A RETROSPECTIVE REVIEW OF TRANSVAGINAL ANAL SPHINCTER REPAIR: A SINGLE SURGEON'S EXPERIENCE

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Faecal incontinence (FI) is the involuntary loss of gas solid and liquid faeces. The two symptom groups include urge/active and passive incontinence. The prevalence of FI is between 1.6% and 15%. The prevalence of anal incontinence following obstetric anal sphincter injuries (OASIS) ranges from 15% to 61%. The grade of OASIS is an independent risk factor for anal incontinence in the short-term and in the long-term. Traditional repair is via a transverse or inverted "V" perineal incision but this has been associated with wound infections. In an effort to ameliorate the risk of wound infection a posterior fourchette incision or transvaginal anal sphincter repair has been previously described. At our institute a number of patients have received a transvaginal anal sphincter repair by a consultant colorectal surgeon. We performed a retrospective review of patients who had a transvaginal anal sphincter repair between January 2010 and June 2014 to determine the grade of anal continence and the incidence of wound complications post-operatively. 29 patients with anal sphincter injury underwent anal sphincter repair via a transvaginal approach. The median age was 41 (range 28–71). 21 patients had anal incontinence following OASIS. 12 patients underwent an overlap repair, 1 patient received an end-end repair, and 16 patients had unspecified repairs. 6 patients had concurrent rectovaginal fistulae. On follow-up 19 patients had wound complications of which 11 were described as minor/superficial breakdowns, 1 had an infected haematoma, 1 patient received a temporary stoma, 1 had a significant breakdown of the perineal body, and 5 were unspecified. Post-operative faecal incontinence and sexual dysfunction are being assessed by the St. Mark's incontinence score and Female Sexual Function Index, respectively.

THE INTERVENTIONAL MANAGEMENT OF NECROTISING PANCREATITIS: AN AUSTRALIAN EXPERIENCE

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Introduction: The interventional management of necrotising pancreatitis has evolved from early open surgery to delayed endoscopic or percutaneous intervention (1, 2). However, few studies have directly compared the three treatment modalities. We aim to compare the outcomes of patients who had endoscopic percutaneous or surgical interventions for necrotising pancreatitis at our institution.
Methods: Retrospective cohort study of patients who had interventions for necrotising pancreatitis at our institution from 2005 to 2014. Primary outcome was length of stay (LOS); secondary outcomes were complication rate and number of procedures required for resolution of necrosis.
Results: 30 patients were included. Mortality rate was 13% (four patients). Median LOS and time to intervention were 88 and 28 days, respectively. There were no significant differences in the CT severity indices and 48-hour CRP levels among the three groups. Initial endoscopic intervention was associated with a median LOS of 62 days compared to 101 days in the percutaneous group and 91 days in the surgical group (P = 0.04). There were higher rates of pancreatic fistulae (40%) (P = 0.012) and new-onset diabetes (30%) (P = 0.046) in the surgical group. Median number of procedures was similar among the three groups. Median LOS for patients with delayed intervention (4th–6th week of pancreatitis) was 66 days compared to 137 days in patients with early intervention (1st–3rd week) and 104 days in patients with late intervention (7th week onwards) (P = <0.001).
Discussion: A delayed endoscopy-first approach appears to be a reasonable strategy as it is associated with decreased LOS and a low complication rate.

References
1. Kokosis G, Perez A, Pappas TN. Surgical management of necrotizing pancreatitis: an overview. *World J. Gastroenterol.* 2014; **20**(43):16106–12.
2. van Santvoort HC, Bakker OJ, Bollen TL *et al*. A conservative and minimally invasive approach to necrotizing pancreatitis improves outcome. *Gastroenterology.* 2011; **141**(4):1254–63.

A RETROSPECTIVE REVIEW OF SURGICAL MANAGEMENT OF FISTULAE-IN-ANO IN PATIENTS WITH CROHN'S DISEASE

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Fistulae-in-ano represents a seemingly perpetual management challenge. The aim of treatment is to eradicate the tract while conserving anal sphincter function. The majority of the patients with fistulae-in-ano are as a result of a cryptograndular infection; however, fistulae can occur in 40%–80% in patients with Crohn's disease. These patients tend to have more complex fistulae and their primary treatment is medical; surgical management is reserved predominantly for undrained sepsis but also definitive surgical management. Furthermore, the presence of anorectal disease can limit operative options for definitive treatment. We performed a retrospective review of patients between January 2008 and March 2015 of all patients with Crohn's disease that had an operation for perianal disease at St Vincent's Hospital Melbourne. We recorded outcomes for 61 patients during that period. 12 (19.7%) patients had definitive surgery including: mucosal advancement flap (n = 2) end stoma (n = 2) and fistulotomy (n = 8). In this group, 6 had resolution, 2 had asymptomatic fistulae, 3 had recurrence, and 2 were lost to follow up. 49 (80.3%) patients had an examination under anaesthesia and insertion of seton(s) without definitive surgical treatment of which 6 had resolution, 2 had asymptomatic fistulae, 3 had recurrence, and 4 were lost to follow-up. We report that 12 (19.7%) of our patients had definitive surgical management of which 50% had resolution of their fistulae at their last follow-up.

IMPORTANCE OF ADEQUATE PRE-PROCEDURAL WORKUP FOR PATIENTS UNDERGOING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY: A SINGLE CENTRE EXPERIENCE

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Aim: Endoscopic retrograde cholangiopancreatography (ERCP) is a procedure with the potential for significant morbidity. Major complications such as pancreatitis may occur in up to 5% of cases (1). Therefore, it is critical to ensure proper diagnostic workup supports the use of the procedure for the appropriate patients. This project aims to evaluate the pre-procedure diagnostic methods and complication rates in patients who underwent ERCP and were found to have a normal biliary tree.
Method: 50 patients who underwent ERCP which diagnosed a normal biliary tree were identified between January 2010 and March 2015 via a combination of our hospital coding system and a prospectively maintained database. The indications for ERCP supporting investigations and subsequent complication rates were examined.
Results: 9 out of 50 (18%) patients experienced complications due to ERCP. Pancreatitis occurred in 4 patients (8%) and was the most common complication. Only 12 patients (24%) underwent magnetic resonance cholangiopancreatography (MRCP) prior to their ERCP procedure. The majority of patients underwent either computed tomography or ultrasound (24 patients; 48%) and 8 patients (16%) had a suspected problem seen on intra-operative cholangiogram. The remaining 6 patients (12%) were external referrals from other health services and did not have documented investigations.
Conclusion: The results of this project highlight the consequences of performing ERCP in patients with normal biliary ducts particularly without full pre-procedure diagnostic workup. There is an important role for the use of MRCP in these patients to prevent unnecessary endoscopic procedures.

