theAlfred

D.S. ROSENGARTEN SURGICAL TRAINEE RESEARCH PRIZE 2019

SATURDAY 7TH DECEMBER, 2019

PRESENTED BY MRS CANDICE ROSENGARTEN

& SPONSORED BY

JOHNSON & JOHNSON MEDICAL, AUSTRALIA

ABSTRACT BOOKLET

THE D.S. ROSENGARTEN SURGICAL TRAINEE RESEARCH PRIZE

Mr Sam Rosengarten

The D.S. Rosengarten Surgical Trainee Research is named in honour of David Rosengarten. David learnt his surgery at the Alfred Hospital before undertaking research and Post-Fellowship training in Vascular Surgery at the Royal Postgraduate Medical School, Hammersmith. He returned to the Alfred and held appointments in the Department of Surgery and the Vascular Unit. David was appointed Head of the Vascular Surgery Unit at the Alfred in 1987, the position he held until his sudden death in 1994. David was recognised for his encouragement of research, for an enduring interest in surgical audit and his involvement in registrar training. This prize is his enduring memorial.

D. S. ROSENGARTEN
SURGICAL TRAINEE RESEARCH PRIZE 2019

A SYMPOSIUM WILL BE HELD TO DETERMINE THIS PRIZE
ON SATURDAY 7TH DECEMBER 2019 IN THE

A+ EDUCATION CENTRE (aka AMREP) SEMINAR ROOM
Ground Floor, Alfred Hospital
Commercial Road, MELBOURNE VIC 3004

You are cordially invited to attend and support this most important event

7.30 am	**Breakfast**	
7.45 am	**Introduction and Welcome**	***Mr James Lee***
8.00 am	Smartphone use in ophthalmology: what is their place in clinical practice? • How did you assess whether their claims were validated or unvalidated? • How do you propose improved governance should be developed, and by whom?	Daniel Hogarty
8.12 am	A Series of Contralateral Lymphatic Diversion in Penile Squamous Cell Carcinoma • Can I clarify: The very test that is supposed to improve our ability to target sentinel nodes (SPECT/CT) is prone to false negatives? • So in what context is SPECT/CT useful in the management of penile SCC? • How should the findings here change our practice?	Jonathan O'Brien
8.24 am	A 10-year audit of cataract surgical complications: posterior capsular tears and zonular dehiscence	Harry Yip

	• In your aims, you mentioned that risk factors for both PC and ZD were also investigated. I might have missed them, but apart from consultant vs registrar operating, what were the other risk factors studied?	
8.36 am	Surgically induced weight loss in patients with heart failure and use as a bridge to cardiac • Have you had a chance to compare your cohort of patients in this study to a control group? Eg a group of non-bariatric surgery patients who were medically managed. • How would you select patients for this prior to transplant? Do you think bariatric surgery should take priority to their transplant should a suitable donor become available?	Wilson Yang
8. 48 am	Changes in conduit emptying and function following oesophageal reconstruction: A prospective clinical trial • What are some of the features of a good conduit design?	Yazmin Johari
9:00 am - 9.15 am	**15 minute break**	
9.15 am	Candidate variables of sleeve gastrectomy leak Are you able to share some of the insights? What can actually be changed in constructing the sleeve?	William Catchlove
9.27 am	Management of giant parathyroid adenomas : A 13 case series	Swetha Prabhakaran
9.39am	Improved predictive value of an abbreviated Alvarado score and pre-operative ultrasound in the diagnostic algorithm for acute appendicitis	Fiona Chen
9.51 am	Correlation between the American Shoulder and Elbow Surgeons Society Standardized Shoulder Assessment score (ASES) and the Oxford Shoulder Score (OSS) in patients with shoulder pathology. It is great that you found the 2 scoring system to correlate well. Can you explain to us non-orthopedic surgeons why would you expect the 2 systems not to correlate? Given that	Wesley Teoh

	one would expect that they were both designed to assess shoulder function & pathology?	
10.03 am	Carotid Endarterectomy: Trainee Surgeons and Patient Outcomes This might be controversial to say in an open forum, but did you find any worse outcomes in those operated by trainees? Eg, bleeding, infection, pain?	Nick Johnson
10:15 am	**Morning Tea & Adjudicators Meeting**	
10:30 am	**Present Flowers to Mrs Candice Rosengarte and Jane Barbarakas** **Presentation of Prize (Serpell or Brown)**	Mrs C. Rosengarten

