung

9:15 am
The future of thoracic surgery the global perspective
Paula Ugalde Figueroa

9:30 am
Robotics and innovation in thoracic surgery
Yin-Kai Chao

9:45 am
Discussion

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08 November 2024

10:00 am - 10:25 am
MORNING TEA WITH INDUSTRY

Catering - Default - Laguna Lilypond Terrace

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08 November 2024

10:25 am - 12:00 pm
SESSION 2 - PATRICK PRITZWALD-STEGMANN YOUNG ACHIEVERS PRESENTATIONS (AWARD)

Scientific Session - Default - Ballroom 3 - Ballroom 2 - Ballroom 1

10:25 am
Healthy Hearts in Oceania: How Medtronic supports awareness, screening and treatment of Cardiovascular Disease
Meredith Wank

10:30 am
Medium term survival outcomes in patients with positive surgical margins after surgery for early non small cell lung cancer (NSCLC)
Sally Harrison
Purpose The aim of this study was to determine if there was a difference between medium term survival outcomes (up to 5 years postoperatively) for patients who had positive surgical margins versus those who had negative margins after undergoing curative resection for early non small cell lung cancer (NSCLC). Methodology Data was obtained from a prospective thoracic surgery database for all patients who underwent curative NSCLC surgery at Sir Charles Gairdner Hospital (SCGH) between January 2009 and September 2019. Demographic data including age, gender, type of surgical procedure performed, histology (surgical margins and visceral pleural invasion) and pathological TNM staging was obtained from the hospital clinical patient management system. The follow-up period was 5 years post surgery. Patients with preoperative staging of greater than IIIA were excluded from the study. Kaplan-Meier and log rank survival analysis were used to compare survival outcomes between patients who had positive margins and those who had negative margins. Results During the study period, 475 patients underwent lung resection at SCGH for preoperative early stage NSCLC (stage I- IIIA). 261 patients (55%) were male, with 372 patients (78.4%) greater than 60 years of age. The predominant postoperative histology was adenocarcinoma (305 patients; 64.2%), followed by squamous cell carcinoma (127 patients, 26.7%). 33 patients (6.9%) had positive surgical margins and 149 patients (31.4%) had some degree of visceral pleural invasion (P1-3). There was a statistically significant difference in survival from 1 year to 5 year postoperatively between those with negative margins and those with positive margins. Conclusion Patients with positive surgical margins after curative surgery for NSCLC had a survival disadvantage up to five years postoperatively compared to

patients who had negative margins.

10:45 am
The Australia-New Zealand HOPE: A multi-centre study assessing donor heart preservation
Sam Emmanuel
Purpose: Hypothermic Oxygenated Perfusion (HOPE) has been in use within the Australia-New Zealand (ANZ) region since March 2021. This technology has drastically changed the approach to donor heart preservation for prolonged periods in a geographically disperse region. Traditionally, prolonged ischaemic time (particularly more than 4 hours) has been a key limitation in heart transplantation, resulting in increased primary graft failure and post-operative mechanical circulatory support use. This study is a collaborative multi-centre review of outcomes utilising the HOPE technology across ANZ transplant centres. Methods: Data was obtained from the four adult cardiac transplant centres across ANZ utilising the XVIVO HOPE system (St Vincent's Hospital Sydney, The Alfred Hospital, Auckland City Hospital, Fiona Stanley Hospital). The period of data collection covered March 2021 – July 2024. Results: 83 patients received a heart preserved by the XVIVO HOPE system. 63 patients were male (76%) and 20 patients were female (24%). Median recipient age was 53 years (IQR 44-61). Median heart preservation time was 354 minutes (IQR 299-417). Median XVIVO HOPE time was 254 minutes (IQR 194-326). 71 patients (86%) were successfully weaned from cardiopulmonary bypass, with 12 patients (14%) requiring temporary mechanical support. Median ICU length of stay was 6 days (IQR 14-51). Median post-operative length of stay was 23 days (IQR 14-51). 5 patients (6%) died within 30 days of their transplant. Conclusion: The early experience using HOPE technology has been encouraging in the ANZ region. Despite a median preservation time of almost 6 hours, 30-day mortality was only 6% and the need for post-operative temporary mechanical circulatory support was 14%. The ANZ regional experience will likely have practice changing implications for cardiac preservation, particularly in geographically vast regions and cases with unexpected prolongation of donor preservation time.

11:00 am
30 Day Outcomes of Indigenous Australians undergoing Mitral Valve Replacement
Robert Grant

11:15 am
The Role of Delayed Aortic Surgery in Type A Aortic Dissection and Mesenteric Ischemia: A systematic review and meta-analysis
Aditya Eranki
Purpose: Approximately one third of patients with Acute Type A Aortic Dissection (ATAAD) present with pre-operative malperfusion syndromes (MPS). Of these, mesenteric malperfusion represents the greatest risk to patients with a short-term mortality. In select patients, it may be feasible to offer a staged approach by treating the mesenteric malperfusion first, optimizing the patient in the intensive care setting and then, following with a central aortic repair. Methodology: An electronic literature search of five databases was performed to identify all relevant studies providing studies providing short-term mortality on patients who underwent either endovascular or open revascularisation of mesenteric ischemia prior to central aortic repair. The primary outcome was all cause short-term mortality. Secondary outcomes were comparative mortality between a delayed repair vs aortic repair first strategy, rates of postoperative laparotomy or bowel resection and mortality following delayed aortic repair. Results: The search strategy identified 8 studies qualifying for inclusion, with a total of 180 patients who underwent delayed aortic surgery in the setting of mesenteric MPS. The weighted short-term mortality following a mesenteric revascularisation first, delayed aortic surgery strategy was 22.5%. This strategy was also associated with a significantly lower mortality than a central repair first strategy (OR 0.07, 95% CI 0.02 – 0.27), significantly lower rate of postoperative laparotomy/bowel resection (OR 0.05, 95%CI 0.02 – 0.14). If patients survive to receive central repair, the weighted short-term mortality postoperatively is low (2.1%) Conclusion A summary of this evidence reveals a lower short-term mortality in hemodynamically stable patients with mesenteric malperfusion, along with a reduction in postoperative laparotomy/bowel resections. Further high-quality studies with randomized or propensity matched data are required to verify these results.

11:30 am
Outcomes of Branch first aortic arch replacement over a decade
Nikhil Chandra
Purpose: To evaluate outcomes of branch first aortic arch replacement (BFAAR) in patients undergoing emergency or elective surgery aortic pathology. This technique avoids total body circulatory arrest and profound hypothermia. Methods: Single surgeon series of BFAAR from December 2014 to December 2023 at a cardiothoracic unit in Wellington, NZ. First four years a total of 62 patients underwent BFAAR in the unit with one surgeon performing 49 of those. Next 5 years 84 cases with one surgeon performing 35 of those.

Highlights the safety and reproducibility of the technique as it was widely adopted in the unit. Each case is performed in an identical manner with central or peripheral cardiopulmonary bypass with sequential debranching of arch vessels from innominate artery to the left subclavian artery using a modified trifurcation dacron graft with a side arm which is used for antegrade cerebral perfusion (ACP). During debranching, perfusion to the heart and distal organs is maintained. Once the proximal and distal aortic anastomosis is completed, the common stem of the trifurcation graft is anastomosed to the neo ascending aorta. Mean age was 61.9. Fourty five cases (53.6%) were acute and the remaining cases were performed for enlarging aneurysms or for chronic type B dissections that required debranching for safe TEVAR landing zone. Fifteen patients (17.8%) underwent a redo operation. Results: There were six mortalities (7.1%), all in the emergency group. Two patients (2.3%) had a post operative stroke. Six patients (7.1%) returned to theatre for bleeding, wound closure or pleural wash out. One patient (1.1%) required an intra-aortic balloon pump and six patients (7.1%) required haemo-filtration for renal support. Conclusion: BFAAR enables us to treat the full extent of the diseased aorta with results comparable to traditional techniques and elective surgery. We are comparing our results with standard techniques in the unit.

11:45 am
A Simple Approach to Mitral Annulus Calcification
Lucy Manuel
Purpose: Mitral Annular Calcification (MAC) remains a challenging anatomical and hazardous barrier in mitral valve surgery with increased periprocedural morbidity and mortality. It is a degenerative process that commonly affects elderly patients with myxomatous disease and favours the posterior annulus. While several techniques exist to circumvent this issue- including complete MAC resection or placing the valve at an angle in the atrium- they are complex and technically difficult with risks including atrioventricular disruption, circumflex artery injury, paravalvular regurgitation, valve dehiscence, and thromboembolism. Methodology: We describe our experience in 30 patients who have undergone our original simplified technique. The technique involves leaving the MAC untouched, plicating the posterior leaflet up to the MAC and inserting the valve at the usual annular level while covering the calcification with a pericardial collar secured to the valve prosthesis that is then sutured to the atrium several centimetres from the prosthesis sewing ring. This prevents paravalvular regurgitation caused by small tears where the posterior leaflet was plicated. Results: Thirty patients underwent this reproducible pericardial collar technique between 2003-2024. There were two early deaths- one due to MRSA prosthetic endocarditis resulting in multiorgan failure, and another due to pre-existing liver failure. There were no paravalvular leaks demonstrated on intraoperative TOE and follow up TTE. There were no long-term complications or re-operations related to the technique. Importantly, there were no complications including stroke, atrioventricular disruption and circumflex injury. Conclusion: This is a simplified, safe, and reproducible technique to deal with MAC that can be performed by all cardiac surgeons and be part of their mitral armamentarium.

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08 November 2024

12:00 pm - 1:30 pm
LUNCH WITH INDUSTRY

Catering - Default - Laguna Lilypond Terrace

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08 November 2024

1:30 pm - 3:00 pm
SESSION 3 - SURGERY FOR RHEUMATIC HEART DISEASE: IT'S NOT GOING AWAY

Scientific Session - Default - Ballroom 3 - Ballroom 2

1:30 pm
Current burden of disease

Rosemary Wyber, Rosemary Wyber

1:45 pm
Why replace if you can repair?
Agneta Geldenhuys

1:55 pm
Valve replacement in RHD: Is it really the disaster that we think it is...The Townsville experience
Chimezie Uchime

2:05 pm
Prosthetic Heart Valve Choice in Patients with Rheumatic Heart Disease in New Zealand
Nishith Patel

2:15 pm
RHD Endgame Strategy: Time to say goodbye?
Rosemary Wyber, Rosemary Wyber

2:25 pm
Early and Long-term Outcomes of Isolated Tricuspid Valve Surgery: a 23-year Analysis of the ANZSCTS Database
Michael Z.L. Zhu
Purpose: There is growing recognition that significant tricuspid valve (TV) dysfunction is both common and independently associated with increased mortality, even in the absence of left heart disease. Yet, isolated TV surgery remains infrequently performed owing to significant patient comorbidities and perceived poor surgical outcomes. We evaluated the early and long-term outcomes of isolated TV surgery using the ANZSCTS Database. Methods: All consecutive adult patients who underwent TV surgery between 2001-2023 were identified from the ANZSCTS Database (N=7068). Patients who underwent concomitant surgery (N=5562), isolated TV surgery for active infective endocarditis (N=234) or redo isolated TV surgery (N=74) were excluded. Results: A total of 1198 patients (16.9%) underwent isolated TV surgery during the study period. Mean age was 61±16 years and 52% were female. TV repair was performed in 61.5% (737/1198) patients, while 38.5% (461/1198) patients underwent TV replacement. Surrogates for late referral were frequent: 43.4% (520/1198) had NYHA III-IV symptoms, 24.1% (289/1198) were admitted with congestive heart failure, 16.5% (198/1198) had non-elective surgery status and 14.2% (171/1198) had LVEF<45%. Early in-hospital mortality was 4.1% (49/1198). Major post-operative complications included: new dialysis 2.7% (32/1198), permanent stroke 1.4% (17/1198) and permanent pacemaker 7.9% (95/1198). Kaplan-Meier survival at 90 days and at 1, 5, 10 and 15 years after isolated TV surgery was 92±1%, 89±1%, 75±2%, 59±3% and 47±6%, respectively. Long-term survival for isolated TV repair versus replacement was similar, log-rank p=0.20. Conclusion: Isolated TV surgery remains uncommonly performed and surrogates for late surgical referral were frequently observed. Despite this, rates of early mortality (4.1%) and perioperative major morbidity are lower than traditionally reported. These outcomes may serve as a basis to advocate for earlier TV surgery and may also be a benchmark for evaluating catheter-based TV interventions.