Reference
1. Baillie J. Management of post-ERCP pancreatitis. *Gastroenterology & Hepatology*. 2011; **7**(6): 390–392.

UTILITY OF EUS AND EUS-FNA IN RESECTABLE PANCREATIC NEOPLASMS

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Introduction: Endoscopic Ultrasound (EUS) and Endoscopic Ultrasound Fine-Needle Aspiration (EUS-FNA) are accurate in staging pancreatic neoplasms. Most EUS-FNA outcomes reported in the literature were performed in large research centres with specific interest in hepatobiliary EUS. Our study analyses the early experience of EUS on patients being assessed for pancreaticoduodenectomy from a medium volume surgical centre in Melbourne. The accuracies of EUS and EUS-FNA were examined with regard to pathological diagnosis and tumour size.
Methods: 73 patients with resected pancreatic head cancer from 2000 to 2014 inclusive were reviewed. 28 had EUS performed of whom 23 had EUS-FNA. Cytology was indeterminate in 5 and was excluded leaving 18 eligible for analysis. EUS-FNA pathology was compared to final surgical pathology to determine accuracy. Where available, EUS assessment of tumour size was compared to final pathology tumour size.
Results: EUS-FNA had sensitivity specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of 90.9%, 57.1%, 76.9%, 80.0%, and 77.8%, respectively, in identifying pathology. In correctly determining whether the diagnosis was of a pathology indicated for surgical resection, EUS-FNA had both sensitivity and PPV of 94.1%. EUS uniformly understaged tumour size with median difference of 1.0 cm (range 0.2–8.4 cm) despite a maximal time between EUS assessment and subsequent surgical resection of 30 days.
Conclusion: EUS-FNA is accurate in identifying tumour pathology in pancreatic neoplasms. There is high sensitivity in identifying patients requiring surgical resection which may include non-carcinoma pathology that still requires resection. EUS uniformly understaged tumour size.

IS THE ACUTE SURGICAL UNIT MODEL FEASIBLE FOR AUSTRALIAN REGIONAL CENTRES?

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Introduction: A significant proportion of general surgery emergency procedures are conducted after hours in regional centres. The acute surgical unit (ASU) model reduces the number of after-hours operations performed. We review the burden of emergency surgery in a regional centre and assess what components of the ASU model would benefit regional hospitals.
Methods: Retrospective analysis was performed on data for all emergency cases performed at Latrobe Regional Hospital (LRH) over a one year period. Time into and out of theatre was used to determine total theatre usage and if the operation occurred after hours. ED triage time to theatre start for appendicectomy was compared to data from our metropolitan referral hospital Monash Medical Centre (MMC) which has employed an ASU.
Results: General surgery emergency cases in regional areas are regular and predictable with a median of 2 emergency cases performed and a mean theatre time of 156 minutes per day at LRH. On weekdays, 43.1% (n = 503) of emergency cases were done in the evening (1800–2400) compared to 20.3% (n = 217) on weekends when an emergency theatre is available during the day. LRH performed more appendicectomies after hours than MMC over a 1 year period.
Conclusion: Regional centres have a significant burden of general surgery emergency procedures, of which the number performed after hours is comparable to metropolitan centres. The number of procedures and theatre time required by these cases justifies a dedicated emergency theatre in hours similar to metropolitan ASU models and this would reduce emergency operating after hours.

INTESTINAL ISCHAEMIA: "NOT ALL DOOM AND GLOOM"

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Introduction: The presentation of intestinal ischaemia is relatively uncommon and is sometimes not recognized. Nonetheless, it is important diagnosis to consider inpatients presenting with abdominal complaints. Five cases of gastrointestinal ischaemia admitted to our region over a four year period are briefly discussed, four of which had a successful outcome and there was 1 fatality (but from which important lessons were learned). The successfully treated cases included a severe portal-mesenteric venous thrombosis, an extensive microvascular colonic mucosal infarct in a diabetic, a superior mesenteric occlusion treated by embolectomy, and finally an inferior mesenteric occlusion managed successfully nonoperatively.
Methods: The above 5 cases have been thoroughly analyzed and will be shown. A review of current medical literature has been performed and will be presented.
Conclusions: Gastrointestinal ischaemia needs to be considered in elderly patients with abdominal complaints, particularly in diabetics and have history of cardiac abnormalities and other vascular disease. Thrombotic disorders predispose to mesenteric ischaemia and a full coagulation profile is necessary in the work-up of these cases. Microvascular ischaemia of the colon is very rare and difficult to diagnose. Vascular reperfusion procedures (including open embolectomy) need to be available in selected cases. Due to improvements in diagnosis (especially CT scanning angiography) and interventional angiography, the outcome for gastrointestinal ischaemia has improved but the variations in its presentation as discussed above still make it a challenging condition to manage.

ARE POSITIVE INTRAOPERATIVE BILE CULTURES ASSOCIATED WITH INCREASED SURGICAL SITE INFECTIONS IN BILE DUCT SURGERY?

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Introduction: The aim of this study was to determine whether positive intraoperative bile cultures in patients undergoing surgery involving bile duct anastomosis are associated with surgical site infections (SSI). The secondary aim was to determine whether preoperative biliary stenting is associated with postoperative infections.
Methods: Subjects were identified by a single institution retrospective review of patients undergoing surgery requiring common bile duct anastomosis from January 2010 to March 2013 and a prospectively maintained database from March 2013 to June 2015. Patients without intraoperative bile culture results were excluded. Data were collected on preoperative biliary stenting, microbiology, sensitivities and SSI.
Results: 41 patient records were evaluated including 24 patients who underwent preoperative biliary stenting either percutaneously or by ERCP and 17 patients without any preoperative stent. 26 of 41 patients (63%) had bacterobilia. Of patients with stents, 21–24 (88%) had positive bile cultures compared to 5 of 17 patients (29%) without stenting ($p = 0.0002$). Overall 12 patients (29%) had SSI (6 superficial, 5 deep, 1 both). 10 of 12 patients (83%) with an SSI had positive intraoperative bile cultures ($p = 0.0335$) and 9 of 12 (75%) had been stented preoperatively ($p = 0.0855$).
Discussion/Conclusion: Intraoperative bile cultures were positive in 63% of patients and bacterobilia is significantly associated with SSI. Patients with stents are more likely to have bacterobilia although stenting itself was not significantly associated with SSI. The sensitivities of intraoperative bile cultures may help guide perioperative antibiotic choice in these patients.