- Welcome everyone
- Enduring memorial of David's spirit of research, training and mentorship
- A celebration of our future generations of surgeon scientists
- The culmination of dedication, hard work and

- Thank you's:
    - Everyone for attending
    - Johnson & Johnson
    - The judges
    - The Presenters
    - Candice – providing the plaque, silver plate and pastry
    - Jane – for doing everything else

- To all the presenters
    - Commend and congratulate you all for your efforts
    - Crème de la crème of the Alfred, you are the future
    - Although only 1 winner, you are all winners

- Final instructions
    - 12 minutes per presenter
    - 3 bells per presentation – first bell 9 minutes, 2nd bell 10 minutes and final bell 12 minutes
    - Questions

Smartphone use in ophthalmology: what is their place in clinical practice?

Daniel T Hogarty MBBS (Hons) BMedSc (Hons), Joseph P Hogarty, Alex W Hewitt PhD FRANZCO

Combined Narrative Review and Cross-Sectional Study

Background and Aims: Many ophthalmology-related smartphone applications are available to the public. It is important for the clinician to understand what is available for their clinical practice, as well as what is available for patients. This study presents the uses of smartphones in ophthalmology and summarizes the current literature.

Methods: A literature search was conducted in April 2019. Two databases were searched: MEDLINE and Scopus. The literature search was conducted independently by two reviewers. Two investigators independently searched the Google Play™ and Apple App Store® in May-June 2019 with search terms: “Visual acuity”, “Low vision”, “Amblyopia”, “Strabismus”, “Squint”, “Lazy eye”, “Cornea”, “Diabetic Retinopathy”, “Anterior segment eye”, “Uveitis”, “Toric”, “Retina”, “Ophthalmoscopy”, “Glaucoma”, “Macular Degeneration”. Each result was independently assessed by reviewing the application information page and recorded if it was relevant to the topic and the inputted search term.
Results: 271 and 170 ophthalmology-related smartphone applications were found in the Google Play™ and Apple App Store® respectively (Google – 240 free, paid price range $1.39 - 199.00/month; Apple – 113 free, paid price range $1.49 - 109.99). There were smartphone applications for testing visual acuity (45 Google; 23 Apple), assisting low vision users (86 Google; 55 Apple) and managing and diagnosing the sequelae of strabismus (45 Google; Apple 30). There were also applications addressing anterior segment (32 Google; 17 Apple) and posterior segment issues (63 Google; 45 Apple). There were many unvalidated claims used for advertising many applications which could result in harm to patients.
Conclusions: A variety of clinical and patient-based ophthalmology smartphone applications are available in the Google Play™ and Apple App Store®. Improved governance of the medical applications will be required to improve patient safety.

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Conflict of Interest: The authors report no commercial or proprietary interest in any product or concept discussed in this article.

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- How did you assess whether their claims were validated or unvalidated?
- How do you propose improved governance should be developed, and by whom?

