

**D.S. ROSENGARTEN
SURGICAL TRAINEE RESEARCH PRIZE 2018**

SATURDAY 1ST DECEMBER, 2018

PRESENTED BY MRS CANDICE ROSENGARTEN

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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.



TheAlfred

D. S. ROSENGARTEN SURGICAL TRAINEE RESEARCH PRIZE 2018

A SYMPOSIUM WILL BE HELD TO DETERMINE THIS PRIZE

ON SATURDAY 1ST DECEMBER 2018 IN THE
AMREP SEMINAR ROOM

Ground Floor,
Alfred Hospital
Commercial Road, MELBOURNE VIC 3004

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

8.00 am	Breakfast	
8.25 am	Introduction and Welcome	<i>Mr. Charles Milne</i>
8.30 am	Adrenal incidentaloma follow-up is influenced by patient, radiologic, and medical provider factors: A review of 804 cases.	Evan Williams
8.45 am	Wedge versus core biopsy for the evaluation of nonalcoholic fatty liver disease in bariatric surgical patients	Geri Ooi
9.00 am	A Comparison of Temporary and Permanent RVAD Support in LVAD Recipients	James Farag
9.15 am	Matched Comparison of Laparoscopic Adjustable Gastric Banding Versus Sleeve Gastrectomy	Yazmin Johari
9.30 am	The recurrent laryngeal nerve thickness correlates to the size of the thyroid gland	Kathleen Soeyland
9.45 am	High Endotracheal Tube Cuff Pressures in Thyroid Surgery: A Potential Factor in Recurrent Laryngeal Nerve Injury	James Taylor
10.00 am	Morning Tea & Adjudicators Meeting	
10.30 am	Presentation of Prize	Mrs C. Rosengarten

D. S. ROSENGARTEN SURGICAL TRAINEE RESEARCH PRIZE 2018

Summary abstract

Adrenal incidentaloma follow-up is influenced by patient, radiologic, and medical provider factors: A review of 804 cases

**Evan Williams, Dominic Maher, Simon Grodski, Jonathan W Serpell,
James C Lee**

Introduction

The incidence of adrenal incidentalomas on CT is reported to be 4 - 7%. The majority are benign, although some are large, functional, or malignant and may require surgery.

Aims

This study aimed to determine the pattern of adrenal incidentaloma follow-up in a level 1 trauma centre, focusing on the factors that influence whether follow-up is facilitated.

Methods

Patients with computed tomography-detected adrenal incidentalomas between January 2010 and September 2015 were included. A keyword search identified case files, which were reviewed for demographic characteristics, managing unit, imaging indication and findings, and follow up arrangements. Statistical analysis was performed using Stata SE.

Results

A total of 38,848 chest and abdominal computed tomographic scans were performed in the study period, 804 patients with adrenal incidentalomas met inclusion criteria (mean age 65, 58% male). The mean size of adrenal incidentaloma was 23 mm. Follow-up was organized in 30% of cases and was more likely to occur in younger patients (mean age 62 vs 66, $P < .001$); in larger lesions (mean size 26 mm vs 21 mm, $P < .001$); if the computed tomographic scan suggested follow-up ($P < .001$); or suggested a diagnosis ($P < .001$). Follow-up arrangements were most likely to be made by the Trauma Unit (39%, $P = .01$).

Conclusion

This study highlights a frequent incidental finding that potentially conceals serious surgical pathology. Follow-up is influenced by patient, radiologic, and medical provider factors and given follow-up is often overlooked this indicates avenues to improve patient care.

Wedge versus core biopsy for the evaluation of nonalcoholic fatty liver disease in bariatric surgical patients

Geraldine J Ooi^{1,2}, Yazmin Johari^{1,2}, Andrew Clouston^{3,4,5}, Catriona McLean⁶, Cheryl Laurie¹, William W Kemp⁷, Stuart K Roberts⁷, Wendy A Brown^{1,2}, Paul R Burton^{1,2}

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BACKGROUND: Liver biopsy remains the gold standard for diagnosing nonalcoholic fatty liver disease (NAFLD). Liver heterogeneity, sampling and interobserver variability can affect the reliability of biopsy results. This study aimed to compare histological variability of core and wedge liver biopsies in obese patients.

METHODS: We recruited bariatric surgical patients. Intraoperative core biopsies were taken from left and right lobes, and a wedge biopsy was taken from the left. Agreement of histological findings between biopsy sites was evaluated.