THE MANAGEMENT OF PERIANAL DISEASE IN CHRONIC GRANULOMATOUS DISEASE: A SYSTEMATIC REVIEW AND CASE SERIES

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Introduction: Chronic granulomatous disease (CGD) is a rare condition which results in recurrent life-threatening infections. Perianal disease is one of the most common clinical manifestations of CGD. The current management of perianal disease in CGD is unsatisfactory with perianal sepsis frequently becoming chronic with acute exacerbations. The aim of this study is to review our experience of CGD associated perianal disease and to clarify treatment options by systematic review of the literature.
Methods: Retrospective review including all patients with CGD who presented with perianal disease to Royal Melbourne Hospital (2008–2014). A systematic review of the literature focusing on treatment of perianal disease in CGD.
Results: We identified four CGD patients with perianal disease. All patients were treated with prophylactic antibiotics and antifungals and 75% took prophylactic anti-inflammatory medication but perianal disease persisted in all patients. For acute presentations, all patients received intravenous antibiotics and surgical intervention. Long-term setons seemed to reduce recurrence of abscesses. Two patients received haematopoietic cell transplantation (HCT); and one patient was cured. On systematic review, there were several case series and case reports considering the best treatment of CGD perianal disease but no randomised controlled trial. There was no consensus on standard of care. HCT was proposed as a potential cure for refractory CGD.
Discussion/Conclusion: This study suggests that the best management for perianal disease in CGD is likely to be a combination of prophylactic and acute treatment both medical and surgical (particularly long-term seton placement), with HCT as the only curative option.

LAPAROSCOPIC SLEEVE GASTRECTOMY IN RURAL AUSTRALIA

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Introduction: The demand for bariatric surgery has risen dramatically in recent years due to the growing obesity epidemic. Effective allocation of available resources is particularly pertinent given the limited workforce per capita in rural Australia. We assessed the excess weight loss following laparoscopic sleeve gastrectomy (LSG) and identified patient characteristics that were significant predictors of the length of stay.
Method: Single centre retrospective cohort study. Patients who underwent LSG at an Australian rural hospital during 2011–2014 were documented. The outcome of weight loss was measured pre-operatively and post-operatively at follow-up. Patient demographics, pre-existing co-morbidities and other variables were analysed for predictors of the length of stay.
Results: LSG was performed on 141 patients with a mean follow-up period of 15 months. Pre-operative mean weight was 124.9 kg (σ = 23.2 kg) with a mean body mass index of 44.9 kg/m^2 (σ = 7.0 kg/m^2). Following LSG, mean excess weight loss was 30% (σ = 17%), 41% (σ = 20%), 51% (σ = 21%), 56% (σ = 21%), 68% (σ = 13%) and 65% (σ = 16%) at 3, 6, 9, 12, 18 and 24 months, respectively. Female sex (p = 0.008), history of hypercholesterolemia (p = 0.012) and operation time (p = 0.049) were statistically significant predictors of the length of stay.
Conclusion: Although laparoscopic sleeve gastrectomy can be effectively performed, the identified predictors for length of stay can be used to reduce the burden on the health care system in rural Australia.

HYPERBILIRUBINAEMIA – ITS UTILITY IN NON-PERFORATED APPENDICITIS

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Purpose: The diagnosis of acute appendicitis is made using clinical findings and investigations. Recent studies have suggested that serum bilirubin, a cheap and simple biochemical test, is a positive predictor in the diagnosis of appendiceal perforation and may be more specific than C-reactive protein (CRP) and white cell count (WCC).The aim of this study was to investigate the utility of the serum bilirubin level in patients with suspected acute but non- perforative appendicitis.
Methodology: A retrospective chart review of 213 patients who presented with suspected appendicitis in a six month period to Nambour Hospital was performed. Serum bilirubin WCC and CRP were recorded and analysed as to their utility in relation to the final diagnosis.
Results: 196 patients underwent an appendicectomy and 41 of these were negative. The specificity of hyperbilirubinaemia for appendicitis overall was 0.83, with a positive predictive value (PPV) of 0.86 compared with CRP (specificity 0.40, PPV 0.75) and WCC (specificity 0.67, PPV 0.85). The area under the ROC curve for bilirubin was 0.6289 compared to 0.6171 for CRP and 0.7219 for WCC. A subgroup analysis of those with complicated appendicitis demonstrated a PPV for bilirubin of 0.66 compared to 0.58 for WCC and 0.34 for CRP in agreement with the literature. Subgroup analysis of hyperbilirubinaemia in simple appendicitis demonstrated a PPV of 0.81 compared to CRP (0.71) and WCC (0.82).
Conclusion: Bilirubin had a higher specificity than CRP and WCC overall in patients with appendicitis. Hyperbilirubinaemia had a high PPV in patients with simple appendicitis.

FREE FLAP RE-EXPLORATION: MUSCLE ONLY VERSUS SKIN PADDLE – AN AUSTRALIAN EXPERIENCE

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Introduction: Free tissue transfer flaps are an effective reconstructive option for complex wounds; however, flap failure is a dreaded complication requiring timely re-exploration and salvage. In an Australasian first, the aim of this study was to determine whether salvage rates were higher in skin flaps, as opposed to muscle flaps, due to the durability of the overlying skin paddle allowing for better visual post-operative monitoring and more timely recognition of the threatened flap.
Methods: We conducted a retrospective analysis of all patients who underwent a free flap at the Alfred Hospital between 2004 and 2014. Data were collected on patient demographics, indication, flap type, time of recognition of the threatened flap and re-exploration outcome. Data were analyzed using Stata Version 13 (StataCorp, College Station, TX). Student's *t*-test and Pearson's chi-squared test were used to compare groups.
Results: There were 560 patients who underwent 573 free flaps. The most common indication was trauma. There were 58 re-explorations with a successful salvage rate of 79.3% (46/58). Overall complete flap loss rate was 2.1% (12/573). In flaps requiring re-exploration, there was a higher complete flap loss rate for muscle only flaps versus those with a skin paddle (p-value 0.041).
Discussion: Our study has demonstrated that muscle only flaps have a high failure rate compared to those with an overlying skin paddle. Urgent recognition and re-exploration of the compromised flap, especially muscle only flaps, in the early postoperative setting is critical in determining the success of flap salvage.