A Series of Contralateral Lymphatic Diversion in Penile Squamous Cell Carcinoma

Jonathan S O'Brien[1,2], Jiasian Teh[2,3], Nathan Lawrentschuk[3], Justin Chee[1,4]
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[2]Young Urology Researchers Organisation (YURO), Melbourne, Australia
[3]Division of Cancer Surgery, Peter MacCallum Cancer Centre, Melbourne, Victoria, Australia
[4]MURAC Health, East Melbourne, Victoria, Australia

Background and Aims:
Penile squamous cell carcinoma (SCC) is a rare disease that progresses by systematically invading inguinal nodes. Dynamic sentinel lymph node biopsy (DSLNB) is a minimally invasive standard of care for evaluating inguinal lymphadenopathy. The introduction of hybrid single-photon emission computed tomography (SPECTCT) has increased the accuracy of this procedure by overlaying lymphoscintigraphy with functional detail.
Sensitivity of DSLNB can be impaired if extensive lymphadenopathy at a sentinel node completely occludes drainage to the basin. Collateral normal lymphatics subsequently divert tracer away from the pathological nodes to the contralateral groin, leading to false negative biopsy and under staging of disease.

Methods:
Retrospective medical records were evaluated from 57 patients treated at 8 metropolitan hospitals within Victoria, Australia. Eligibility criteria were all men with histologically proven penile SCC who underwent conventional pre-operative staging including plain CT, ^{18}FDG-PET CT and hybrid SPECT/CT prior to bilateral lymph node sampling. Positive lymph node malignancy was assessed in the context of a negative SPECT/CT result.

Results and Conclusions:
Three patients fit the criteria for lymphatic re-routing. Two patients demonstrated a pattern whereby the sentinel node identified by SPECT/CT was negative whereas the unidentified node basin was positive for metastatic infiltration. Examination and preoperative ultrasound with fine-needle aspiration cytology may identify nodes with considerable tumor invasion. This study demonstrates that groins that fail to uptake radiotracer must elicit a high degree of suspicion and should be monitored closely with a low threshold for offering radical lymphadenectomy.

- Can I clarify: The very test that is supposed to improve our ability to target sentinel nodes (SPECT/CT) is prone to false negatives?
- So in what context is SPECT/CT useful in the management of penile SCC?
- How should the findings here change our practice?

Title: A 10-year audit of cataract surgical complications: posterior capsular tears and zonular dehiscence

Background and Aims

To assess the rates of posterior capsular (PC) tears and zonular dehiscence (ZD) noted during cataract surgery. Secondary aims included the comparison of the rates of PC tears between consults and trainees, and the assessment of re-intervention rate and visual outcomes in patients with ZD. Risk factors for both PC tears and ZD were also investigated.

Methods

A retrospective audit of all patients who underwent cataract surgery at The Alfred hospital over a 10 year period (July 2008 – June 2018). All eyes with PC tears and ZD were enrolled in the study.

Results

During the 10-year period, 133 PC tears (rate 0.1%) were recorded in 13,124 phacoemulsification cases. Consultants performed 40.7% of all cases with a PC tear rate of 1.2%, while registrars performed 59.3% of cases, with a PC tear rate of 0.9%. In cases with PC tears, best corrected visual acuity (BCVA) of 6/12 or better at 3 months post-operatively was achieved in 83 eyes (78.3%).

83 cases of ZD were identified from 13,124 cases (rate 0.63%). In eyes with ≤3 clock hours of ZD, the rate of capsular tension ring (CTR) insertion was 66.7%, BCVA of 6/12 or better at 3 months was achieved in 72.6% cases, and the reintervention rate was 9.5%. In eyes with >3 clock hours, the rate of CTR insertion was 27.7%, BCVA of 6/12 or better at 3 months was 54.5% and the reintervention rate was 36.%

Conclusions

Incidence rates of PC tears and ZD at the Alfred were comparable to previous studies. Consultant and trainee PC tear rates were similar. ZD of >3 hours confers suboptimal visual outcomes and higher re-intervention rate.

- In your aims, you mentioned that risk factors for both PC and ZD were also investigated. I might have missed them, but apart from consultant vs registrar operating, what were the other risk factors studied?

