D.S. ROSENGARTEN
SURGICAL TRAINEE RESEARCH PRIZE 2021

SATURDAY 4TH DECEMBER, 2021

ABSTRACT BOOKLET

CHAIR
A/PROF JAMES LEE

D. S. ROSENGARTEN
SURGICAL TRAINEE RESEARCH PRIZE
2021

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MR DAVID 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.

The Accuracy of Acetate Templating Compared to Digital Templating in Total Hip Arthroplasty

Nimish Seth MBBS (Hons), BBMed; Rejith Mannambeth MBBS, MS (Ortho), DNB (Ortho); Susan Liew MBBS, FRACS (Ortho)

Background and Aims

Pre-operative planning plays an important role in the success of total hip arthroplasty (THA) and involves determination of the size of the prosthesis and potential difficulties before the surgery. There are multiple methods for templating in THA; however, due to printed radiographs being phased out and with the popularity of computer softwares, the optimal approach to templating remains debated. The aim of the study was to assess the accuracy of acetate templates on digital radiographs vs digital software in predicting the implanted components in THA.

Methods

Two independent researchers analysed the radiographs of 100 THA done at the Alfred Hospital from January 2019 to May 2021 and templated them using acetate templates on magnified digital radiographs and using OrthoView computer software. Templated components were compared to the implanted prosthesis and was categorised as either: ‘accurate’, ‘within one size’ or ‘inaccurate’. Descriptive and comparative analyses were appropriately performed to establish concordance.

Results

The acetabular implant size was predicted exactly using both the acetate onlay on digital radiographs technique and digital templating in 47% of cases. When defining accuracy to be within one size above or below the final implant size, the acetabular size was accurately predicted using the acetate onlay technique in 91% of cases and 87% of cases using digital templating. The femoral component size was accurately predicted using the acetate onlay on digital radiographs technique in 58% of cases compared with 33% of cases using digital

templating. When looking at the accuracy within one size, acetate templating demonstrated statistically significant accuracy compared with digital templating 88% vs 72% ($p = 0.000067$).

Conclusion

Both methods of templating reliably predict the implanted component sizes especially within an error of one size. Acetate templating on digital radiographs was superior in predicting femoral stem size especially in cemented femoral stems.

Cirrhosis and trauma: A retrospective review of an Australian trauma registry.

Varley V, Mathew J, Ban J

Background and Aims

The effect of cirrhosis on trauma patients is uncommon yet has been associated with significantly increased morbidity and mortality from previous retrospective studies. The aim of this study was to review this population and how the initial clinical and laboratory values predicted outcomes.

Methods:

This was a retrospective observational study undertaken at a Major Trauma Centre in Melbourne. All patients with an ICD-10 coding of liver disease who were admitted to the trauma service were screened for inclusion, with the final analysis including subjects with confirmed cirrhosis. The primary outcomes were mortality at 30 days and 6 months, with secondary outcomes of haemorrhage control, massive transfusion or requiring a neurosurgical procedure. Presentation haemodynamics, GCS, and laboratory values were collected for the outcome groups. Outcomes were compared using appropriate continuous and categorical tests to determine p values and odd ratios.

Results

125 patients were included in the final analysis. The mortality rate was 12.7% at 30 days and 22.2% at 6 months. The severity of injury as defined by Injury Severity Score (ISS) was the best predictor of mortality at 30 days, whereas severity of liver disease as defined by MELD score best predicted six-month mortality. Only 57.1% of those who died at 6 months suffered ‘major’ trauma.

Hypotension and reduced GCS were not significant predictors of haemorrhage and head injury respectively. Traditional markers of coagulopathy such as INR, were inconsistent in predicting needing major haemorrhage control or massive transfusion.

Conclusion

Cirrhosis is a significant risk factor for mortality in patients who suffer both minor or major trauma. Haemodynamics and conventional coagulation tests can be unreliable in managing trauma patients who require surgical intervention or management of coagulopathy.

Ultrasound and CT guided hook-wire localisation excisional biopsy of non-palpable lymph nodes

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Background

The use of hook-wire localisation is well documented in the literature to aid the surgical excision of impalpable breast lesions. However, much less work has been published on its use in other discipline, including the excision of non-palpable pathological lymph nodes. Excisional biopsies of these nodes are often required when the fine needle aspirations are non-diagnostic.

The use of hook-wire localisation has the potential to guide surgical exploration and reduce operative time, especially in patients with previous surgery in the area which could cause significant scarring and distort the regional anatomy.

Aim

The aim of this study is to describe the use of pre-operative ultrasound or CT guided hook-wire localisation in excisional biopsy surgery of abnormal lymph nodes, following non-diagnostic fine needle aspirations.

Method

We present a case series of patients who underwent hook-wire localisation excisional biopsy of non-palpable lymph nodes within this year at the Alfred Hospital. Eligible patients were identified retrospectively from the General Surgery Unit Audit Database and their medical records were reviewed for operative techniques and histopathology.

Result

Six patients underwent the procedure within 2021, including 4 cervical, 1 axillary and 1 external iliac lymph node excisions. Five patients had pre-operative ultrasound guided hook-wire localisation and 1 patient had the technique done under CT guidance. The histopathology results included 2 cases of viral infection, one of which was CMV lymphadenitis; 2 cases of Hodgkin lymphoma; 1 case of metastatic squamous cell carcinoma and 1 case of sarcoidosis. There were no reported post-operative complications.

Conclusion

Pre-operative hook-wire localisation is a safe and effective technique that could be utilised in excisional biopsy of non-palpable lymph nodes to reduce post-operative morbidity.