WHAT ARE THE PROGNOSTIC FACTORS OF BONE AND SOFT TISSUE SARCOMAS OF THE PELVIS?

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Introduction: Bone and soft tissue sarcomas of the pelvis are rare and treatment is challenging. This is due to complex regional anatomy high tumour

burden future functional considerations and generally poor prognosis. The literature is not united on what factors are important for influencing survival. The purpose of this study is to determine what the current prognosis is for patients with these tumours and to identify what factors influence survival.
Methods: Eighty patients who underwent pelvic resection for sarcomas of the pelvis were reviewed. The median follow up time was 46 months (IQR 15–104 months). Sixty-seven patients had bone sarcomas and 13 had soft tissue sarcomas. Survival rates were calculated using the Kaplan and Meier method. Independent prognostic factors were identified using adjusted Cox proportional hazards modelling.
Results: At follow up, 40 patients had died of disease, 6 alive with disease, 33 alive without disease, and 1 patient died of other causes. The overall 5-year survival rate was 58% and median survival was 106 months. Tumour involvement of the acetabulum, the development of metastases and increasing age at diagnosis were indicative of poor prognosis on multivariate analysis. Involvement of the acetabulum and extra-compartmental disease were independently associated with the development of metastases. An inadequate surgical margin was independently associated with local tumour recurrence.
Conclusion: Bone and soft tissue sarcomas of the pelvis demonstrate similar survival. Prognostic factors identified in this study include tumour involvement of the acetabulum, the development of metastases and increasing age at diagnosis.

THE USE OF ACELLULAR DERMAL MATRIX IN BREAST RECONSTRUCTION SURGERY: A SINGLE SURGEON'S EXPERIENCE

Kimberley Hughes and Derek Neoh

Austin Health

Tissue expansion or implant-based techniques are frequently used in reconstruction of the breast post mastectomy, however are not without limitations. The use of acellular dermal matrix as an infero-lateral hammock to cover and support the inferior pole of the expander or implant allows more control over placement of the infra-mammary fold which can result in a more pleasing aesthetic outcome and greater symmetry to the contralateral breast. The lower pole coverage provided by the matrix also theoretically allows higher initial tissue expander filling volumes decreasing the number of fills required before progressing to definitive reconstruction, or in some cases can allow a single stage straight to implant method. The practice of breast reconstruction using acellular dermal matrix has been gaining momentum internationally for several years; however, access has only become easily available in Australia with the introduction of Flex HD (a human acellular dermal matrix allograft) this year. We present a single surgeon's experience using Flex HD for immediate reconstruction of the first Australian series. An analysis of the early results and complication rates for 20 patients, including rates of seroma formation and infection, will be presented and discussed.

AN APPROACH FOR CONTOUR RESTORATION IN PAROTIDECTOMY PATIENTS: DERMOFAT GRAFT

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Background: Limited parotidectomy techniques without contour reconstruction are prone to unsightly defects and discomfort due to depressed deformity salivary leak and Frey's Syndrome. These aesthetic and functional challenges can be addressed by using dermofat graft reconstruction.
Purpose: To present our experience with dermofat graft in parotidectomy patients.
Methodology: All patients who underwent dermofat graft were identified from the case notes of the senior surgeon (J.C.). A patient reported outcomes (PRO) instrument consisting of validated questionnaires was administered. The PRO instrument covered patient satisfaction with aesthetic outcome symptom-specific and general outcomes. Complications were identified through retrospective analysis of standardized post-operative notes.
Results: During the period 2013–2014, 22 patients had dermofat graft after parotidectomy (extra-capsular dissection superficial parotidectomy) for benign primary parotid tumours by the senior surgeon. Of these patients, 16 were female and the average age was 51. 8 patients had right sided parotidectomy. Patient satisfaction and general score ratings were excellent at 1–42 months. No major complications were reported. 1 patient had wound infection which was treated with antibiotics. No cases of Frey's Syndrome were recorded.
Conclusion: Dermofat graft is a promising technique in the setting of contour reconstruction for parotidectomy patients with benign parotid tumours. This technique is associated with high rates of patient satisfaction and minor complications.

REVISITING THE WISE PATTERN MASTECTOMY FOR IMPLANT RECONSTRUCTION IN THE OBESE PATIENT

Kimberley Hughes and Derek Neoh

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Introduction: Implant reconstruction for the overweight patient with significant breast ptosis poses a challenge for the plastic surgeon. In the group who may not be suitable for autologous tissue transfer because of obesity or smoking, trying to achieve symmetry and cosmetic result with implant reconstruction is difficult. Combining the Wise pattern mastectomy to provide a dermal hammock for support of implant has previously been described. We present our case series and experience in this technique and review our results.
Method: Retrospective case series review 12 patients who underwent wise-pattern mastectomy and immediate implant-based reconstruction. Results of reconstructions are presented along with complication rates and discussion of techniques to help reduce complications in this obese subpopulation.
Conclusion: The use of a dermal hammock to achieve ptosis in an implant reconstruction is well established. In this particular population, the significant ptosis enables the use of an autologous dermal hammock to help either expansion or immediate to implant placement. The results show that while complications are higher in this subgroup because of the co-morbidities, the technique is useful and provides relative safe and reliable results and good cosmetic reconstruction.

THE FAMM FLAP FOR RECONSTRUCTION OF ORAL/NASAL MUCOSAL DEFECTS

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Introduction: The Facial Artery Myo-Mucosal (FAMM) flap is as a well vascularized thin pliable reconstructive option for defects of the oral and nasal mucosa. It is based on the pedicle of the facial artery as it runs in a plane superficial to the buccinator muscle and deep to the superficial muscles of the cheek (risorius/zygomaticus major) and includes the oral mucosa buccinator and this vessel. Given the robust anastomotic blood supply from the facial artery long width/length (5:1), flaps can be safely raised and based either superiorly or inferiorly depending on the location of the defect to be closed.
Method/Discussion: We present today our experience with reconstructions of the nasal/oral mucosa utilizing the FAMM flap for a wide variety of pathologies and reinforce the utility of the FAMM flap as a safe, versatile and simple reconstructive option for oral/nasal mucosal defects.