Surgically induced weight loss in patients with heart failure and use as a bridge to cardiac transplantation

Yang TWW[1,2], Johari Y[1,2], Burton PR[1,2], Earnest A[3], Balalis GL[1], Shaw K[1,2], Hare JL[4], Brown WA[1,2]

[1]Oesophagogastric Bariatric Surgery Unit, The Alfred Hospital, Melbourne, [2]Department of Surgery, Monash University, Melbourne, [3]Department of Epidemiology and Preventative Medicine, Monash University, Melbourne, [4]Department of Cardiology, The Alfred, Melbourne

Background and Aims:

Obesity and cardiac failure are globally endemic and increasingly intersecting, with obesity present in approximately one-third of heart failure patients. Bariatric surgery may improve cardiac function via several pathophysiological mechanisms and act as a bridge-to-transplantation. Currently, data are still limited hence this study aimed to identify effects of bariatric surgery on heart failure patients and ascertain its role in relation to cardiac transplantation.

Methods:

A prospectively collected database identified heart failure patients who underwent bariatric surgery between 1/1/2008 and 31/12/2017. Patients were followed up 12 months post-operatively. Cardiac investigations, functional capacity, cardiac transplant candidacy and clinical variables including age, body mass index (BMI) and comorbidities were recorded.

Results:

Twenty one patients (15 males, 6 females), mean age 48.7±10, BMI 46.2 (37.7-85.3) underwent surgery (Gastric Band (18), Sleeve Gastrectomy (2), Biliopancreatic Diversion (1)). At 12 months follow-up, there was significant weight loss of 26.0kg (5.0-78.5, $p<0.001$), significant improvement of left ventricular ejection fraction (LVEF) (10.0±11.9%, $p<0.001$) and significant reduction of 1 New York Heart Association classification (0-2, $p<0.001$). Univariate

and multivariate models delineated the absence of atrial fibrillation and pre-operative BMI < 49 as significant predictors (adjusted R-square 69%) for improvement of LVEF. One patient subsequently underwent a heart transplant, and two patients were removed from the transplant waitlist due to improvement in functional status and LVEF.

Conclusions:

Bariatric surgery is safe and highly effective in obese patients with heart failure with substantial improvements in cardiac function and symptoms. A threshold pre-operative BMI of 49 and absence of atrial fibrillation may be significant predictors for improvement in cardiac function. Furthermore, there is certainly a role for bariatric surgery to act as a bridge-to-transplantation or even ameliorate this requirement.

- Have you had a chance to compare your cohort of patients in this study to a control group? Eg a group of non-bariatric surgery patients who were medically managed.
- How would you select patients for this prior to transplant? Do you think bariatric surgery should take priority to their transplant should a suitable donor become available?

Changes in conduit emptying and function following oesophageal reconstruction:

A prospective clinical trial

Authors: *Yazmin Johari[1,2], Helen Yue[3], Rizky Rachmadi[1], Geri Ooi[1,2], Julie Playfair[1], Cheryl Laurie[1], Geoff Hebbard[4], Peter Nottle[1,] Paul Burton[1,2], Paul Beech[3], Wendy Brown[1,2]*

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3. *Department of Nuclear Medicine, The Alfred Hospital, Melbourne, Australia*
4. *Department of Gastroenterology, Royal Melbourne Hospital and University of Melbourne*

Background: Markedly increasing incidence of oesophageal cancer and improved outcomes has mandated attention on function of the transposed gastric conduit as a key mediator of quality of life and sometimes severe gastro-intestinal symptoms.

We hypothesised that progressive recovery of conduit motility and propulsive function would correlate with improvements in gastrointestinal symptoms and quality of life. Additionally, these measures would serve as reliable diagnostic tests in patients with adverse symptoms.