2:35 pm
30-Day Outcomes of Indigenous Australians undergoing Aortic Valve Replacement or Repair
Robert Grant

2:45 pm
Surgical Outcomes of Infective Endocarditis: A Tertiary Centre Experience
Jinxuan Cai

1:30 pm - 3:00 pm
SESSION 3A - PUSHING THE BOUNDARIES: EXTREME CASES AND SALVAGING DISASTERS

Scientific Session - Default - Ballroom 1

1:30 pm
Bleeding during uniportal surgery

Paula Ugalde Figueroa

1:45 pm
Tracheal resections: robot, unusual release and when it wont reach
Gavin Wright

2:00 pm
ECMO for thoracic surgery
Julian Gooi

2:15 pm
Nightmare complication after esophagectomy
Yin-Kai Chao

2:30 pm
The 'extended' lobe: the limits of what can be done
Siven Seevanayagam

2:45 pm
The Real chest trauma
Andrie Stroebel

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08 November 2024

3:00 pm - 3:30 pm
AFTERNOON TEA WITH INDUSTRY

Catering - Default - Laguna Lilypond Terrace

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08 November 2024

3:30 pm - 5:10 pm
SESSION 4 - ADVANCED TECHNIQUES IN CARDIAC SURGERY

Scientific Session - Default - Ballroom 1

3:30 pm
A patient journey in surgical innovation
Tal Golesworthy

3:40 pm
Transcatheter leaflet removal: are we there yet?
Kendra Grubb

3:55 pm
Aortic valve replacement in severe regurgitation and low ejection fraction
Amy Fiedler

4:10 pm
Update on Transcatheter Treatment of Mitral and Tricuspid Valve Regurgitation
Anson Cheung

4:25 pm

Totally Endoscopic Cardiac Surgery Using A 3d High-Definition Endoscopic System: Experience From Single Center In Viet Nam
Nguyen Cong Huu
Background: We present our experience in implementing totally endoscopic 3D endoscopic cardiac surgery without robotic assistance at Cardiovascular Center - E Hospital (Ha Noi – Viet Nam) Patients and methods: Descriptive, retrospective study. Summary of 6.5 years of implementation (6/2017-12/2023). A total of 1275 patients underwent surgery: Men: 515 (%) Mean age: 50.8±14.2 years; Women: 760 (%), Mean age: 50.8±14.2 years. Surgical technique: CPB establish: Peripheral cardiopulmonary bypass was done via femoral vessles and right internal jugular vein. Surgical access incisions: 1.Valve surgery(right mini thoracotomy(3-5cm incision). 2. Others: ASD, VSD, myxoma tumor, PAVSD: surgical manipulations were performed through 3-4 working ports less than 1,5cm. ASD, right atrial myxoma group: were done on beating heart, normothermia without aortic clamping. The others with cardiac arrest used a trans-thoracic Chitwood aortic clamp, antegrade Custodiol HTK cardioplegic solution. Results: There were 1268 patients of technical success, 6 cases required to converse to full sternotomy because of all causes of bleeding, 1 case of PAVSD extending the trocart hole to 3cm mini thoracotomy. 18 cases reoperated because of hemothorax, 5 stroke complication, 20 hospital death. Endoscopic surgery is applied to more types of diseases over time: valves (single or combination) congenital, cardiac tumors Conclusion: Using a combination of advanced imaging technology (3D endoscopic) and innovative surgical techniques we have substantially improved the outcomes for cardiac surgical patients. This combination is a “game changer” and will remove the need for robots in cardiac surgery because it is easier, safer and better and a lot cheaper.

4:40 pm
Transaxillary access for minimally invasive with Double Valve Surgery
Thorsten Hanke

4:50 pm
Minimally Invasive Aortic Valve Replacement by Right Anterior Thoracotomy: Early Outcomes of a Single Australian Centre Experience
Scott Jennings
In 2021 approximately 97,000 Australians had severe aortic stenosis. Each year an estimated additional 9,300 (≥60yrs) will be added. 6,300 will become symptomatic with 3,700 and 1,600 per year potential Surgical Aortic Valve Replacement (SAVR) and Transcatheter Aortic Valve Replacement candidates respectively1. Competing SAVR approaches are Full Sternotomy (FS) or Minimally Invasive Aortic Valve Replacement (MIAVR); primarily via Right Anterior/Axillary Thoracotomy or hemi-sternotomy. Benefits of MIAVR have been established2. It is hoped this series will increase interest in MIAVR amongst Australian and New Zealand surgeons. Isolated SAVR procedures from 1/1/2016 to 1/12/2021 at Prince of Wales (Public and Private) Hospitals, Sydney were included. MIAVR cases were performed via Right Anterior Thoracotomy (RAT)(n=49) and were compared to FS(n=290). We found no pre-operative significant differences (Table 1). Significant intraoperative differences: mechanical valve selection FS 18.6% vs RAT 6.1% (p=0.030), x-clamp time FS 82.3min vs RAT 70.6min (p=0.032) and bypass time FS 113.4min vs RAT 92.6min (p<0.001) (Table 2). Significant post-operative differences: mean ventilation time, FS 28.8hrs vs RAT 17.2hrs (p=0.001), mean drain output/24 hours FS 556.8mL vs RAT 401.1mL (p=0.022), discharge haemoglobin FS 106.3g/L vs RAT 116.7g/L (p=0.004) and mean length of stay FS 12.7 days vs RAT 8.3 days (p=0.006) (Table 3). We believe RAT MIAVR is a beneficial and safe option in select patients requiring SAVR. 1.Strange G et al (2021). Uncovering the treatable burden of severe aortic stenosis in Australia: Current and future projections within an ageing population, BMC Health Services Research, 21(1) doi:10.1186/s12913-021-06843-0 2.Glauber M et al (2013) Right anterior minithoracotomy vs conventional aortic valve replacement: A propensity score matched study, The Journal of Thoracic and Cardiovascular Surgery, 145(5), p1222–1226 doi:10.1016/j.jtcvs.2012.03.064.

5:00 pm
Cardiac Surgery after Transcatheter Aortic Valve Replacement (TAVR): Trends and Outcomes from the ANZSCTS Database
Michael Z.L. Zhu
Purpose: Reports of cardiac operations after TAVR are increasing. Recent data from the Society of Thoracic Surgeons (STS) suggest an exponential year-on-year increase in the United States, particularly after approval of TAVR in low-risk patients in 2019. We evaluated local trends and outcomes of cardiac surgery after TAVR using the ANZSCTS Cardiac Surgery Database. Methods: The ANZSCTS Database was queried for all patients undergoing cardiac surgery after a previously placed TAVR between Jan 2016 to Dec 2023. Results: Of 164 patients identified, 100 (61%, 100/164) underwent SAVR after TAVR and 64 (39%, 64/164) underwent non-SAVR cardiac surgery. Median age at surgery was 76.5 (IQR: 68.7, 80.8) years. Frequency of cardiac surgery after TAVR increased from 46 patients (28%, 46/164) between 2016-2019 to 118 patients (72%, 118/164) between 2020-2023, demonstrating a 156% increase. Overall 30-day mortality and stroke was 9.8% (16/164) and 6.7%

(11/164), respectively. Rates of 30-day mortality and stroke was 11% (11/100) and 8% (8/100) for SAVR after TAVR, and 7.8% (5/64) and 4.8% (3/64) for non-SAVR cardiac surgery after TAVR. Emergency/rescue cardiac surgery after TAVR was performed for 28 (17%, 28/164) patients and was associated with 25% (7/28) 30-day mortality. Among patients who underwent SAVR after TAVR, 33% (33/100) required concomitant aortic root or ascending aorta repair or replacement, and 24% (24/100) had a diagnosis of infective endocarditis. Among patients who underwent non-SAVR surgery 60.9% (39/64) had coronary artery bypass grafting and 20.3% (13/64) underwent mitral and/or tricuspid valve surgery. Conclusion: In keeping with international trends, the need for cardiac surgery after TAVR, including redo SAVR after TAVR, is rapidly increasing in ANZ and is associated with high rates of early mortality. This rising frequency, technical challenges, elevated risk and impaired outcomes should inform heart team discussions particularly if TAVR is to be considered in patients with lower risk profiles.

3:30 pm - 5:00 pm
SESSION 4A - EVOLUTION OF EARLY STAGE LUNG CANCER: OPTIMAL SURGICAL APPROACHES

Scientific Session - Default - Ballroom 3 - Ballroom 2

3:30 pm
Cutting edge techniques to find the hidden lesion
Yin-Kai Chao

3:45 pm
Decision making for segmentectomies
Paula Ugalde Figueroa

4:00 pm
SABR for Early Stage Non-Small Cell Lung Cancer
Fiona Hegi-Johnson

4:15 pm
A defence of multiport VATS
Felicity Meikle

4:25 pm
The negative impact of prolonged staging-to-resection interval on upstaging status in patients with lung adenocarcinoma
Chris Robins

4:35 pm
Survival analysis of early-stage NSCLC patients following lobectomy: impact of surgical techniques and other variables on the long-term outcome
Kaushalendra Rathore

4:45 pm
Discussion

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08 November 2024

5:10 pm - 6:10 pm
ANZSCTS AGM

Business Meeting - Default - Ballroom 1

5:10 pm

Database Report
Julian Smith

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09 November 2024

7:15 am - 8:15 am
EDWARDS LIFESCIENCES MASTERCLASS: ADVANCES IN MITRAL AND AORTIC VALVE SURGERY TECHNIQUES

Scientific Session - Default - Ballroom 3 - Ballroom 2 - Ballroom 1

Proudly sponsored by Edwards LifeSciences

7:15 am
Welcome
Amber Hext - Edwards Lifesciences

7:20 am
Advanced Mitral and Aortic Valve Surgery Techniques
Tristan Yan

7:40 am
Minimally Invasive Surgery Simulator Workshop
Tristan Yan

8:10 am
Close
Amber Hext - Edwards Lifesciences

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09 November 2024

8:25 am - 10:00 am
SESSION 5 - DISSECTING DISSECTIONS: TRICKS, TRAPS AND TRIUMPHS

Scientific Session - Default - Ballroom 3 - Ballroom 2 - Ballroom 1

8:25 am
MICS in direct vision - is it only for beginners
Thorsten Hanke

8:30 am
Aortic Dissection Type A: my most memorable case and lessons learned
George Matalanis

8:40 am
Aortic dissection Type B: my most memorable case and lessons learned
Siven Seevanayagam

8:50 am
TEVAR and Aortic dissection: My most memorable case and lessons learned
Nishith Patel

9:00 am
Aortic dissection: Modern anaesthetic strategies - its not just the bleeding!