3D PRINTED MODELS OF CLEFT PALATE PATHOLOGY WITH POTENTIAL FOR SURGICAL AND PATIENT EDUCATION

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Introduction: The use of 3D printed models as an adjuvant to cadaveric dissection has already been described for medical student training (1). The creation of 3D models with anatomical pathology is in development and there is potential for their use in surgical education.

Aim: To create a 3D printed model of a child under the age of twelve months with a cleft palate deformity identified through imaging (CT/MRI). To identify the limitations, restrictions and potential uses for these models in surgical and patient education.
Method: De-identified imaging data were collected from Monash Health's database with six MRI scans found to have cleft palate deformity. Data from two children at 12 months old were segmented using Mimics® software creating a virtual 3D model. The models were coloured anonymised and printed in the 3D printing laboratory at the Centre for Human Anatomy Education using a Projet 4500.
Results: Two models were deemed of sufficient quality to go to print unamended. One of these models was further manipulated to artificially extend the length of the cleft. Thus, three models were printed: one incomplete soft palate deformity, one incomplete anterior palate deformity and one complete cleft palate. All had cleft lip deformity.
Discussion: The 3D printed models are of sufficient quality to accurately identify the cleft palate deformity. The quality of the scans was too low to be able to individually identify and print the palatal musculature.
Conclusion: With greater resolution scans and the development of materials that mimic human tissue, there is a great possibility in the future that models such as these will become adequate educational materials for aspiring reconstructive surgeons.

Reference
1. McMenamin PG, Quayle MR, McHenry CR, Adams JW. The production of anatomical teaching resources using three-dimensional (3D) printing technology. *Anat Sci Ed* 2014; **7**: 479–86.

IMPACT OF AORTIC VALVE TYPE AND ORIENTATION ANGLE ON AORTIC ROOT ASCENDING AND ARCH MORPHOLOGY: A COMPARATIVE STUDY

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Introduction: The aortoventricular [AV] angle, the aortic angle and aortic root anatomy have been increasingly studied in relation to interventional aortic valve replacements. This study aims at comparing these angles and root morphology between bicuspid [BAV] and tricuspid [TAV] aortic valves and its impact on aortic dilatation pattern.
Methods: This study involves assessment of 152 CT scans with measurements of the different angles in coronal views, orthogonal diameters across 11 locations along the thoracic aorta noting the type of arch, and other pathologies and correlating that against demographic morphometric and epidemiological parameters. 50 studies of age and sex matched patients served as controls. The remaining 102 comprised of bicuspid and tricuspid valve populations with varying degrees of aortic dilatation. The data were entered in Excel sheets and SPSS software used for statistical analysis.
Results: The mean angles with standard deviations are given below. The asymmetry index was directly related to the AV angle. The factors affecting the pattern of aortic dilatation were type of valvular pathology hypertension and aortic regurgitation.
Conclusions: The aortic root anatomy varied between controls as well as bicuspid and tricuspid aortic valves. The angulation might partly explain the differential shear stress in the aortic wall, and hence possibly its role in aortic dissection.

TRENDS IN PENILE CANCER: A COMPARATIVE STUDY BETWEEN AUSTRALIA, ENGLAND & WALES AND THE US

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Application for both oral and poster presentation
Aims: To investigate and compare the trends in incidence and mortality of penile cancer between Australia, England and Wales, and the US and provide hypotheses for these trends.
Methods: Cancer registry data from 1982 to 2005 inclusive were obtained from Australia, England and Wales, and the United States. From these data, age-specific, -standardised and mortality:incidence ratios were calculated and compared.
Results: The overall incidence of penile cancer in England and Wales (1.44 per 100 000 man-years) was higher than in Australia (0.80 per 100 000) and the US (0.66 per 100 000). Incidence of penile cancer in all three countries has remained relatively stable over time. Similarly, although the mortality rates were also higher in England and Wales (0.37 per 100 000 man-years) compared to Australia (0.18 per 100 000) and the US (0.15 per 100 000), the mortality/incidence ratios were similar for all three countries.
Conclusions: Penile cancer incidence is low affecting mainly older men. Rates differ between the three countries being twice as common in England & Wales as in the other studied regions. Circumcision rates have a potential influence on these rates but are not the sole explanation for the variation.

POST-OPERATIVE OUTCOMES OF TOTAL SHOULDER ARTHROPLASTY – A PROSPECTIVE STUDY

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Background/Aim: the predominant cause of failure of a total shoulder arthroplasty (TSA) is the loosening of the polyethylene glenoid component. Development of radiolucent lines may indicate deterioration in optimal post-operative outcome and monitoring of X-rays allows early intervention. We assessed the 2 year outcome following TSA with the Mathys Affinis Long Stem prosthesis with a chrome-cobalt head. The glenoid component was a double-pegged polyethylene prosthesis cemented with 3rd generation technique.
Methods: Monash University approved Ethics. Patients requiring TSA under 80 years between 2009 and 2010 were recruited in a prospective trial involving two senior orthopaedic surgeons. Data included demographics (age gender dominant arm and operated shoulder) pre- and post-operative self-reported ASES questionnaires, active elevation pain levels (0–10) and satisfaction (0–100). Two blinded and independent orthopaedic surgeons radiologically assessed the glenoid radiolucent lines (Lazarus Score).
Results: 43 patients fulfilled the criteria. Mean age 68.56 (47–80); 13 males, 30 females; 41 right-handed, 2 left-handed; operated arm: 23 right, 20 left. Active elevation median 90 (60–120), pre-operatively 150 (90–170) at 2 years; pain levels 6 (3–9), pre-operatively 0 (0–4) at 2 years. Satisfaction was 95.8 (80–100) at 2 years. Glenoid Lazarus scores at 2 years: Grade 0 = 19; Grade 1 = 15; Grade 2 = 6; Grade 3 = 3.
Discussion/Conclusion: All patients improved following TSA. Routine surveillance indicated early development of radiolucent lines which allowed for early intervention. There was no relationship between the ASES scores and the Lazarus scores. Patients in the aging population group benefit from structured reminders of the importance of follow-up by the treating surgeons.