Methods: In these prospective repeated measures clinical trial post-oesophagectomy patients undertook protocolised nuclear scintigraphy imaging assessing intra-conduit transit and emptying along with SF-36 quality of life assessment and structured gastro-intestinal symptom scores at 6, 12 and 24 months. Cross sectional analysis used intra-conduit manometric measures and real time concurrent fluoroscopy. Further analysis constructed diagnostic thresholds from within trial findings and separately recruited patients with severe symptoms

Results: There were 28 patients: Mean age 66.0±9.5 years, 79% male, pre-operative BMI 27.6±6.4 kg/m^2. Reflux and physical component score (SF-36) improved over time improved (*p=0.02* and *p=0.03*). Median conduit emptying half time was prolonged and did not change (266.0±360.25min at 6months, 205.5±782.8min at 12months, 237.5±549.3min at 24months, *p=0.83*). Significant reliance on gravity-mediated emptying was observed; 50.5% vs. 49% vs. 45.9%, *p=0.851*). Intraluminal pressurisations were not peristaltic and did not correlate with trans-pyloric flow (R=-0.8). Patients with severe symptoms demonstrated absent gravity mediated drainage.

Conclusion: Improvement in gastrointestinal symptoms and quality of life after 12 months unexpectedly occurred without improvement in emptying. Markedly delayed transit was observed post-oesophagectomy with reliance on gravity mediated drainage without peristalsis. Loss of gravity mediated drainage was the hallmark of conduit failure. These data provide thresholds for diagnostic tests and inform improvements in conduit design.

- What are some of the features of a good conduit design?

Title: Candidate variables of sleeve gastrectomy leak

Authors: William Catchlove[1,2], Sam Liao[3], Gillian Lim[1], Paul Burton[1,2], Wendy Brown[1,2]

1. Centre for Obesity Research and Education (CORE), Monash University, Victoria, Australia

2. Department of Oesophago-gastric and Bariatric Surgery, The Alfred Hospital, Melbourne, Australia

3. Department of Mechanical and Aerospace Engineering, Monash University

Background and aims: Staple-line leak is a major cause of morbidity after sleeve gastrectomy. Leaks occur predominately adjacent to the oesophago-gastric junction. Mechanisms postulated to initiate and perpetuate leaks include: watershed ischaemic factors, intraluminal hyper-pressurisation, and inequitable shearing forces.

We aimed to characterise vascularity, intraluminal pressurisation, and strain on the stomach.

Method:

i)Manometry of sleeve gastrectomy patients were compared to obese controls in dry swallows, and end-expiration during fasting.

ii)Finite-element analysis simulated stress along the staple line with tensile ultimate strength of 0.67MPa, strain at maximum stress 0.933. Oesophageal displacement of 3.5cm was used to simulate a dry swallow.

iii) Specimens were harvested from resected stomach along the staple line measuring vessel diameter and density.

Results:

Controls(n=10) were compared to sleeve gastrectomy patients(n=14). Demographics: age 40.5+/-17.7years vs.42.5+/-15.7(p=0.22), 90% female vs.78.5%(p=0.615), weight 122.3+/-21.0kg vs.110.6+/-118.9(p=0.771), BMI 48+/-11.7kg/m2 vs.38.3+/-3.8(p=0.023).

Compared to controls peak swallow isobaric intragastric pressures were elevated 14.9+/-4.0mmHg vs.36.3+/-3.4(p=0.0005). There was no difference in the intragastric/mid-oesophageal

pressure ratio -0.925+/-4.7mmHg vs.-8.5=/-3.9 (p=.137), nor in peak end-expiration intragastric pressure 13.34+/-9.3mmHg vs.10.6+/-4.9(p=0.2152). The intragastric/mid-oesophageal ratio was reduced in sleeve patients -1.26+/-0.73mmHg vs.-4.56+/-0.619(p=0.002).

Simulations during high-pressure swallows and oesophageal shortening demonstrated peak stress acting on the proximal staple-line.

Anterior:GOJ 69.87+/-13.7vessels per 10.100x and 0.193+/-0.036mm/50vessels, mid-body 51.4+/-17.9 and 0.205 +/- 0.023, antrum 53.47+/-9.64 and 0.193+/-0.025. Posterior:GOJ 63.8+/11.23 and 0.252+/-0.056, mid-body 53.7+/-16.9 and 0.241+/-0.051, antrum 0.205+/-0.040. There was no difference between the arteriole diameter(p=0.301) or density(p=0.206).