Gemma Duncan

9:10 am
Open thoracotomy for descending aortic surgeries in contemporary era – A single centre experience.
Natasha Jeenah

9:20 am
Staged Hybrid Total Aortic Reconstruction with Thoracic Branched Endograft (TBE) for Pacific Islanders with Heritable Thoracic Aortic Disease
John Doty
Purpose Traditional surgical treatment of patients with heritable thoracic aortic disease (HTAD) requires open reconstruction. Hybrid aortic repair combines modified open arch operations with thoracic endovascular aortic repair (TEVAR). The GORE® thoracic branched endoprosthesis (TBE) facilitates hybrid operations by providing a reproducible, secure platform to reconstruct the aortic arch and proximal descending aorta, simplifying subsequent open thoracoabdominal (TAA) repair. Methods Four Pacific Islander patients with HTAD and prior ascending aortic repair for Type A dissection underwent staged total aortic replacement consisting of three procedures: 1) redo sternotomy and proximal arch reconstruction, 2) endovascular distal arch/ descending thoracic aortic with TBE and TEVAR extension, and 3) open TAA repair. The first two procedures were performed during a single hospitalization; the third operation was performed during a scheduled second hospital admission. Results All patients survived total aortic reconstruction. The mean interval between the first two procedures was 4.5 days (range 3-6 days). The mean interval to the third operation was 10.5 weeks (range 5-15 weeks). No patient sustained stroke or spinal cord injury. One patient had a prolonged spinal headache. Follow-up CT angiography was performed prior to discharge and showed good stability of the endovascular components. One patient developed late type IC endoleak from the left subclavian artery requiring subclavian to carotid arterial transposition and exclusion of the portal utilizing a traditional TEVAR for resolution. Conclusions This study demonstrates total staged hybrid aortic reconstruction is a safe and effective strategy for treatment of extensive aortic disease in Pacific Islander patients with HTAD. A single branched endograft is a key component that provides a stable platform for both proximal and distal extension and reduces the overall risk of neurologic injury.

9:30 am
Coagulopathy and false lumen thrombosis in type A aortic dissection
Yattheesh Thanalingam
Purpose Type A aortic dissection (TAAD) results in an intimal tear that redirects blood flow into the media, splitting the aorta into two channels – the true lumen (TL) and false lumen (FL). Following emergency surgical repair, 50% of patients will remain with a patent false lumen and chronically dissected descending aorta. This is associated with aortic expansion, reoperation and increased mortality. Inflammation and coagulopathy are associated with the pathogenesis of TAAD, with the latter proposed to be caused by the contact of blood with the non-endothelialised walls of the false lumen. We aimed to determine if preoperative coagulopathy a risk factor for postoperative false lumen thrombosis. Methodology We conducted a single-centre, retrospective, case-controlled study of patients with TAAD between January 1, 2015, and June 30, 2024. Patient demographics, preoperative characteristics, operative details, postoperative complications, and follow-up computed tomography scans at one year were compared between patients who presented with patent FL and thrombosed FL. Coagulopathy was evaluated using standard laboratory tests on admission, post-operatively, and discharge. Results Of 125 patients with TAAD, 64.8% (n=81) had patent FL and 35.2% (n=44) had thrombosed FL. Patent FL was associated with higher in-hospital (46.9% vs 4.8% $p<0.05$) and mid-term mortality (53.2% vs 9.1%, $p<0.05$), renal failure (12.5% vs 2.4 %, $p=0.04$) and gastrointestinal ischaemia (30.6% vs 7.5%, $p<0.05$) compared to the thrombosed FL group. Patients with patent FL had significantly higher preoperative (41.2 vs 33.3, $p<0.05$), postoperative day 1 (54 vs 40.4, $p<0.05$) and discharge (38.9 vs 35, $p<0.05$) APTT and lower levels of fibrinogen at discharge (5.1 vs 6.4 $p<0.05$). Conclusion TAAD patients with a patent FL have a higher risk of short and mid mortality, and post-operative morbidity. Development of a patent FL is associated with abnormalities in the coagulation cascade which represents a novel therapeutic target.

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09 November 2024

10:00 am - 10:30 am
MORNING TEA WITH INDUSTRY

Catering - Default - Laguna Lilypond Terrace

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09 November 2024

10:30 am - 12:00 pm
SESSION 6 - CHALLENGING SCENARIOS IN THORACIC SURGERY

Scientific Session - Default - Ballroom 1

10:30 am
Thymomas: technical considerations for the terrible cases
Yin-Kai Chao

10:45 am
Should we fix an isolated rib fracture?
Julian Gooi

11:00 am
The challenging mediastinal case - is robotic better?
Levi Bassin

11:15 am
Tracheo-oseophageal fistulas: when to fix and how
Julian Gooi

11:30 am
Single versus bilateral lung transplantation for interstitial lung disease. Two lungs are not always better than one.
Sanjay Dutta

11:40 am
COVE Study - Phase I study of VATS fissure completion prior to Endobronchial Valve Insertion for severe COPD patients with Collateral Ventilation (COVE)
Adrienne Lui
COPD represented 4% of all deaths in Australia in 2022. Lung volume reduction surgery (LVRS) uptake was minimal until landmark NETT, where LVRS offered survival benefit for those with predominantly upper lobe emphysema and low exercise capacity. Endobronchial lung volume reduction (ELVR) describes one-way outflow endobronchial valves (EBV) deployed into diseased bronchi to increase functional capacity. Its purported advantages are less in-hospital morbidity and quicker recovery than LVRS. Unfortunately, without complete interlobar fissures, Collateral Ventilation (COVE) results its failure. COVE study proposed VATS fissure completion on incomplete interlobar fissures to removal collateral ventilation, prior to EBV insertion. Aim: To show this novel surgical method has similar improvements on lung function, exercise tolerance and QoL as LVRS or EBV-alone cohorts, with no worse morbidity or mortality than LVRS. Methods: A prospective, single arm study was conducted. 20 patients with severe COPD and COVE were to be recruited. Specially formatted CT Chest scans determined the optimal lobe and degree of fissure completion required. Lung function, lung volumes, exercise tolerance, dyspnoea and QoL questionnaires were assessed at 6 months. Results: Recruitment was interrupted due to COVID Pandemic. 13 patients were recruited and nine were eligible. The mean difference in QoL using SGRQ score (-31.7 points) was significantly improved at 6 months ($p< 0.001$). Mean difference in distance covered during 6MWT (45.25m) was significantly greater at 6 months ($p=0.003$). Mean residual volume reduction was 0.28 litres. Although a large clinically important difference, it was not statistically significant. Conclusion: Despite a smaller cohort than planned, our study concluded that patients with severe emphysema and collateral ventilation had quality of life benefits and improved exercise tolerance after VATS fissure completion followed by insertion of EBV.

10:30 am - 12:00 pm

SESSION 6A - CHALLENGING TOPICS IN HEART FAILURE: MECHANICAL ASSIST AND TRANSPLANT

Scientific Session - Default - Ballroom 3 - Ballroom 2

10:30 am
Out of Hospital Extracorporeal Cardiopulmonary Resuscitation (ECPR)
Brian Plunkett

10:40 am
ECMO: does flow matter
John Fraser

10:50 am
Impella to the rescue: current strategy, indications and outcomes
Anson Cheung

11:05 am
Heart Transplantation in 2024 and Beyond: Expanded Donor Criteria, DCD Donation, and Normothermic Regional Perfusion
Amy Fiedler

11:20 am
Update on Bivacor TAH
Paul Jansz

11:30 am
Running Hot and Cold: Pushing The Boundaries in Heart Transplantation
Yashutosh Joshi

11:40 am
The Cardiobionic Ventrii Ventricular Assist Device
Sam Emmanuel

11:50 am
Minimally invasive surgery with comprised Left Ventricular Function
Thorsten Hanke

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09 November 2024

11:00 am - 12:00 pm
TA TRIAL INVESTIGATOR MEETING

Scientific Session - Default - Laguna 2

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09 November 2024

12:00 pm - 1:30 pm
LUNCH WITH INDUSTRY

Catering - Default - Laguna Lilypond Terrace

09 November 2024

12:15 pm - 1:15 pm
CORCYM MASTERCLASS: THE BENEFITS OF PERCEVAL PLUS SUTURELESS VALVE IN MINIMALLY INVASIVE CARDIAC SURGERY – CASE STUDIES AND DISCUSSION

Masterclass - Default - Ballroom 1

Proudly sponsored by CORCYM

12:15 pm
Intro to MICLAT approach
Utz Kappert, Manuel Wilbring

12:22 pm
Case Study and Discussion
Thorsten Hanke

12:40 pm
How to start a MICLAT Program in your Hospital
Thorsten Hanke

12:50 pm
Panel Discussion
Borut Gersak, Thorsten Hanke, Paul Jansz, Trevor Fayers, Simon Moten, Aubrey Almeida

09 November 2024

1:25 pm - 3:00 pm
SESSION 7 - IT'S NEVER "JUST THE AORTIC VALVE": TAVI, TRICKS AND TRADITIONS

Scientific Session - Default - Ballroom 1

1:25 pm
Lifetime Management of Edwards Valves
David Bellas

1:30 pm
Overcoming prosthesis-patient mismatch with transcatheter aortic valve replacement
Kendra Grubb

1:45 pm
Australian TAVI Update: the truth hurts?
Jayme Bennetts

1:55 pm
The coming tsunami: explant TAVI surgery 101- techniques
Anson Cheung

2:10 pm
Mechanical AVR in the TAVI era - the renaissance approaches?
Trevor Fayers

2:20 pm
Bicuspid Aortic Stenosis - the last bastion of the Surgical AVR or the new TAVI frontier?
Christopher Smith

2:30 pm
Early Clinical Outcome of Perceval Aortic Valve Implantation in Townsville, Australia
Pouya Nezafati
Purpose Sutureless aortic valve replacement (AVR) with Perceval has offered advantages to the standard valve. Herein we present the 30-day clinical outcomes in patients underwent AVR with Perceval from an Australia experience. Methodology From September 2014 to June 2023, 297 patients underwent sutureless aortic valve replacement with Perceval (Corcym) in two hospitals in Townsville, Australia. AVR with concomitant procedures were performed in 117 patients. Peri-procedural and 30-day post-operative follow-up outcome are studied as a cross-sectional retrospective study. Results The mean age of patients was 72.9 years with 64.1% female. AVR performed via mini-sternotomy in 27 (9%) patients and 204 (69.6%) patients received large and extra-large valves (39.2% large and 30.4% extra-large). The median cross-clamp time (CCT) and cardiopulmonary bypass (CPB) time in isolated AVR were 54.8 min and 72.4 min, respectively, and in patients with AVR and concomitant procedures, CCT was 69.9 min with 94.7 min CPB time. Post valve implantation intra-operative Transesophageal Echocardiogram (TOE) did not show any paravalvular leak (PVL) in 291 (98%) patients and the remaining 6 (2%) patients had trivial paravalvular leak. There was no PVL on the TOE in 30-day follow-up in all patients. Post-operatively, the mean intensive care unit and hospital stay were 2.3 and 6.8 days, respectively. Permanent pacemaker (PPM) insertion was required in 19 (6%) subjects and cardiac mortality within 30 days was reported in 2 patients (0.6%) with 2 years follow up from a survival analysis plot revealed to be 89.2%. Conclusions Our study demonstrated excellent short-term outcomes using Perceval sutureless aortic valves. The high implantation success rate and low post-op complication rate reveals a promising alternative of Perceval to conventional biological AVR. Perceval can specially be offered in high risk patients whom long pump time would be a precluding factor for surgical AVR.