Parotidectomy: investigations, tumour location and postoperative outcomes

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Background and Aims: The utility of preoperative investigations remains unclear in parotidectomy. Limited research exists on tumour factors influencing postoperative outcomes. We aimed to assess the value of preoperative investigations and analyse factors influencing postoperative outcomes of parotidectomy.

Methods: A retrospective review was conducted of The Alfred Parotidectomy Database (1994-2021). Data included baseline demographics, preoperative investigations, tumour location, histopathology and postoperative outcomes. A new classification of central *versus* peripheral parotid tumours was established.

Results: 312 patients underwent parotidectomy, 48.4% females and 51.6% males. The mean (SD) age was 57.8 (16.3) years. 272 (87.3%) lesions were benign and 40 (12.7%) malignant. 265 (85.5%) were superficial lesions and 43 (13.9%) deep. Of those recorded, 193 (79.8%) were peripheral tumours and 49 (20.3%) were centrally located. Ultrasound for deep tumours had a sensitivity of 23.8% and specificity of 99.5%; CT had a sensitivity of 46.7% and specificity of 95.2%. FNAC for benign tumours had a sensitivity of 88.1% and specificity of 79.5%. FNAC for malignant tumours had a sensitivity of 74.4% and specificity of 92.9%. Complications included seroma (14.1%), fistula (7.7%), temporary partial facial nerve palsy (6.7%), infection (5.1%), great auricular nerve neuroma (2.6%), Frey's syndrome (1.3%) and permanent partial facial nerve palsy (0.6%). Deep tumours were associated with facial nerve palsy ($p=0.01$) and positive resection margins ($p<0.01$); superficial, central and peripheral tumours were not.

Conclusion: This large cohort of patients who underwent parotidectomy supports use of FNAC in preoperative assessment. Deep lobe tumours were associated with facial nerve palsies; however, they were also poorly localised on preoperative imaging. This demonstrates a need for further research focused on the preoperative workup and outcomes of deep lobe tumours.

Preoperative serum calcitonin may improve initial surgery for medullary thyroid cancer in patients with indeterminate cytology

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ABSTRACT

PURPOSE

Medullary thyroid cancer (MTC) is rare, with poorer outcomes than differentiated thyroid cancer. We aimed to identify areas for improvement in the pre-operative evaluation of patients with possible MTC in a high-volume endocrine surgery unit in accordance with current practice guidelines. We hypothesised that the selective use of serum calcitonin (sCT) as a biomarker for possible MTC could guide the extent of initial surgical management.

METHODS

We recruited MTC patients between 2000-2020 from the Monash University Endocrine Surgery Unit database. Demographics, tumour characteristics, pre-operative evaluation, operative management, and outcomes were analysed.

RESULTS

Of 1454 thyroid cancer patients, 43 (3 %) had MTC. Pre-operatively, 36 (84 %) patients had MTC confirmed on cytology (28, 65 %), elevated sCT (6, 14 %) or *RET* mutation (2, 4 %). Of these 36 patients, 31 (86 %) had optimal extent of thyroidectomy and lymph node dissection (LND). Five (14%) had less than total thyroidectomy due to nerve injury. Thirty-four patients had compartmental LND. In the 12 (27 %) patients with indeterminate or non-diagnostic cytology, 5 had elevated sCT and were managed as above. None of the remaining 7 had LND, thus potentially suboptimal surgery.

CONCLUSION

Our findings reflect the rarity of MTC, and the challenges of pre-operative diagnosis. The addition of sCT may improve surgical planning in patients with indeterminate cytology.

TITLE: Long-term outcomes of revisional malabsorptive bariatric surgery: Do the benefits outweigh the risk?

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ABSTRACT

Background: Revisional malabsorptive bariatric procedures are increasingly performed to remedy inadequate comorbidity resolution and weight loss post primary bariatric procedure. Long-term outcomes following revisional malabsorptive procedures are largely unknown and the risk-benefit profile need to be established.

Methods: Analysis of prospectively recorded data for all patients who underwent revisional Biliopancreatic Diversion +/- Duodenal Switch (BPD+/-DS) over a 17-year period.

Results: 102 patients with a median BMI of 41.3 kg/m^2 were identified with a revisional BPD+/-DS. Median follow-up was 7 years (1-17 years). There were 21 (20.6%) patients permanently lost to follow-up at a median of 5 years post-operatively. Mean Total Weight Loss (TWL) since BPD+/-DS of 22.7% (13.4), 20.1% (10.5), and 17.6% (5.5) was recorded at 5, 10 and 15 years respectively. Before BPD+/-DS, 23 (22.5%) patients had diabetes and 16 (15.7%) had hypercholesterolaemia with remission occurring in 20 (87%) and 7 (44%) patients respectively. Minor nutritional deficiencies occurred in 82 (80.4%) patients, with 10 (9.8%) patients having severe deficiencies requiring periods of parenteral nutrition. Six (5.9%) patients required reversal procedures. Sixteen (15.7%) patients experienced a complication within 30 days, including 3 (2.9%) anastomotic leaks. Surgery was required in 42 (41.2%) patients for late complications.

Conclusion: Revisional malabsorptive bariatric surgery induces significant long-term weight loss and comorbidity resolution. High rates of attrition from follow-up are of concern, given the high prevalence of nutritional deficiencies. These data question the long-term safety of revisional malabsorptive bariatric procedures due to the inability to assure compliance with nutritional supplementation and follow-up requirements.