RESULTS: There were 91 participants (72.2% female), mean age 46.8 years, body mass index 45.9kg/m². Good agreement was seen in overall presence of NAFLD and NASH between biopsy sites ($\kappa=0.609-0.865$, $p<0.001$). Assessment of individual components (steatosis, inflammation, ballooning) were less concordant ($\kappa=0.386-0.656$, $p<0.01$). Fibrosis showed particularly poor agreement between biopsy sites ($\kappa=0.223-0.496$, $p<0.01$). Core biopsies had greater agreement across all domains, compared to core versus wedge biopsy (NASH diagnosis $\kappa=0.838$ for cores versus $\kappa=0.615-0.644$ for core and wedge). Notably, there was no clear up or down grading of NAFLD components with either wedge or core biopsy.

CONCLUSION: Overall diagnosis of NAFLD or NASH show good agreement between biopsies, but components, particularly fibrosis, can vary significantly. When performing histologic assessment of NAFLD, clinicians should consider biopsies from multiple locations, to better reflect disease severity. Furthermore, longitudinal assessment should ideally be performed by a single histopathologist with direct comparison to previous biopsies. These data have important implications in fibrosis assessment and are relevant in the interpretation of efficacy of investigational therapies.

246 words

Title: A Comparison of Temporary and Permanent RVAD Support in LVAD Recipients

Authors: James Farag, Mr Adam Zimmet, Prof David McGiffin, Prof Silvana Marasco

Introduction: Right ventricular failure (RVF) occurs in 30-50% of LVAD recipients and is a major cause of mortality and morbidity.

Aim: We aim to investigate differences in outcomes between temporary and permanent RVADs.

Methods: A retrospective study was performed on patients at the Alfred who received a LVAD with either a temporary or permanent RVAD (2011-2018). Pre- and post-operative data was collected from medical records and the ANZSCTS database.

Results: 32 consecutive LVAD patients required mechanical RVAD support. 22 patients had tRVADs whilst 10 patients had pRVADs inserted primarily. Worse RVF severity on echocardiography was the only significant pre-operative difference between the two groups ($p=0.016$). 27 patients survived to discharge, and there was no significant difference in survival between temporary and permanent RVADs (81.8% vs 90%, respectively; $p=0.429$). Patients treated with tRVADs were more likely to be readmitted with heart failure than those with pRVADs (OR 2.29; $p=0.033$), and also more likely to receive renal replacement therapy post-operatively (50% vs 10%, $p = 0.044$). Of the 22 tRVAD patients, 5 (22.7%) were converted to BiVADs. The severity of RV failure did not improve following temporary RVAD insertion to removal ($p=0.931$).

Conclusion: Temporary RVADs show no benefit in immediate survival, and have a higher number of renal complications, and readmissions for heart failure. Use of pRVADs may have safer and more efficient outcomes.

Matched Comparison of Laparoscopic Adjustable Gastric Banding Versus Sleeve Gastrectomy

Yazmin Johari^(1,2), Geri Ooi^(1,2), Shourye Dwivedi⁽²⁾, Paul Burton^(1,2), Cheryl Laurie⁽²⁾, Kalai Shaw⁽¹⁾, Wendy Brown^{(1,2)*}, Peter Nottle^{(1)*}

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- Co-senior authors

Abstract

Background

Laparoscopic sleeve gastrectomy (LSG) and laparoscopic adjustable gastric band (LAGB), are the two most commonly performed bariatric surgeries. Objective comparisons are urgently required to better inform surgeons' and patients' decision making and aid in optimally allocating scarce healthcare resources.

Aims

To determine differences in 5-year outcomes between LAGB and LSG across a broad range of measures.

Methods

Matched primary LSG or LAGB were recruited. Data was collected from prospectively maintained online bariatric database, medical records and patient completed questionnaires.

Results

Patients (n=520) were well matched (LAGB vs. LSG; age 41.77±11.17 vs. 42.66±11.69, p=0.37; male 32.4% vs. 30.2%, p=0.57; baseline weight 131.2±30.5 vs 131.0±31.1kg, p=0.94). LAGB attended more follow up visits (21 vs. 13, p<0.05). Mean total body weight loss were 27.7±11.7% vs. 19.4±11.1%, LSG vs. LAGB, p<0.001. LAGB had more complication (21.4% vs. 4.9%, p<0.001), re-operations (89 vs. 13, p<0.001) and readmissions (87 vs. 32, p<0.001). Total hospital bed days was significantly higher post LSG compared to LAGB (5.2±10.9 vs. 1.5±2.2 days, p<0.001). LSG patients reported better quality of life (Sf-36 Physical summary score 54.7±7.9 vs 47.7 ± 10.8, p=0.002) and higher overall satisfaction (9.2±1.9 vs. 8.4±1.6, p=0.035). LAGB patients experienced more bothersome regurgitation (1.2±1.2 vs. 0.7±1.1, p=0.032) and dysphagia (2.0±1.3 vs. 1.3±1.6, p=0.009).