Conclusions:

We have demonstrated high intraluminal pressurisation during swallowing and fasting. Simulations suggest that maximal strain is transmitted to the proximal stomach. Analysis of vascularity suggest this is a less likely driver. Our data provides insights into constructing sleeve and developing strategies to treat and prevent leaks.

Are you able to share some of the insights? What can actually be changed in constructing the sleeve?

Management of giant parathyroid adenomas: A 13 case series

Prabhakaran S[1], Lee JC[1]

Introduction

Parathyroid adenomas (PA) are the predominant cause of hypercalcaemia, and surgical removal of the adenoma is considered curative. The average PA weighs less than 1g. There have only been isolated case reports of giant PAs weighing greater than 10g (GPA^{10}) to date. This case series aims to explore the unique challenges they pose in surgical planning.

Methods

Anonymised patient data was obtained from the Monash University Endocrine Surgery Unit database, which contains data from 11 hospitals. This was analysed in terms of demographics, clinical and biochemical characteristics, radiological and histopathology findings, and operative technique.

Results

A total of 13 eligible cases were identified between 2007 and 2017. The mean age was 61, with higher mean ages in the 9 females (66). Several patients had multiple symptoms, including three in parathyroid crisis at diagnosis. Pre-operative calcium and parathyroid hormone (PTH) levels were significantly elevated. Pre-operative imaging with neck ultrasounds and Tc99m-sestamibi scintigraphy localised a parathyroid adenoma in only 10 and 12 patients respectively. Only four patients underwent successful minimally invasive parathyroidectomy (MIP). The median GPA^{10} weighed 14g, with the largest weighing 62g. GPA^{10}s were equally likely to be found in the inferior or superior parathyroid. Post-operative

calcium and PTH levels returned to normal within a week, and within 3 months respectively. There were no nerve injuries or recurrences in any patient.

Conclusion

GPA[10]s are rare and their management is complex. Despite the size of these glands, concordant preoperative imaging is not always achieved, and few patients are appropriate for MIP.

Abstract

Improved predictive value of an abbreviated Alvarado score and pre-operative ultrasound in the diagnostic algorithm for acute appendicitis

Shaneel Bappayya, Fiona Chen, James Lee

Background:

Appendicitis is one of the most common causes of abdominal pain and carries a lifetime risk of approximately 7%. The diagnosis of appendicitis remains primarily a clinical one, especially in the younger population. Several clinical scoring systems have been proposed in an attempt to improve negative appendicectomy rates (NAR). In this retrospective case-control study, we evaluate the diagnostic value of the Alvarado score and an abbreviated 3-point test in combination with ultrasound as a diagnostic aid for acute appendicitis.

Methods:

Patients who underwent appendicectomy at The Alfred between 01/07/2012 and 30/06/2017 were included. The Alvarado score was calculated retrospectively from patient admission notes. Results of pre-operative ultrasound scans were recorded. Appendicitis identified on histopathology was interpreted as gold standard. Statistical analysis was performed using IBM SPSS Statistics V26.

Results:

NAR in this cohort of 1194 patients was 18.7%, with 12.0% in the male group and 26.1% in the female group. Positive Predictive Value (PPV) of the Alvarado Score was 68.4% in band 0-4, 79.0% in band 5-6 and 90.3% in band 7-10. PPV was greater in the male cohort compared to the female cohort. In the female group, PPV of the Alvarado score in band 5-6 was 71.4%. NPV of a negative US in band 5-6 was 56.1%. Logistic regression identified migration of pain, leukocytosis and leukocyte left shift as statistically significant predictors for appendicitis; these

parameters were used to formulate a 3-point test. In the female group, using the 3-point test carried a sensitivity of 92.1% and a specificity of 28.7%. NPV of a negative US with a negative 3-point test was 82.1%.

Conclusion:

The 3-point test when used in combination with ultrasound may have diagnostic value in the female group in helping to exclude appendicitis.