FOLLOW UP OF 142 CONSECUTIVE CORONARY ARTERY BYPASS GRAFT (CABG) CASES – A STUDY OF SECONDARY PREVENTION MEDICATIONS COMPLEMENTARY AND ALTERNATIVE MEDICINES (CAM) USE AND OUTCOME ASSOCIATION

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Introduction: Freedom from angina and heart failure after CABG is significantly impacted by following secondary prevention guidelines which includes 4 subclasses of conventional medications. The current study aims to evaluate adherence among Tasmanians to guidelines and audit the prescription recommendations, CAM usage morbidity and mortality.
Methods: It involved retrospective analysis of 142 consecutive isolated CABG cases from the calendar year 2014 at the Tasmanian Cardiothoracic surgical unit. Demographic morphometric clinical and medication [preoperative and at discharge] data were collected from the unit's database. A questionnaire assessing morbidity quality of life [QOL], CAM usage and current

medications was sent to 140 patients. Statistical analysis was performed using SPSS software [20.0 SPSS Inc., Chicago, IL].
Results: The data were tabulated as patient characteristics conventional medications CAM and quality of life results. Medication use: Pre-operative Discharge 2015 p-values, Anti-platelet – 93%, 100%, 93%, 0.0276, 0.0020. Beta-blockers – 69%, 85%, 63%, 0.0002, 0.0005. ACE-ARB – 69%, 33%, 57%, 0.044, 0.044, Statins – 78%, 98%, 85%, 0.0005, 0.0069. CAM – 41% (2015). Median follow up 11 months: 2 deaths, 16% IHD progression, 17% dyspnea, 3% angina, 1% stroke. QOL Scale – Min 35% Q1, 70% median, 80% Q3, 85% Max, 100% QOL. Survey results – 77%, 92%, 70%, 61%, 82% responders stated little/no disease impact on mobility personal care usual activities, Pain/Discomfort or Anxiety/Depression, respectively.
Discussion: Adherence to secondary prevention guidelines decreases within the first year after CABG which negatively impacts the progression of IHD. ACE-ARB are the only group with continued support. Progression of IHD was associated with less adherence to postoperative statins [P = 0.4]. Even then the Tasmanian patients reported a very good QOL with minimum burden of disease.
Data: mean/SD or Median/quartiles. ANOVA for variance.
QOL survey results in bar graph form QOL scale results in box + whiskers plot.

RADIOLOGICAL 2ND LOOK – TURBO SPIN NON ECHO-PLANAR DIFFUSION WEIGHTED MRI IN THE ASSESSMENT OF RECURRENT CHOLESTEATOMA: A PROSPECTIVE DIAGNOSTIC ACCURACY STUDY AND COST-EFFECTIVENESS ANALYSIS

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Monash Health

Background: "Second Look" surgery aims to exclude recurrent cholesteatoma in patients who have had a canal wall up mastoidectomy. Recurrence is found in 10–50% of these cases. Turbo spin, non-EPI DWI Weighted MRI, has been demonstrated to be highly accurate in detecting cholesteatoma in the post-operative ear. It is also claimed that this MRI sequence could decrease the number of unnecessary procedures performed.
Aim: To determine the diagnostic accuracy of Non-EPI DWI MRI in detecting recurrent cholesteatoma. To perform an impact analysis of the role of Non-EPI DWI MRI on surgical decision making in cholesteatoma.
Methods: Patients were recruited to a prospective, blinded diagnostic accuracy study. Participants identified as requiring revision mastoid surgery after a previous diagnosis of cholesteatoma underwent a pre-operative MRI, reported by a single radiologist. This was compared with direct visualisation at surgery and histology. The operating Otologist (blinded to MRI) completed a decision-making questionnaire before and after each case.
Results: 25 patients undergoing 28 operations were recruited. Non-EPI DWI MRI demonstrated a sensitivity of 45.45% and a specificity of 82.35% in detecting recurrent cholesteatoma. In 65.22% of cases, the operating surgeon would have proceeded with second look surgery regardless of the MRI result. Knowledge of the MRI findings altered the nature of the surgical procedure in 1 case.
Conclusions: Our study demonstrated a lower diagnostic accuracy compared to similar studies described in the literature. Regardless of diagnostic accuracy, in this cohort of patients, the MRI results did not significantly impact on surgical decision making.
Sensitivity is 45.45% (95%CI: 16.75%–76.62%). Specificity is 96.20% (95%CI: 56.67%–96.2%). Positive Likelihood Ratio is 2.58. Negative Likelihood Ratio is 0.66. Disease prevalence is 39.29%. PPV is 63.5%. NPV is 70%.

CONTRAST-ENHANCED RENAL ULTRASOUND: AN AUSTRALIAN UROLOGY DEPARTMENT'S EXPERIENCE

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Application for both oral and poster presentation
Introduction: Contrast-enhanced renal ultrasound (CEUS) is a sonographic diagnostic technique used to assist in the surgical management of complex renal cysts (Bosniak IIF, III, IV). This study assesses the diagnostic utility and efficacy of CEUS at Western Health Melbourne between 2011 and 2015.
Methods: All CEUS scans performed to better characterise renal masses between Jan 2011 and March 2015 at Western Health were identified. Retrospective review of patient records was conducted to identify patient demographic details, likely diagnosis (i.e. benign vs malignant) and treatment outcomes (i.e. surveillance biopsy or surgery).
Results: N = 72 renal CEUS studies were identified. Median patient age: 57 y (range 30–87). The number of CEUS performed each year increased from 2 in 2011 to 43 in 2014. 73% of the CEUS were performed to further characterise renal complex cysts and 27% to investigate atypical appearing solid renal masses. 54% were performed after initial CT and standard ultrasound imaging, 32% after CT alone, and in 14% following a non-contrast ultrasound. 44% of the patients who underwent CEUS which suggested a malignant renal lesion proceeded to surgery, and carcinoma was identified in 73% of these cases.
Conclusions: CEUS acts as a useful adjunct to conventional radiological diagnostic techniques in the management of complex renal cysts. Over the 4 year study period CEUS has become a heavily utilised part of the diagnostic workup for complex renal cysts at our institution as radiologists' confidence in performing the study and reporting has grown. We recommend it as a second line investigation in this setting.