Conclusion

Weight loss and overall satisfaction were greater with LSG. LAGB had more re-operations and bothersome symptoms. LSG had higher total hospital days, driven by rare severe complications. These data provide a framework for counselling patients and significant value in informing allocation of resources.

The recurrent laryngeal nerve thickness correlates to the size of the thyroid gland

K Soeyland, J Lee, J Serpell

Introduction

Recurrent laryngeal nerve (RLN) palsy is a serious complication of thyroidectomy. Recurrent laryngeal nerve size has been identified as an independent risk factor for RLN palsy in both thyroid and oesophageal surgery. We aimed to determine if the RLN size is greater in the setting of large goiters, with the hypothesis that the RLN size correlated to goiter size and this may partially explain why increased thyroid size is not correlated with greater risk of nerve palsy.

Methods

In this cross-sectional study, data for patients undergoing thyroid surgery were prospectively recorded between 2009 and 2015. The RLN width was measured at the time of surgery. Patients were grouped into *Large* and *Small* goiter groups by 3 different variables – a maximal dimension > 60 mm; weight > 75 g; and volume > 100 ml. The mean RLN widths were compared.

Results

During this period, a total of 4105 patients underwent thyroidectomy, the RLN palsy rate was 3%. There was no difference in RLN palsy rate between patients undergoing thyroidectomy for multinodular goitre or completion thyroidectomy (i.e. essentially normal lobes) (2.8% v 1.4%, $p=0.51$). Nerve diameter was measured in 336 patients, resulting in 415 nerves at risk. The RLN diameter was greater in association with a large goiter when categorized by maximal dimension, weight, or volume ($p < 0.001, 0.009, 0.005$ respectively). On subgroup analysis, multinodular goiters ($n=231$) were significantly larger than lobes removed for completion thyroidectomy ($n=8$) ($p<0.001$), however in this group there was no significant difference in mean nerve size based on pathology alone (1.68mm v. 17.1mm, $p=0.988$).

Conclusion

Our findings suggest that there is a positive correlation between nerve size and lobe size, and that larger thyroids are not more at risk of nerve injury. The findings of this study add to our previous finding that the RLN is likely to be thin in younger patients and patients with lower body mass index. Knowledge of this may help alert surgeons to be aware of a thin and fragile RLN in a patient with a non-enlarged thyroid lobe, young age and low BMI.

Abstract: High Endotracheal Tube Cuff Pressures in Thyroid Surgery: A Potential Factor in Recurrent Laryngeal Nerve Injury

Dr James Taylor

Supervisor: Professor Jonathan Serpell

Introduction

Recurrent laryngeal nerve (RLN) palsy is an uncommon but highly morbid complication of thyroid surgery. The majority of vocal cord palsies from thyroid surgery are not associated with transection of the RLN and the causative factors often remain unclear. Several factors including traction, ischaemic and thermal injury to the nerve may have a role in development of vocal cord palsy. In this study we investigate the effect of high endotracheal tube (ETT) cuff pressure on RLN palsy in thyroidectomy.

Methods

A prospective cohort study was performed on patients undergoing elective total thyroidectomy or hemithyroidectomy at a single metropolitan endocrine surgery unit. The participants underwent continuous intraoperative ETT cuff pressure monitoring and continuous intraoperative RLN monitoring. For each hemi-thyroid, ETT pressure and ipsilateral RLN nerve conduction were recorded at ten defined stages of the operation. Reduction of nerve signal amplitude of >50% was defined as an increased risk of RLN nerve palsy.

Results

Between March 2018 to October 2018, 27 patients undergoing total or hemithyroidectomy underwent ETT cuff pressure monitoring and continuous intraoperative RLN monitoring. 39 recurrent laryngeal nerves were monitored in the study. The mean baseline ETT cuff pressure was 17.4mmHg. ETT cuff pressure increased during anteromedial rotation of the thyroid gland, mean = 19.8mmHg ($p=0.03$). ETT cuff pressure was greater during the cases with a 50% reduction in RLN conduction amplitude, 19.9mmHg ($p=0.04$).

Conclusion

These preliminary results highlight that ETT cuff pressure is not constant during thyroid surgery and that high ETT cuff pressures may be associated with decreased nerve conduction.

Word count (excluding title and headings): 249