Abstract Title

Correlation between the American Shoulder and Elbow Surgeons Society Standardized Shoulder Assessment score (ASES) and the Oxford Shoulder Score (OSS) in patients with shoulder pathology.

Authors

Wesley Teoh

Harry Clitherow

Corey Scholes

Background and Aims

The American Shoulder and Elbow Surgeons Society score (ASES) and the Oxford Shoulder Score (OSS) are two instruments commonly used to assess patient shoulder function. The choice of outcome instrument used in studies varies based on clinician's preference, with a clear geographical variation demonstrated in published literature. This creates difficulties when attempting to compare the results of studies conducted in different countries. Additionally, requiring patients to complete multiple questionnaires at each follow up time point can negatively impact data quality. This study aims to assess the comparability of the two instruments by examining the correlation between them.

Method

Patients who presented with shoulder pathology were identified from the registry of a shoulder and elbow specialist orthopaedic practice. Linear regression analysis was performed on the ASES and OSS total scores, and their respective pain and function subscores.

Result

1162 paired ASES and OSS scores were collected from 1503 patients. Total ASES and OSS scores exhibited significant correlation with an adjusted R^2 of 57.9% ($P<0.001$). Their function subscores also demonstrated significant correlation, with an adjusted R^2 of 50.1% ($P<0.001$). The pain subscores however, demonstrated a poor fit with an adjusted R^2 of 2.4% ($P<0.001$).

Conclusion

Total ASES and OSS scores, and their functional subscores, correlate well with each other. This finding will allow a more informed comparison of studies that have used the different instruments as their outcome measure. The findings will also aid study design, as they suggest that the number of different outcome tools required from each participant can be reduced. This, in turn, may reduce respondent burden and increase the quality and validity of the data. Further research into the correlation between the pain subscores is warranted.

It is great that you found the 2 scoring system to correlate well. Can you explain to us non-orthopedic surgeons why would you expect the 2 systems not to correlate? Given that one would expect that they were both designed to assess shoulder function & pathology?

Title: Carotid Endarterectomy: Trainee Surgeons and Patient Outcomes

Authors

Nicholas W Johnson MBBS, Nicholas R Smoll MBBS, Christianne Tan MBBS, Christopher E Brooks MBBS

Author Affiliation

Peninsula Health, Alfred Health, Monash University

Background

In Australia and New Zealand, more than 2000 carotid endarterectomies are performed annually. The major morbidities arising from this procedure are post-operative stroke, cranial nerve injury and death. Carotid endarterectomy surgery is a key component of the vascular surgical training program.

Objective

Our aim was to assess the impact of having a surgical trainee perform a major component of a carotid endarterectomy on the post-operative rates of stroke, cranial nerve injury and mortality.

Method

We performed a retrospective cohort study of vascular surgical patients undergoing carotid endarterectomy, with data obtained from the Australasian vascular audit database between January 2010 to December 2014. The dataset comprised of 6528 carotid endarterectomies performed during this time. The collected data was stratified into 2 categories - consultant-led cases, and secondly those in which trainee surgeons performed at least a major component of the surgery under consultant supervision The results were analyzed for differences in post-operative stroke, cranial nerve injury and inpatient mortality. Comparison was made using multivariate analysis, adjusting for potentially confounding co-variables.

Results

On multivariate analysis, there was no statistically significant difference in the rates of post-operative stroke (OR 0.876 CI 0.566-1.1356 p=0.55), cranial nerve injury (OR 0.0683 CI 0.387-1.207 p=0.18) or inpatient mortality (OR 0.784 CI0.289-2.127 p=0.6) between the consultant led cases and those with surgical trainees performing a major component of the procedure under supervision.

Conclusion

Having surgical trainees perform components of carotid endarterectomies under supervision is not associated with an increased rate of post-operative stroke, cranial nerve injury of mortality.

This might be controversial to say in an open forum, but did you find any worse outcomes in those operated by trainees? Eg, bleeding, infection, pain?