2:40 pm
Outcomes of mechanical aortic valve replacement in Queensland patients younger than 20 years of age.
Siddharth Amboli
Purpose Aortic valve pathology in patients younger than 20 years is usually surgically managed with valve repair or the Ross procedure. Mechanical aortic valve replacement (AVR) becomes necessary if the aortic valve is irreparable, the repair fails, or the Ross procedure is contraindicated. This study evaluated outcomes after mechanical AVR in this group of patients. Methodology Retrospective cohort study of patients in Queensland who were younger than 20 years and underwent mechanical AVR between 1997 and 2020. Results From 1997 to 2020, 85 patients underwent mechanical AVR in Queensland [65 (76 %) male and 12 (14.1%) First Nations]. Median age was 13.5 years (IQR 10.5-15.4). 37 (44%) had prior aortic valve operation. Primary diagnoses were congenital defects (61%), rheumatic heart disease (RHD, 33%), and infective endocarditis (6%). Median size of the prosthesis was 22 mm (IQR 21-23). 17 (20%) required concomitant aortic root enlargement. There were two (2.3%) early deaths. Median follow-up was 8.71 years (IQR 4.5-14.4). 24 (14%) needed re-replacement of the valve prosthesis. 12 (14%) patients died during follow-up. Kaplan-Meier survival was 91.6%, 89.4%, and 76.3%, and freedom from aortic valve reintervention was 96.2%, 89.4%, and 87.5% at 5, 10 and 20 years, respectively. Warfarin compliance was good in 77 (90%) and poor in 8 (10%) patients. Nine (11%) patients had a thromboembolic event (stroke 6; transient ischemic attack 2; small bowel ischemia 1; 8 were poorly compliant with warfarin). 68 (n=73, 93.1%) non-First Nations patients and 9 (n=12, 75%) First Nations patients were compliant with warfarin (p=0.04). Conclusion Mechanical aortic valve replacement in patients younger than 20 has a low early mortality. 1/6th require re-replacement, and 14% do not survive to adulthood. Warfarin compliance is poor in 10% of patients in Queensland. It is worse in First Nations patients and is associated with thromboembolic complications.

2:50 pm
INSPIRIS RESILIA Aortic Valve Replacement: A Single Centre's Experience
Abbey Knox
Patients increasingly opt for bioprosthetic valves to avoid lifelong anticoagulation, however these are limited by durability and need for reintervention. The Edwards Lifesciences INSPIRIS RESILIA valve is a next generation valve designed to have improved anti-calcification properties for sustained haemodynamic performance and to allow for future transcatheter valve-in-valve intervention. We present our clinical outcomes with the INSPIRIS bioprosthesis in comparison to other bioprosthetic valves for aortic valve replacement. Retrospective review of all patients undergoing aortic valve replacement at Flinders Medical Centre from January 2018 to December 2023. The primary outcomes were 30-day mortality and clinical end points, comparing the INSPIRIS bioprosthesis to all other types of bioprosthetic aortic valve. 437 patients

underwent aortic valve replacement, of which 257 (59%) received the INSPIRIS bioprosthesis. Aortic stenosis was the indication for surgery in majority of patients. Use of the INSPIRIS bioprosthesis increased from 4% to 94% during the six-year period. The INSPIRIS group had a mean age 62 years, with 52% of INSPIRIS patients aged <65 years compared with 27% of “other” patients; 29% of the INSPIRIS group was female, and the most common valve size was 23 mm. Patients in the INSPIRIS group had lower rates of post operative stroke (1.5% vs. 4.4%), arrhythmia (44% vs. 49%), and permanent pacemaker implantation (2.7% vs. 6.6%). Equivalent rates of acute kidney injury and myocardial infarction were seen between groups. All-cause mortality at 30 days was 0.7% for the INSPIRIS bioprosthesis compared to 3.8% for all other bioprosthetic valves. The INSPIRIS bioprosthesis is becoming a favoured valve choice in younger patients. Our mid-term experience with the INSPIRIS bioprosthesis demonstrates comparative or better outcomes to other bioprosthetic valves in patients undergoing aortic valve replacement. Long term follow-up and correlation with echocardiographic data is warranted.

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09 November 2024

1:30 pm - 3:00 pm
SESSION 7A - SURGERY IN LOCALLY ADVANCED AND METASTATIC SETTINGS

Scientific Session - Default - Ballroom 3 - Ballroom 2

1:30 pm
What is resectable disease?
Paula Ugalde Figueroa

1:45 pm
Surgical management of giant thoracic tumours
Tristan Yan

1:55 pm
Surgery for N2 disease
Simon Knight

2:05 pm
Chest wall reconstruction - endless possibilities or reality bites?
Michael Harden

2:15 pm
A Retrospective Case Series evaluating Efficacy of Single Port Thoracoscopic Lobectomy in Patients with Severely Compromised Lung Function (Predicted Postoperative Diffusing Capacity of the Lung for Carbon Monoxide % < 40%)
Jyotindra Singh
Background: Traditional assessments of operative risk in patients with compromised pulmonary function frequently preclude them from lobectomy, often leading to the consideration of less definitive treatments such as sublobar resections or stereotactic body radiation therapy. Objective: This study evaluates the efficacy and safety of single-port thoracoscopic lobectomy for high-risk patients characterized by a predicted postoperative diffusing capacity for carbon monoxide (DLCO) of 40% or less. Methods: We conducted a retrospective analysis of single-port thoracoscopic lobectomy with a predicted postoperative DLCO of ≤40% at Nepean Hospital's between January 2022 to January 2024 Lobectomy/ Segmentectomy was performed in 100 patients with a predicted DLCO less than or equal to 40% which included active smokers as well .The median age was 62 years,56% (n = 56) were women, and 44% (n = 44) . Single port Thoracoscopic lobectomy was performed in 76% (n = 76) and Segmentectomy in 24% (n = 24). There was no operative mortality. All patients were extubated postoperatively in theatre. All patients had intercostal pain buster for pain relief including pre operative and post operative physiotheraphy assessment . Median length of stay of 3 days. The most frequent complications were cardiovascular (14% [n = 14]) and pulmonary (6% [n = 6]). Two patients were discharged on home oxygen, and four required rehabilitation post discharge. Conclusions: Single port Thoracoscopic Lobectomy can be safely performed in patients considered to be high risk for resection by pulmonary function tests. Less invasive approach with intraoperative pain busters

for good postop pain relief made in theatre extubation possible resulting excellent postoperative outcomes

2:25 pm
A Comparison of Three-port and Four-port da Vinci Robot-assisted Thoracoscopic Surgery for Lung Cancer: A Retrospective Study
Chen Yang
Background: At present, research comparing the short-term postoperative outcomes of lobectomy/segmentectomy in lung cancer under different ports of da Vinci robot-assisted surgery is insufficient. This report aimed to compare the outcomes of three-port and four-port da Vinci robot-assisted thoracoscopic surgery for radical dissection of lung cancer. Method: 171 consecutive patients who presented to our hospital from January 2020 to October 2021 with non-small cell lung cancer and treated with da Vinci robot-assisted thoracoscopic surgery for radical resection of lung cancer were retrospectively collected and divided into the three-port group (n =97) and the four-port group (n = 74). The general clinical data, perioperative data and life quality were individually compared between the two groups. Result: All the 171 patients successfully underwent surgeries. Compared to the four-port group, the three-port group had comparable baseline characteristics in terms of age, sex, tumor location, tumor size, history of chronic disease, pathological type, and pathological tumor-node-metastasis (pTNM) staging. The three-port group also had shorter operation time, less intraoperative blood loss, lower chest tube drainage volume, shorter postoperative hospitalization stay durations, but showed no statistically significant difference ($P > 0.05$). Postoperative 24, 48 and 72 h visual analogue scale pain scores were lower in the three-port group (all $p < 0.001$). No significant difference was observed between the two groups in the hospitalization costs ($P = 0.664$), number or stations of total lymph node dissected ($p > 0.05$) and postoperative respiratory complications ($P > 0.05$). Conclusion: The three-port robot-assisted thoracoscopic surgery is safe and effective and took better outcomes than the four-port robot-assisted thoracoscopic surgery in non-small cell lung cancer.

2:35 pm
Case Series of Robotic VATS procedures
Michael Jacoub
This Case series aimed to review all thoracic cases operated in the department of Thoracic surgery (University of ..) . A total of 169 participants were enrolled in this study whom age range from (23-86 years old) with mean ±, SD (66.5 ±, 10.4), 51.5 % of them are females and 48.5% of them are males. Among all sites of resection Upper lobectomy is the most common site representing 45% of all other sites. Those who lived among the studied participants are 92.3%, the most common tumor presented is Adenocarcinoma 50.7% According to the CT the most prevalent type is 1b type. All details are presented in table (1, 2). A highly statistically significant correlation was detected between different tumor types and Preoperative diagnosis and tumor differentiation where p value is less than 0.05 using Chi square test (Table 4). Age and gender were not statistically different among different tumor types. A statistically significant difference was detected between different tumor types and the length of procedure using ANOVA test p value < 0.05 at two tailed test (Table 5) ICC removed is positively directly correlated with LOS and tumor size, LOS is positively correlated with tumor size, CN is directly correlated with the length of procedure, and tumor size. Length of the procedure is directly correlated with tumor size. Tumor size was found to be positively directly correlated with ICC removed, LOS, CN and length of the procedure using Karl Pearson's correlation (2 tailed test). Correlation is significant at the 0.05 level (Table 6) All data were collected, analyzed using SPSS version 21, (IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: USA). Categorical data were analyzed using frequency tables and percentage, Quantitative data as Age, tumor size, number of ports, LOS, length of procedure were represented by range and mean,

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09 November 2024

3:00 pm - 3:30 pm
AFTERNOON TEA WITH INDUSTRY

Catering - Default - Laguna Lilypond Terrace

3:00 pm - 3:30 pm
SURGERY FOR CONGENITAL HEART DISEASE MEETING

Business Meeting - Default - Laguna 2

3:00 pm
ACHD - Who, where and when
Prem Venugopal

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09 November 2024

3:30 pm - 5:00 pm
SESSION 8 - CONGENITAL - AORTIC VALVE DISEASE. IT'S MY WAY OR THE HIGHWAY.