OUTCOME OF 122 CONSECUTIVE AORTIC SURGERIES AT THE ROYAL HOBART HOSPITAL OVER A 7-YEAR PERIOD

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Royal Hobart Hospital

Introduction: The aim of this study was to analyze the pattern of aortopathy in consecutive cases of aortic surgery done at the RHH with special reference to etiopathology.
Methods: Retrospective analysis of 122 consecutive aortic surgery cases from the Tasmanian Cardiothoracic Surgical Unit between 2008 and 2014. Demographic radiological clinical and pathological data were collected retrospectively from the unit's database in Excel sheets and presented as mean + SD or median-quartiles as appropriate. For radiological comparison, 50 consecutive trauma cases with chest contrast CT scans at the RHH were used. Statistical analysis was performed using SPSS software [20.0 SPSS Inc., Chicago, IL].
Results: The data were tabulated as patient characteristics, etiology, aortopathy patterns, surgical management and pathology results. 4 Marfan's, 62 bicuspid aortic valves, 7 cases of arteritis and 4 redo cases. Median follow up 43 months: 3 in hospital deaths, 6 postoperative deaths, 2 reoperations, 0 dissection, 1 infection.
Discussion: Aortic regurgitation hypertension and bicuspid phenotype [$p < 0.05$] contributed to aortic dilatation pattern. Tricuspid valves tended to have more diffuse pattern and more proportion of elastic fragmentation fibrosis and medionecrosis. Giant cell arteritis was noted in 7 cases and inflammatory cells were more common with bicuspid valves.
Conclusion: Marfan's and tricuspid aortic valves have more extensive aortic involvement and hence prolonged surgery. It is possible to have good results in aortic surgery even at relatively small cardiothoracic surgical units.

SURGICAL MANAGEMENT OF NON-SMALL CELL LUNG CANCER: AN AUDIT OF TASMANIAN PATIENTS BETWEEN 2008 AND 2014

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Royal Hobart Hospital

Introduction: The Tasmanian Cardiothoracic Surgical Unit at the Royal Hobart Hospital is a statewide service for the surgical management of lung cancer. We performed an audit on patients in Tasmania undergoing surgery for lung cancer between 2008 and 2014 by a single surgeon.
Methods: Retrospective data were collected using the Royal Hobart Hospital Digital Medical Record system to obtain patient and disease characteristics, investigations staging, and treatment and survival information.
Results: 182 patients were included. Females and males were evenly represented (51% and 49%, respectively) and the majority of patients were aged between 60 and 69 years of age. 79 patients were stage 1A preoperatively. Primary adenocarcinoma of the lung was the most common histological morphology (n = 86) followed by primary squamous cell carcinoma of the lung (n = 31). A total of 33 cases were resection of metastatic nodules. The most common procedures were right upper lobectomy (n = 43), left upper lobectomy (n = 27), left lower lobectomy (n = 21), and right lower lobectomy (n = 18). The total number of deaths among all patients at the time of data collection was 50, and among these deaths the average length of survival post operatively was 24 months.
Conclusion: This audit serves as a template for an intended lung cancer surgery registry for patients in Tasmania.

RE-EXPLORATION FOR BLEEDING POST-CARDIAC TRANSPLANTATION IS ASSOCIATED WITH ACUTE KIDNEY INJURY

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Aim: An increase in recipient complexity and mechanical assist device usage puts more patients at risk for post-operative bleeding following transplantation. This study investigates the short-term outcomes of patients requiring surgical re-exploration for bleeding post cardiac transplantation.
Methods: We retrospectively reviewed data from 111 patients undergoing orthotopic heart transplantation at our institution from 2009 to 2014. Outcomes and predisposing factors of those patients who required surgical re-exploration were compared to those not returning to theatre.
Results: Ten patients (9.0%) returned to theatre because of ongoing bleeding within the first 24 hours of transplantation with seven requiring a redo-sternotomy. There were 2 mortalities (20%) in the re-exploration group compared to a 4.9% early mortality rate in the no re-exploration group ($p = 0.062$). All patients in the re-exploration group developed acute kidney injury (100% vs 54.5%, $p = 0.006$) and 50% required ECMO support (50% vs 18%, $p = 0.012$). Duration of inotropic support (64 vs 44 hrs, $p = 0.048$), length of ventilation (74 vs 43 hrs, $p = 0.02$), intensive care (78 vs 51 hrs, $p = 0.009$) and hospital stay (80 vs 51 days, $p = 0.005$) were significantly longer in the re-exploration group than in those not returning to theatre. Interestingly, the length of cardiopulmonary bypass time and the presence of pre-operative anticoagulation therapy were not statistically significantly different between the two groups.
Conclusion: The lack of uniform predictors for re-exploration emphasises the multifactorial nature of bleeding post-cardiac transplantation. As a return to theatre portends a significant morbidity and mortality to the patient, every effort must be made to ensure adequate intraoperative haemostasis.

FRONT-TO-BACK WIPING AND DABBING BEHAVIOUR WIPING POST-TOILET SIGNIFICANTLY ASSOCIATED WITH ANAL NEOPLASIA AND HR-HPV CARRIAGE IN A COHORT OF WOMEN WITH A HISTORY OF AN HPV-MEDIATED GYNAECOLOGICAL NEOPLASIA

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Introduction: Worldwide, over two-thirds of anal cancer cases are women. The mechanism for acquisition of this HPV-mediated disease is unclear compared to other high-risk groups. We aimed to explore hypotheses related to perineal hygiene practices to inform public health strategies and counselling of affected patients.
Method: In a cross-sectional study of women attending follow-up at Tasmanian colposcopy and gynaecological oncology clinics, an anal smear was performed for cytology and HPV typing and a clinical questionnaire completed. Women with abnormal anal cytology were offered high-resolution anoscopy (HRA). Independent variables were evaluated by log-binomial and log-multinomial regression.
Result: Cytology from 163 participants revealed 40.0% as abnormal (28.2% high-grade). Of 50 women undergoing HRA, 64.0% confirmed abnormal histology (26.0% high-grade). HPV typing of 120 cases revealed 31.7% carrying high-risk HPV (HR-HPV), the most prevalent types being 51 and 16. In addition to some known anal cancer risk factors, we found front-to-back (FTB) wiping was associated with significantly increased prevalence of cytological and histological abnormality and HR-HPV carriage while dabbing post-toilet was significantly associated with decreased prevalence of these outcomes. Wiping post-defecation was more associated with abnormal histology than post-urination suggesting microabrasions might facilitate HPV infection. All associations were robust to adjustment.
Discussion/Conclusion: This is the first study to implicate perineal hygiene practices in the pathogenesis of anal cancer. Associations may benefit from further validation by adjustment for sexual and post-coital hygiene practices. Although this small regional sample may limit generalisability, the study's population-based design supports its representativeness of the Tasmanian population.