Scientific Session - Default - Ballroom 1

3:30 pm
What it takes to become a ROSS surgeon
Peter Skillington

3:45 pm
PPM and young patients: Is it the surgeon or the patient
Homayoun Jalali

4:00 pm
ROSS PEARS: new trick up your sleeve
Conal Austin

4:15 pm
Aortic Valve repair: The Boston way
Chris Baird

4:30 pm
Outcomes of Isolated Tricuspid Valve Surgery: One Centre’s 11-year Experience
Charis Tan
Background Tricuspid regurgitation(TR) is a common manifestation of tricuspid valve(TV) disease, affecting 65-85% of the population. TR has been increasingly recognized to be associated with deleterious outcomes. Despite its significance, TR remains undertreated. We investigated the survival outcomes of surgery for isolated TR in a quaternary centre. Methods Retrospective data of 214 patients who had TV surgery from January2009 to December2020 at a quaternary hospital in Sydney was obtained. Group A (101 patients) describes patients who had low-moderate TR and no right ventricle dysfunction (RVD); Group B (74 patients) describes patients with severe TR and no RVD; Group C (39 patients) describes patients with severe TR and RVD. Results Mean age of all patients at time of index surgery was 64 ± 15 years, 101 were females and 113 males. The mean EuroSCORE II was 2.4 (1.2, 5.6), mean hospital length of stay was 18 ± 25 days and mean intensive care unit length of stay was 10 ± 27 days. The total mean follow-up time was 13 ± 26 months. There were 41 (19%) deaths post tricuspid valve surgery at a mean age of 71 ± 16 years old and a mean time of 29 ± 37 months post tricuspid valve surgery. Patients with severe TR and RVD (Group C) were at a higher risk of death (HR 3.07 (1.25-7.55);p=0.0192) compared to Group A and B. Other risk factors for death include pre-op creatinine > 150 (p=0.009), pre-op PVD (p=0.016), pre-op NYHA class 3 and above (p=0.005), pre-op thienopyrine (p=0.001) and pre-op pulmonary hypertension (p=0.004). Conclusion This is the largest series to date and showed that patients with severe TR and RVD are at a much higher risk of mortality than those without RVD post-surgery. Consideration of early operation on this subset of patients should be undertaken.

4:40 pm
Survival and post-discharge morbidity in patients requiring post-cardiotomy extracorporeal membrane oxygenation in Queensland: a retrospective cohort study
Lachlan Crawford
Purpose To describe survival and morbidity among children requiring extracorporeal membrane

oxygenation (ECMO) after cardiac surgery. Methodology Retrospective single-centre cohort study of patients aged less than 18 years undergoing cardiac surgery between 2013 and 2021 at Queensland Children's Hospital. Only patients who required post-operative ECMO in the same admission as their index surgical procedure were included. Patient information was obtained from the Australia and New Zealand Congenital Outcomes Registry for Surgery (ANZCORS) and hospital records. Morbidity endpoints included the need for new mobility aids postoperatively, new neurological deficit, developmental impairment, growth restriction (weight or height < 5th percentile for age), home oxygen support, invasive feeding and long-term renal replacement therapy. Results Of 2,227 children who underwent a cardiac surgical procedure, 66 (3%) required post-operative ECMO during the study period. Median age was 34.5 days (IQR 10.5-133.8 days) and median weight was 3.75kg (IQR 3.1-4.9kg). 51 patients (77.3%) had a biventricular circulation. 15 patients had (22.7%) had single-ventricle physiology. 97% received venoarterial ECMO. The most common indications for ECMO were failure to wean from cardiopulmonary bypass (n=25, 37.9%) and postoperative cardiac arrest (n=20, 30.3%). Median duration of ECMO was 5.5 days (IQR 3-10.8 days). 38 patients (57.6%) survived to hospital discharge. Median follow-up was 5 years (IQR 3.2-6.9 years). Kaplan-Meier survival in the overall study cohort was 57.6% at 1 year and 51.1% at 5 years. Among survivors to discharge, survival was 97.4% at 1 year and 88.7% at 5 years. Major morbidity was observed in 21 hospital survivors (55.3%) during follow-up. Conclusion Children who require ECMO after cardiac surgery have high hospital mortality with low attrition after discharge. Nearly 90% of hospital survivors are alive at 5 years. However, major morbidity persists in more than 50% of survivors.

4:50 pm
Redo Coarctation Repairs: One Institution's Technique
Charis Tan

3:30 pm - 5:00 pm
SESSION 8A - WHERE THE CORONARY MEETS THE LUNG POSTER PRESENTATIONS

Scientific Session - Default - Ballroom 3 - Ballroom 2

3:30 pm
Time of lung transplantation does not impact short and long-term patient outcomes (but may impact surgeon wellbeing!)
Sanjay Dutta

3:35 pm
Spiltmilk: Management and prevention of chylothorax
Claudia Villanueva
Purpose: Chylothorax results from an injury to the thoracic duct or its tributaries. This may be postsurgical, traumatic, inflammatory or malignant. A chyle leak is a very challenging problem to manage and can result in prolonged length of stay and often requires surgical correction. At Royal North Shore Hospital we have developed a strategy for chyle leak prevention in major thoracic resections and its management when it occurs. These techniques can reduce the morbidity of this condition and improve patient outcomes. Methods: Management and prevention of chylothorax requires a multi-disciplinary team, primarily involving surgeons and interventional radiologists. Chyle leaks can be treated with a several techniques including diet modification, embolization, sclerosing agents, ligation of the thoracic duct and pleurodesis. The use of indocyanine green and near infra-red thoracoscopy offers an accurate method of identification of the thoracic duct during surgery and the identification of a chyle leak when it has occurred. This new technology is a useful adjunct to managing this challenging condition. Results: Patients considered to be at high risk of thoracic duct injury are pre-operatively injected with indocyanine green into the inguinal lymph nodes to identify the thoracic duct and any chyle leak at the time of primary surgery. Injection of indocyanine green provides an accurate way to identify the thoracic duct during surgery. In patients with an active chyle leak, indocyanine green injection into the inguinal lymph nodes helps to identify the leak source and avoids the risks of aspiration following cream ingestion prior to induction. For low volume chyle leaks patients lipiodol injection has proved useful as a sclerosing agent and identification of the level of leak. Conclusions: Indocyanine green has proven to be a useful tool in the management of chyle leaks.

3:40 pm
Novel 3D Printed Model of Pulmonary Broncho-Vascular Anatomy
Victor Shahen

Purpose: Lung resection requires detailed knowledge of broncho-vascular anatomy including the 3D inter-relationships between structures. Surgeons and trainees construct mental 3D images using 2D CT and graphical representations. This project demonstrates how to convert CT images of the chest into a detailed 3D printed model. Potential benefits include anatomical learning, informed patient discussion, and operative planning. Methodology: Contrast enhanced CT images of the chest were acquired as DICOM files at a slice thickness of 1.0mm and converted into detailed 3D replicas of the pulmonary veins, pulmonary arteries, and tracheobronchial tree using Slicer (freely accessible software). The 3D models were analysed for anatomical accuracy and variations, then printed using an Ender 3D printer and polylactic acid filament in different colours with overhangs braced by grid supports. The supports were removed and a Dremel rotary tool was used to trim the models that were then assembled into the final model. Results: A detailed and accurate 3D model of pulmonary broncho-vascular anatomy was created. Printing was simple but attention to creation and careful removal of supporting structures is essential to avoid inadvertent loss of distal structures. The model provides a unique way to visualise 3D inter-relationships between the airways and pulmonary vasculature. The department has found the model valuable for learning, operative planning, and to aid discussions with patients and carers. Images of the models can be found at: https://shorturl.at/XhBqH. Conclusion: CT images of the chest can be rendered into 3D models and printed using freely available software. Critical aspects include the creation of 3D models in Slicer, balancing detail versus utility and practicality during 3D printing, and selection and removal of printing supports. These models provide clear and accurate visualisations of lung anatomy making them valuable tools in both educational and clinical settings.

3:45 pm
VV-ECMO for the Repair of an Unusual Case of Massive Tracheo-Broncho-Oesophageal Fistula
Aaron Adonopulos
Background: Acquired tracheal/bronchoesophageal fistula (T/BEF) is a morbid condition associated with trauma, malignancy, chronic infections or inflammatory diseases. The resulting fistula presents life threatening complications including recurrent aspiration pneumonia, severe malnutrition and risk of mediastinitis. Conservative, endoscopic and ultimately surgical repair are the treatment possibilities. Surgical repair, however, presents severe technical and ventilatory concerns as intubation and single lung ventilation become almost impossible. To facilitate safe surgical repair, veno-venous extracorporeal membrane oxygenation (VV-ECMO) may be utilised. Case: We report a case of chronic left-BEF secondary to erosive B-cell lymphoma, without radiotherapy, in a 30 year old female which was managed endoscopically over 24 months; with oesophageal and tracheal stenting. This ultimately failed due to stent erosion resulting in massive T/BEF and aspiration pneumonia, necessitating surgical repair. VV-ECMO was employed to allow repair of T/BEF while protecting the contralateral lung. We also describe our repair technique for this challenging case. VV-ECMO was continued post operatively to provide an ultraprotective ventilatory strategy in the post-operative period. The patient was weaned from ECMO and extubated two days later with good recovery at the time of writing. Conclusion: This is an interesting case of massive T/BEF which was successfully managed surgically with the use of VV-ECMO intra and post operatively.

3:50 pm
A Case of Adenocarcinoma in an Intralobar Bronchopulmonary Sequestration with Skip N2 Metastasis
Robert Grant

3:55 pm
Primary benign cutaneous pecoma of the thoracic wall
Robert Alzul

4:00 pm
Acute Spontaenous Massive Haemothorax in a Jehovah's Witness with beta-thalassemia and thoracic extramedullary haematopoiesis: a management conundrum
Amy Bennett
A 37 year-old male presented with acute atraumatic left sided chest pain and dyspnoea. The patient had a medical history significant for beta-thalassemia with baseline haemoglobin concentration 80-90 g/L, and thoracic extramedullary haematopoiesis. He identified as a Jehovah's Witness. Initial x-ray imaging revealed a rapidly progressive large left pleural collection. There was acute anaemia with Haemoglobin drop from 80 g/L at admission, to 53 g/L within 36hrs of presentation. The patient was tachypnoic and tachycardic, without hypoxia or hypotension. Subsequent CT angiography of the chest revealed large left-sided pleural effusion compatible with haemothorax, passive atelectasis and near complete collapse of the left lower lung, and posterior mediastinal and paraspinal extramedullary haematopoiesis. There was no active bleeding identified at the time of the scan and therefore no suitable target for endovascular embolization. Multidisciplinary management input was sought from cardiothoracic surgery, haematology, interventional

radiology, and, and radiation oncology. In accordance with his religious beliefs, the patient declined administration of resuscitative blood products. A decision was undertaken to stabilize the patient medically prior to any invasive thoracic intervention, to reduce the risk of iatrogenic bleeding without the option of subsequent blood transfusion. The patient was admitted to hospital and received tranexamic acid, high dose Erythropoietin, iron infusion, and B12 and folate supplementation. After 10 days, the haemoglobin concentration improved to 88 g/L. A left intercostal chest drain was inserted by a cardiothoracic surgeon under local anaesthetic. Four litres of dark blood-stained fluid was drained and there was partial re-expansion of the left lung. The chest drain was removed after 48hrs. The patient subsequently underwent targeted radiotherapy of the extramedullary haematopoietic tissue, to reduce the risk of future recurrent spontaneous bleeding.

4:05 pm
Constrictive Pericarditis post lung transplantation: Suspect and succeed
Fiona Doig
Purpose: Constrictive pericarditis post lung transplant is a rare diagnosis with an incidence of 0.4% [1]. We report a series of 5 consecutive patients from our centre, highlighting prompt clinical suspicion and diagnosis leading to successful pericardiectomy. Methodology: A database review selected all patients who underwent pericardiectomy for constrictive pericarditis post lung transplantation between January 2018 and June 2024. Results: 5 patients were diagnosed with constrictive pericarditis with a median time interval of 17 months (10-34 m) after lung transplantation. All were male with a median age of 55 years (31-72 y). Two patients had bronchiectasis and one each had IPF, Cystic Fibrosis and COPD. All patients presented with worsening dyspnoea and on interrogation, symptoms of right heart failure. Echocardiogram, MRI and right heart catheter study confirmed the findings of constriction for all patients except 1. Total pericardiectomy was performed via median sternotomy in all patients. 3 patients required cardiopulmonary bypass. 2 patients had early rejection with deteriorating lung function which were medically managed. 1 patient underwent sternal plating and bone grafting for malunion at the time of pericardiectomy. Median ICU stay post transplantation was 2 days (2-4 d), and median time for which drains were kept were 8 days (5-13 d). 2 patients were diagnosed with COVID in this period. Histopathology of the pericardium revealed fibrous pericarditis in all the patients. All patients had an uneventful recovery. There was no mortality. Conclusion: Constrictive pericarditis post lung transplant is confounded by its clinical and radiological presentation. Prompt diagnosis by conventional means leads to early pericardiectomy and hence should be standard of care. Reference: 1.Armstrong B.L et al. Constrictive pericarditis after lung transplantation. Transplantation 2020;104: 1081-1084

4:10 pm
Eggshell Pericardiectomy: a rare case of idiopathic calcified constrictive pericarditis.
Louis Fiander
Introduction: Complete calcified constrictive pericarditis (CCCP) is rare and most commonly idiopathic, with other common causes including tuberculosis, cardiac surgery and radiotherapy. This work aims to share a surgical approach to complete pericardiectomy through the case of a healthy 49-year-old ultra-marathon runner with idiopathic CCCP. Case Report: This patient with no medical, surgical or radiation history presented with an eleven-month progressive history of exertional dyspnoea, fatigue, palpitations and weight gain, taking him from endurance athlete to being unable to walk 50m. Examination revealed signs of congestive heart failure and atrial fibrillation. Bloodwork showed liver and renal impairment but negative serology for tuberculosis, autoimmune or other infectious causes. Echo identified LVEF of 45%, pericardial thickening, tricuspid regurgitation, septal bounce and ventricular interdependence, with total calcification seen on CT. CCCP was diagnosed and a decision to operate made. Complete pericardiectomy via median sternotomy was performed, with the superior pericardium resected first, enabling aortic access for potential cannulation. Due to complex adhesions, a midline approach was taken. Complete resection of the pericardium ensued, with resection including the diaphragmatic pericardium, and spanning between phrenic nerves. The pericardium was so calcified it was resected intact, like an eggshell, from the heart. Immediate improvement in diastolic function was seen. Recovery was only complicated by drainage of a right-sided pleural effusion. Follow up identified improved LVEF (55%), liver and renal function, and drastic symptomatic improvement – with the patient returning to running again. Conclusion: This unusual case of an athlete with idiopathic complete calcified constrictive pericarditis demonstrates the immediate benefit of surgical resection despite severe disease, producing significant benefit to the patient's quality of life and prognosis.

4:15 pm
Cardiac function and mortality of stem cell therapy in coronary artery disease patients who underwent coronary artery bypass graft and had no heart failure: a meta-analysis
Thanut Jansirirat

4:20 pm

Assessment of graft patency and measurement of regional myocardial temperature changes using a more advanced Infrared Camera

Madhu Ravisankar

Purpose: Camera technology has advanced over the last 20 years and cameras now display results with better resolution and accuracy. Digital technology and colour displays can be easily calibrated to temperature ranges. The applications of these cameras are expanding rapidly and the purpose of this project was to evaluate their potential use in cardiac surgery. Methodology: A Teledyne C3 - X infrared camera from FLIR was used to assess myocardial temperature changes and graft patency during coronary artery bypass grafting. Myocardial temperature was assessed in 10 minute increments following antegrade administration of Del Nido Cardioplegia. Graft patency assessment was performed following completion of the Internal thoracic artery (ITA) distal anastomosis at baseline and in 30 second intervals for 2 minutes. The myocardial warming and the graft patency was evident in the form of typical patterns of colour change. Results: 36 patients undergoing isolated, elective coronary artery bypass grafting were assessed. Myocardial temperature demonstrated typical patterns of regional warming with the inferior surface warming first, then the lateral surface, finally the anterior surface and atria. Graft patency was discernible as long as a temperature gradient existed between the myocardium and the systemic temperature (ITA flows). Conclusions: A simple reproducible method of assessing myocardial temperature change as well as graft patency was demonstrated using the latest generation of infrared cameras.

4:25 pm

Comparison of Patient-Reported Outcomes Between Endoscopic Vein Harvesting Without Dedicated Surgical Assistants and Open Vein Harvesting in Coronary Artery Bypass Grafting

Victor Shahen

Purpose: The long saphenous vein is frequently used in coronary artery bypass grafting (CABG). Traditionally harvested using open vein harvesting (OVH), this method commonly leads to wound complications. Endoscopic vein harvesting (EVH) offers a minimally invasive alternative but typically requires dedicated assistants trained in EVH. This study aims to compare the long-term patient-reported outcomes of EVH without specialised assistants versus OVH to evaluate the impact of these methods on overall CABG outcomes and leg wound recovery. Methodology: A total of 58 patients who underwent CABG in the past 24 months were included and divided into two propensity-matched groups: 29 EVH and 29 OVH. Data were collected on overall CABG outcomes, community care needs, antibiotic prescriptions, leg wound pain severity, pain resolution and healing, as well as time to return to baseline walking using a detailed questionnaire. Statistical analysis was conducted to compare outcomes. Results: Both groups showed positive overall outcomes, with no patients requiring further revascularisation. OVH patients required more visits to general partitioners ($p<0.01$) and were more likely to be prescribed antibiotics for their leg wounds ($p<0.01$). EVH patients reported significantly lower leg wound pain ($p<0.0001$), and experienced faster pain resolution and wound healing compared to OVH patients ($p<0.0001$). There was no significant difference in the time taken to return to baseline walking. Conclusion: EVH, even when performed without dedicated assistants, is a superior technique compared to OVH. While graft patency at 24 months post-CABG did not differ, OVH patients experienced significantly higher rates of community care needs, antibiotic usage, severe and prolonged leg pain, and extended leg wound healing times. These findings suggest that EVH can be implemented in small cardiothoracic units without dedicated surgical assistants, offering better outcomes without compromising graft patency.

4:30 pm

Del Nido Cardioplegia versus Blood Cardioplegia in Isolated Coronary Artery Bypass Grafting: a Retrospective Observational Study

Pouya Nezafati

Purpose: Del Nido cardioplegia (DNC) has been shown to be safe in adult cardiopulmonary bypass surgery but its effect on Isolated Coronary Artery Bypass Grafting (Iso-CABG) surgeries is still being reviewed in literatures. Herein, we present the clinical outcome of Del Nido versus Blood Cardioplegia (BC) in patients undergoing Iso-CABG. Methodology: This study included 62 patients who underwent Iso-CABGs with cardiopulmonary bypass (CPB) from January to May 2024 by a single surgeon at Liverpool hospital, Australia; out of which 34 patients received DNC and the remaining 28 patients, BC. Preoperative characteristics, intraoperative data, and postoperative outcomes were compared. Results: Cardiovascular comorbidities and Pre-operative rate of presentation with acute coronary syndrome (ACS) were similar between both groups ($P>0.05$). The aortic Cross Clamp Time (CCT) as well as Cardiopulmonary Bypass (CPB) did not show significant difference between the DNC and BC groups (71.1 ± 18.7 vs. 76.6 ± 22.4; $P=0.142$) with similar number of distal anastomosis between groups ($P=0.122$). DNC group required similar ventilation time, ICU stay and total hospital stay compared to BC group with similar post-operative in-hospital Major

Adverse Cardiovasular Events (MACE) (P>0.05). Moreover, there was a significant higher post-operative Troponin levels in the first 24hrs within BC group compared to the DNC (P=0.0001). Conclusions: The utilization of DNC is associated with comparative operative time and post-operative hospitalization with BC. DNC is associated with better cardiac protection as reflected by lower post-operative troponin leak. Further evaluation for the superiority of DNC over BC needs larger cohort studies.

4:35 pm
Occurrence of Saphenous Vein Graft Failure Increases Risk of Postoperative Non-ST Segment Elevation Myocardial Infarction
Christopher Siderakis
Purpose: The association of postoperative myocardial infarction with occurrence of arterial or venous coronary graft failure remains unclear. Methodology: Patients underwent predominantly symptom-indicated conventional or coronary CT angiography at the Royal Melbourne Hospital following coronary bypass surgery, with only the most recent angiogram assessed. Patients either received total arterial revascularisation (TAR) with internal mammary artery (IMA) or radial artery (RA) grafts, or they had at least one saphenous vein graft (SVG) with or without concomitant arterial grafts, referred to as non-TAR. The effect of arterial and venous graft failure on incidence of non-fatal non-ST segment elevation myocardial infarction (NSTEMI) was analysed with multivariate binary logistic regression . Results: A total of 979 patients were included in the study, of which 742 (75.8%) received symptom-indicated angiography at 8.9±5.9 years postoperative. Furthermore, 691 patients received TAR with 3.0±1.0 (1-7) arterial grafts, and 288 patients received non-TAR with 1.3±0.6 (1-4) SVG. From 173 TAR patients who had at least one arterial graft failure, 32 (18.5%) presented for angiography with NSTEMI. From 518 TAR patients without arterial graft failure, 100 (19.3%) presented with NSTEMI. Occurrence of arterial graft failure had no effect on the incidence of NSTEMI presentation in TAR patients, hazard ratio (HR)=0.9; (95% confidence interval (CI)=0.6-1.4; p=0.688). From 74 non-TAR patients with at least one SVG failure, 19 (25.7%) presented with NSTEMI. From 214 non-TAR patients without SVG failure, 24 (11.2%) presented with NSTEMI. SVG failure was associated with increased risk of NSTEMI presentation in non-TAR patients, HR=2.9 (95% CI=1.4-6.1; p=0.004). Conclusions: The occurrence of SVG failure presents an increased risk of postoperative NSTEMI. This trend may be explained by a propensity of SVG for late-term failure, whereby ischaemic consequences are thought more prevalent.

4:40 pm
Improving CABG Outcomes: The True Cost of Saphenous Vein Site Infections at a Large Australian Centre
Niveditha Yalamarthi
Introduction Surgical site infections following coronary artery bypass grafting (CABG) can lead to severe complications. This retrospective study examines risk factors and complications with a specific focus on the financial impact of saphenous vein harvest (SVH) site infections in patients who underwent CABG at a large Australian centre from Oct 2023 to Mar 2024. Methods A retrospective analysis was conducted on 132 patients who underwent CABG (isolated & combined) with SVG harvest. Data on patient demographics, pre-op conditions, intra-op details, and post-op outcomes were collected and analysed using regression models. Results Among the 132 patients, 8% developed saphenous vein harvest site infections (SVHIs). Regression analysis adjusted for other complications and pre-op risk factors revealed that patients with SVHIs were 1.9 times more likely to be readmitted compared to those without infections (p<0.001). These readmissions and extra nights in hospital due to SVHIs led to an estimated cost burden of $60k+ over the six-months. Discussion SVHIs is a strong predictor for readmission and so, a significant financial burden to hospitals. They also contribute to funding penalties. Preventative strategies such as total arterial revascularisation (37% of CABGs at this centre) and use of minimally invasive techniques like endoscopic vessel harvesting (EVH) must be considered to reduce this risk. Conclusion Despite the rise of total arterial revascularisation, SVGs remain prevalent. However, SVHIs significantly increase readmissions and healthcare costs in CABG patients. Implementing preventive measures and adopting advanced surgical techniques can improve patient outcomes and reduce the financial burden. Larger cohort studies and in-depth cost analyses are warranted to enhance the predictive accuracy. Further research is also crucial to assess the effectiveness of advanced surgical techniques (e.g. EVH) in Australia and New Zealand.

4:45 pm
Radial Artery Conduit Use after Transradial Catheterisation
Yantong Wang

4:50 pm
Adequacy of lymph node dissection during surgical resection of lung cancer at Northern Health
Mathew Muir
Purpose: Sub-optimal nodal staging is common during curative-intent resection of lung cancer. The resection is termed uncertain or R(un) when margins are free of tumour, but the conditions for complete

resection are not fulfilled. Inadequate nodal assessment is the commonest reason for resections being classified as R(un). Studies have demonstrated poorer outcomes in patients with R(un) compared to those with R0. Audit of completeness of lung cancer resections at Northern Health would be an important step towards assuring quality service to our patients. Methodology: We conducted an audit of all patients who have had a curative-intent anatomical lung resection for lung cancer between January 2017 and December 2023 at Northern Health. The operation notes and histopathology reports of included patients were queried for number of mediastinal, hilar and intra-pulmonary nodal stations sampled and other factors that would contribute to a R(un) status. Results: 60 out of 124 resections assessed were judged to be R(un). Inadequate lymphadenectomy was the cause of the R(un) status in 52 (86.6%). There was no relation between R(un) status and approach, tumour histology or lobe resected. There is however an improvement in rates of R(un) over the period from 70% in 2020-2022 to 16% in 2023. Conclusion: Rates of inadequate lymphadenopathy are unacceptably high in the institution. Various measures have been employed worldwide to improve lymphadenectomy. Use of a lymph node retrieval chart during the procedure may be an easy, inexpensive method. We intend to trial this and study its outcome in the future.

3:30 pm - 5:00 pm
SESSION 8B - HEART RULES POSTER PRESENTATIONS

Scientific Session - Default - Laguna 2

3:30 pm
Extracorporeal Membrane Oxygenation Decannulation Strategies: A Systematic Review and Meta-Analysis
Charis Tan
Background: After weaning of extracorporeal membrane oxygenation (ECMO) support, removal of ECMO cannulas is traditionally by open surgical repair (OSR). Advancement of percutaneous vascular closure devices (VCD) presents an alternative to OSR of the femoral vessels with potential reduction in duration of surgery, hospital length of stay and the incidence of wound complications. Methods: A systematic review of Medline and Embase databases was conducted. The primary endpoint was rate of post-procedural complications, namely wound infection and limb ischaemia. The secondary endpoint was in-hospital mortality. Results: A total of 5 retrospective studies, with a total of 486 patients (64% male, n=311) were included in the systematic review and meta-analysis, of which 251 underwent VCD decannulation. Pooled analysis demonstrated that percutaneous closure with VCD is at significantly lower risk of overall complications than surgical repair (OR 3.20; 95% CI 1.84-5.56; P = 0.003), particularly wound infections (OR 5.68; 95% CI 2.26-14.29; P = 0.0002). There was no significant difference between the cohorts in in-hospital mortality. Conclusion: Percutaneous decannulation of ECMO offers a significantly reduced risk of complications. Vascular surgeons in ECMO centres should be trained in the deployment of VCD for percutaneous decannulation of ECMO. Future high-quality research is required to better elucidate the potential for reduced hospital length of stay and duration of surgery.

3:35 pm
Concomitant Epicardial Left Atrial Appendage Closure using Two Methods During Cardiac Surgery: Mid-term Outcome
Pouya Nezafati
Purpose Atrial fibrillation (AF) increases long-term mortality and stroke in patients undergoing cardiac surgery. Oral anticoagulation for AF is associated with high bleeding complication rates. This study represents the intra-operative and one-year post-operative outcome of Atriclip and Stapler for epicardial Left Atrial Appendage Closure (LAAC). Methodology This study includes 84 patients who underwent concomitant LAAC using Stapler in 76 patients and Atriclip in the remaining 8 patients by a single surgeon from January to December 2022 at Wollongong Private Hospital. Patients with pre-existing AF or high CHA2DS2VASc were selected to undergo concomitant LAAC. TOE was used to allow for safe and correct LAAC for both methods. Intra and one-year post-operative mortality and morbidity including stroke and anticoagulation status have been evaluated. Results The mean age of patients was 69.38.76 years with 70 (83%) male. Pre-operative AF was an indication for LAAC in 16 patients, and the remaining scored high in CHA2DS2VASc (3.171.56). LAAC concurrent with Coronary Artery Bypass Grafting (CABG) performed in 77 patients out of which 24 underwent off-pump CABG. The remaining 5 patients underwent concomitant LAAC with valvular and 2 patients with combined valvular and CABG procedures. LAAC was successfully performed in all patients with less than one minute closure time in either methods. One-year follow-up revealed that 74% of patient with pre-operative AF were maintained to be on anticoagulation with no mortality rate at one year mark. Moreover, there were no ischemic/embolic stroke but one minor Gastro-

intestinal bleed in a patient on apixaban for pre-operative AF. Conclusions Application of LAAC with Stapler or AtriClip devices are feasible methods with reasonable rate of anti-coagulation cessation and no mid-term mortality or ischemic/embolic stroke. Further studies, involving a larger number of patients with a control group and longer duration of follow-up are warranted.

3:40 pm
Incidental Aortic Aneurysms: A Multi-disciplinary Approach
Charis Tan

3:45 pm
Atrial Fibrillation Surgery in Australia; are we doing enough?
Frazer Kirk
Purpose: To examine the contemporary burden and surgical treatment of Atrial Fibrillation (AF) in patients undergoing cardiac surgery in Australia and New Zealand. Method: A 10-year retrospective of the ANZsCTS database was performed(2011-2021). Treatment trends were compared to the 2017 AATS guidelines for surgical management of AF (1). Results: 140,680 patients were examined, and the incidence of AF was higher than previously reported (14%, vs 5-11%)(1). Patients with AF were more likely to be older, had lower LVEF, and higher NYHA classification of dyspnoea. AF was intimately associated with mitral valve disease, and the incidence varied between 25-36% depending on the presence of concomitant coronary and/or other valvular disease. 47% of patients with RHD had AF. Despite changes in treatment recommendations, both surgical ablation (Class IIB) and left atrial appendage ligation (LAAL) (IA-IB) were severely underperformed. In the 21077 patients with AF, 77% (16,363) did not have their appendage addressed and 83% (17,532) received no ablative surgery. Only 1.95% of patients with AF, received a combined ablation and LAAL since the AATS guidelines changed. In the last decade only 2,509 patients with AF of 21,077 had complete AF surgery. Conclusion: AF is more common in the Australasian cardiac surgery cohort than previously appreciated. Despite strong recommendations to surgically treat AF during concomitant cardiac surgery, both ablative techniques and LAAL are severely underperformed in Australia/New Zealand. References: 1. Bahdwar V, et al. The Society of Thoracic Surgeons 2017 Clinical guidelines for surgical treatment of atrial fibrillation, Ann Thoracic Surg. 2017;103(1):329-41.

3:50 pm
Short-term surgical outcomes of Octogenarian Patients post cardiac surgery from 2013-2023 in a single South Australian centre
Sam Emmanuel
Purpose: Patients undergoing cardiac surgery are increasingly older, possessing more co-morbidities. This presents an interesting challenge for cardiac surgeons in decision making around which patients would likely do well post-operatively, especially given the limitations of traditional risk-calculators at the extremes of age. Due to current trend towards an older population, Octogenarian patients are representing a larger patient pool than ever before. This abstract seeks to describe short-term post-surgical outcomes in octogenarians undergoing cardiac surgery at a single South Australian centre between 2013-2023. Method: All patients undergoing cardiac surgery at the Royal Adelaide Hospital between 2013-2023 were extracted from the ANZSCTS database. Patients were divided into two groups – younger than 80 and 80 or older. Demographics, intra-operative and post-operative outcomes were compared between the two groups. Results: 5488 patients underwent cardiac surgery between 2013-2023. 463 (8%) were at least 80 years old, and 5025 (92%) were younger than 80. The mean age in the octogenarian group was 83 years (SD 2), whereas the mean age in the younger group was 63 years (SD 11). Octogenarians were less likely to be diabetic, $p<0.01$. However, octogenarians had higher rates of hypertension and cerebrovascular disease, $p<0.01$. In the octogenarian group, 22 patients (5%) died within 30 days of their operation, compared to 94 patients (2%) in the younger group, $p<0.01$. There was no statistical difference in post-operative stroke or haemofiltration. Conclusion: Our retrospective analysis demonstrates that while there was no significant difference in post-operative stroke and haemofiltration rate between the octogenarian and the younger population, 30-day mortality rate was at least double that of the younger group. This highlights the importance of careful decision making in this patient group, especially given that traditional risk calculators, may under-estimate risk for this patient population.

3:55 pm
Carcinoid Heart Disease : 20 years' experience in largest cardio thoracic Centre In australia
Vinod Sharma
Purpose Carcinoid Heart Disease (CaHD) or Hedinger syndrome is the paraneoplastic effect of Neuroendocrine Tumour (NET), formerly known as carcinoid tumour. This study aimed to analyse patient outcomes after valve surgery for CaHD during a 20-year period in our institution to investigate opportunities for improved patient care. Methodology 13 patients who had cardiac surgery in The Prince Charles Hospital

for CaHD between 2003 and 2023 were included in this retrospective observational study. We collected data regarding surgery, NET management, intensive care unit stay, echocardiography and survival. Results Tricuspid valve replacement was required for all patients, 7 had pulmonary valve operated, and none required aortic or mitral valvular surgery. 7 patients (53.8%) had bioprosthetic prostheses and the rest had mechanical valve(s). PFO closure was required for 3 patients. Octreotide infusion commencement 24 hours before surgery became standard practice in 2020. 2 patients required a pacemaker for complete heart block. There was 1 perioperative death, in which the patient was severely symptomatic from carcinoid syndrome. 8 patients had passed away with median survival being 2 years and 8 months. The longest survival is 14 years 5 months and counting, which is the only case without liver metastasis and the origin of NET being the right ovary. NYHA improvement rate was 90.9% (10/11) at one-year follow-up. The right ventricular (RV) remodelling rate at one year was 87.5%, while 37.5% demonstrated improved RV systolic function. Conclusion CaHD is a rare disease. Significant symptomatic and survival benefits can be achieved with surgery. The risk of peri-operative mortality is notable but it can be minimised by pre-operative optimisation of carcinoid disease management and peri-operative care by an experienced multidisciplinary team.

4:00 pm
Hospital Volume and Outcomes of Septal Myectomy for Treatment of Hypertrophic Cardiomyopathy
Yantong Wang

4:05 pm
Results of the CLIP-II Cryopreserved vs. Liquid Platelets phase III randomised controlled trial (NCT03991481)
Julian Smith
Purpose Liquid-stored platelets have a 7-day shelf-life. Cryopreservation extends this to two years, avoiding shortages, preventing wastage, and allowing smaller hospitals to transfuse platelets. However, evidence is limited to preclinical studies and small clinical trials. Cryopreservation might enhance haemostatic activity, but this remains uncertain. Methodology CLIP-II was a double-blind randomised non-inferiority trial conducted between August 2021 and April 2024 in 11 Australian hospitals. High-risk cardiac surgery patients deemed by their clinicians to require platelet transfusion were randomised to up to three units of cryopreserved group O platelets resuspended in plasma or liquid-stored platelets. Additional platelets, if necessary, were liquid-stored platelets. The primary outcome was chest drain blood loss in the first 24 hours after ICU admission. Pilot data showed 202 transfused patients would provide >90% surety that the limit of a 95% confidence interval was not above the set 20% non-inferiority margin if this were the case. Results In total, 388 patients were randomised, of whom 105 received liquid-stored and 98 received cryopreserved platelets. One transfused patient was palliated before outcome data was collected. Patients were well-matched at baseline: mean age 64.3 years; 30% urgent or emergency surgery; median [IQR] Euroscore risk 3.39 [2.16-7.05]. Patients most commonly underwent aortic valve replacement (51%), aortic root surgery (38%), or coronary artery bypass grafts (35%); often a combination of these or other procedures. A median of 2 [1-2] study platelet units were transfused, most commonly (87%) initiated in the operating theatre. Hospital mortality was 6.9%. Full outcome data is currently being validated against source information, and will be available in mid-2024. Conclusion If cryopreserved platelets are non-inferior or superior to liquid-stored platelets, CLIP-II will support registration and widespread use in bleeding patients.

4:10 pm
MITRIS RESILIA Mitral Valve Replacement: A Single Centre's Experience
Molly Gilfillan

4:15 pm
Del Nido Cardioplegia Outcomes: A Propensity Matched Registry Study
Abbey Knox
Purpose: The use of del Nido cardioplegia in adult cardiac surgery is increasing. This study evaluated the use and clinical outcomes of del Nido cardioplegia (DNC) versus hyperkalaemic blood cardioplegia (HKB) in adult cardiac surgery. Methodology: Retrospective, multicentre study across Australia and New Zealand in adult patients undergoing cardiac surgery between 2018 and 2023. Data was obtained from the Australian and New Zealand Collaborative Perfusion Registry (ANZCPR). Since collection of DNC data, 13,809 patients underwent cardiac surgery for coronary artery bypass grafting (CABG), valve replacement and combined valve/CABG surgery. Patients receiving either DNC or HKB were propensity matched 1:1 based upon age, sex, pre-operative left ventricular function, NYHA status, diabetes, respiratory disease, peripheral vascular disease, hypertension, EUROscore, and hospital. A subgroup propensity matched analysis was performed on CABG only patients. Post operative mortality, morbidity and combined morbidity (ventilation greater than 48 hr, post operative renal injury, stroke, return to theatre, and deep sternal wound infection). Results: A total of 3434 propensity matched patients were identified (1717 in each group). The groups were well

matched regarding comorbidities, median age 67 years, 26% female. Death (1.3% DNC vs 1.9% HKB), combined morbidity outcomes (14% vs 13.2%) and acute kidney injury (RIFLE class 1 or greater) were similar in each group (p>0.05). Equivalence testing of main outcomes (death, new renal failure, prolonged mechanical ventilation, stroke and return to theatre) found DNC to be equivalent to HKB (p<0.001). Analysis of CABG only patients found similar results. Conclusion: In propensity matched adult cardiac surgery patients, comparable perioperative morbidity and mortality were observed with the use of del Nido cardioplegia compared with hyperkalaemic blood. There was no significant difference between groups for any post operative outcomes.

4:20 pm
Short and Long-Term Outcomes of Personalised and Non-Personalised Aortic Support: A Single Centre Experience
Louis Fiander
Purpose: External aortic support (EARS) and Personalised External Aortic Root Support (PEARS) are surgical options for ascending aortic and root replacement in aortopathy of various aetiologies. In view of the limited evidence, we aimed to evaluate the short and long-term outcomes between the two procedures. Methods: Between 2014 and 2021, 51 consecutive patients underwent aortic surgery at Waikato Hospital: 22 with PEARS and 29 with EARS. We conducted a retrospective analysis assessing short and long-term outcomes. All analyses were conducted using R software. Results: Preoperative characteristics were similar except for age: EARS: median 67y (IQR 58-74) vs PEARS: median 55y (IQR 37-70); (p=0.025). EARS was mainly associated with aortic valve replacement, while PEARS was associated with procedures involving a competent aortic valve. Intraoperative conversion was 1 (3.5%) for EARS and 2 (9.1%) for PEARS (p=0.42). There was no difference between groups in early mortality: 2 (6.9%) vs 0; (p=0.5), CVA: 1 (3.4%) vs 0; (p >0.9), AKI: 1 (3.4%) vs 0; (p >0.9) and in-hospital length of stay: EARS: median 9 days (IQR 6-15) vs PEARS: median 8 days (IQR 6-12); (p=0.2). Short-term follow-up (< 2 years) showed significant postoperative aortic diameter reductions in both: PEARS: Echo pre-op-median aortic diameter (AD): 5.05cm, (IQR 4.78-5.50); post-op-median AD: 4.35cm, (IQR 4.13-4.78); (p=0.004); CT pre-op-median AD: 5.20cm, (IQR 4.90-5.30); post-op-median AD: 4.75cm, (IQR 4.40-5.05); (p=0.04). EARS: ECHO pre-op-median AD 4.60cm, (IQR 4.15-4.80); post-op-median AD 4.20cm, (IQR 3.80-4.50); (p=0.005); CT pre-op-median AD 4.75cm, (IQR 4.60-4.88); post-op-median AD 4.15cm, (IQR 3.85-4.53); (p=0.015). Long-term survival with median FU time 7.35 years (CI:6.58-8.25) was not different between the groups (p=0.6). Conclusion In these retrospective single-centre analyses, we found no difference in short and long-term outcomes between PEARS and EARS

4:25 pm
Mid-Term Haemodynamic Outcomes In patients suffering Thrombocytopaenia post Perceval Valve Implantation: A Case-Control Matched Retrospective Cohort Study
Jarrod Jolliffe
Background Thrombocytopaenia in the post-operative period in the Perceval Sutureless valve is a well-documented phenomenon. Whilst no significant adverse short-term effects have been recorded, its effects on mid-term valve function are unknown. This study aimed to assess the long-term haemodynamic impacts of thrombocytopaenia on the Perceval Valve. Methods This was a case-control matched retrospective cohort study of all patients who had undergone Perceval Valve implantation in an Australian centre between 2014-2023. Primary endpoints were structural valve degeneration (SVD) at last recorded follow up, mean valve gradient (MVG) and peak valve gradient (PVG). Patients with thrombocytopaenia were compared with to those without thrombocytopaenia. Results 200 patients underwent Perceval Valve implantation in the recorded timeframe, with post-operative platelet data available in 193 patients. 148 (77%) patients experienced post-operative thrombocytopaenia (P<0.001). Mean follow up was 31 months. Pre-operative platelet counts were significantly lower in the thrombocytopaenia group (208.9 vs 278.3 P=<0.001). Other baseline demographics were non-statistically different. SVD was significantly higher in those with thrombocytopaenia compared to those without (6.2% vs 0 p=0.05), although this did not reach significance in the case control cohorts. 5-year freedom from SVD was 68% in those with thrombocytopaenia. MVG at 6 (13.2mmhg vs 11.94mmHg p=0.43), 24 (15.45mmHg versus 11.6mmHg p= 0.24) and 30 (17.2mmHg vs 8mmHg p=0.31) months were higher in the thrombocytopaenia group, although not statistically significant. Conclusion Perceval valve implantation and thrombocytopaenia may be associated with SVD and higher mean valve gradients at mid-term follow up. Larger studies are required to confirm these findings.

4:30 pm
Measured strut neochords for repair of ischaemic mitral incompetence: An ovine study
Dominic Ng
Background: Repair of ischaemic mitral incompetence (IMR) by annuloplasty has a high failure rate as it does not directly address leaflet tethering. Strut chordal cutting can relieve leaflet tethering and improve repair durability but impairs left ventricular (LV) function, as does papillary muscle approximation. Although

the strut chordae are attached to the body of the anterior leaflet, they align with the trigones and are the structural support for the LV, a function which should be preserved. Papillary-annular shortening has been described but its effect on LV function has not been measured. We aimed to show that the placement of neochords between the papillary tips and ipsilateral trigones to correct papillary displacement could be done without impairment of LV contractility. Methods: Healthy Merino ewes underwent a thoracotomy and normothermic beating heart bypass for insertion of 2 strut neochord loops measured to the length of the anterior marginal chordae and secured 4mm below each papillary tip. A prolene suture attached to the trigonal end of each loop exited the heart through the ipsilateral trigone to allow for reversible papillary-trigonal shortening (P-T S) in an off pump beating heart. Sonocrystals were attached to papillary tips and trigones. A conductance catheter was inserted via the LV apex. Results: Eight sheep (50+1.0Kg) had anterior marginal chordal measurements of 17.5+0.3 mm. Sonocrystal measurements confirmed a mean papillary trigonal shortening of 4.8+0.8mm. Echocardiography showed normal mitral function. Cardiac output and stroke volume were significantly impaired, but there were no statistically significant changes in measurements of contractility associated with P-T S. Conclusion: P-T S does not cause LV contractility impairment in a normal ovine heart. The anterior leaflet marginal chordae offer a useful guide for strut neochord length selection. This may be the optimum subvalvular procedure for repair of IMR.

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09 November 2024

7:00 pm - 11:00 pm
MEETING DINNER (TICKETED EVENT)

Catering - Default - Ballroom 3 - Ballroom 2 - Ballroom 1