References

1. Abbasakoor F, Boulos PB. Anal intraepithelial neoplasia. *Br J Surg.* 2005; **92**: 277–90.
2. Grulich AE, Jin F, Conway EL, Stein AN, Hocking J. Cancers attributable to human papillomavirus infection. *Sexual Health.* 2010; **7**: 244–52.
3. Jin F, Stein AN, Conway EL, Regan DG, Law M, Brotherton JM *et al*. Trends in anal cancer in Australia 1982–2005. *Vaccine.* 2011; **29**: 2322–7.
4. Simpson Jr. S, Turner R. Four decades of anal cancer in Tasmania Australia: what do the case data tell us? *Sexual Health.* 2011; **9**: 213–9.
5. Blizzard L, Hosmer DW. The log multinomial regression model for nominal outcomes with more than two attributes. *Biometrical journal Biometrische Zeitschrift.* 2007; **49**: 889–902.
6. Velema JP, Ferrera A, Figueroa M, Bulnes R, Toro LA, de Barahona O *et al*. Burning wood in the kitchen increases the risk of cervical neoplasia in HPV-infected women in Honduras. *Int J Cancer.* 2002; **97**: 536–41.
7. Persad S, Watermeyer S, Griffiths A, Cherian B, Evans J. Association between urinary tract infection and postmicturition wiping habit. *Acta Obstet Gynecol Scand.* 2006; **85**: 1395–6.
8. Adatto K, Doebele KG, Galland L, Granowetter L. Behavioral factors and urinary tract infection. *JAMA.* 1979; **241**: 2525–6.
9. Hooton TM, Stapleton AE, Roberts PL, Winter C, Scholes D, Bavendam T *et al*. Perineal anatomy and urine-voiding characteristics of young women with and without recurrent urinary tract infections. *Clin Infect Dis.* 1999; **29**: 1600–1.
10. Foxman B, Frerichs RR. Epidemiology of urinary tract infection: II. Diet clothing and urination habits. *Am J Public Health.* 1985; **75**: 1314–7.
11. Jong E, Mulder JW, van Gorp EC, Wagenaar JK, Derksen J, Westerga J *et al*. The prevalence of human papillomavirus (HPV) infection in paired urine and cervical smear samples of HIV-infected women. *J Clin Virol.* 2008; **41**: 111–5.
12. Nivatvongs S, Stern HS, Fryd DS. The length of the anal canal. *Dis Colon Rectum.* 1981; **24**: 600–1.
13. Darragh T, Berry JM, Jay N, Palefsky J. Chapter 17: The anal canal & perianus: HPV-related disease. In: Mayeaux EJ, Cox JT, editors. Modern Colposcopy: Textbook & Atlas. 3rd ed.: LW2.

14. Guler T, Uygur D, Uncu M, Yayci E, Atacag T, Bas K *et al*. Coexisting anal human papillomavirus infection in heterosexual women with cervical HPV infection. *Arch Gynecol Obstet.* 2013; **288**: 667–72.
15. Shvetsov YB, Hernandez BY, McDuffie K, Wilkens LR, Zhu X, Ning L *et al*. Duration and clearance of anal human papillomavirus (HPV) infection among women: the Hawaii HPV cohort study. *Clin Infect Dis.* 2009; **48**: 536–46.
16. Varnai AD, Bollmann M, Griefingholt H, Speich N, Schmitt C, Bollmann R *et al*. HPV in anal squamous cell carcinoma and anal intraepithelial neoplasia (AIN). Impact of HPV analysis of anal lesions on diagnosis and prognosis. *Int J Colorectal Dis.* 2006; **21**: 135–42.
17. Cappiello G, Garbuglia AR, Salvi R, Rezza G, Giuliani M, Pezzotti P *et al*. HIV infection increases the risk of squamous intra-epithelial lesions in women with HPV infection: an analysis of HPV genotypes. DIANAIDS Collaborative Study Group. *Int J Cancer.* 1997; **72**: 982–6.
18. Hillman RJ, Garland SM, Gunathilake MP, Stevens M, Kumaradevan N, Lemech C *et al*. Human papillomavirus (HPV) genotypes in an Australian sample of anal cancers. *Int J Cancer.* 2014; **135**: 996–1001.
19. Ouhoummane N, Steben M, Coutlee F, Vuong T, Forest P, Rodier C *et al*. Squamous anal cancer: patient characteristics and HPV type distribution. *Cancer Epidemiol*. 2013; **37**: 807–12.
20. Goodman MT, Shvetsov YB, McDuffie K, Wilkens LR, Zhu X, Ning L *et al*. Acquisition of anal human papillomavirus (HPV) infection in women: the Hawaii HPV Cohort study. *J Infect Dis.* 2008; **197**: 957–66.

CLOSTRIDIUM COLITIS: CHALLENGES IN DIAGNOSIS AND TREATMENT

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Background: Clostridium difficile infection (CDI) has been reported to occur with increasing frequency and with more severe presentations being encountered. This article presents data from The Alfred Hospital highlighting the increased incidence, the increased severity and the broader clinical presentations observed. A case series highlights a variety of clinical scenarios that provided diagnostic and management challenges. We additionally describe a novel form of treatment for fulminant colitis.
Methods: A retrospective review of C. difficile toxin (CDT)-positive and culture-positive cases was performed at The Alfred Hospital (2010–2012). Six cases are then presented as a case series to highlight the broad and atypical types of presentations one may encounter. Finally, a novel method for managing fulminant colitis operatively is presented.
Results: A fourfold increase in cases of toxin-positive and culture-positive cases was noted over the initial 14 months of the period of analysis .The rate of cases detected then plateaued. This increase could not be explained by increased testing being undertaken. It is also not associated with increased usage of antibiotics nor with increased patient numbers being treated.
Conclusion: CDI can present in various clinical forms. In our hospital, the number of cases of toxin-positive and culture-positive detection is increasing. A low threshold is required to identify and adequately treat patients with CDI. Fulminant colitis can be managed successfully with the creation of a diverting loop ileostomy colonic washout and subsequent antegrade colonic vancomycin enemas.

BOTULINUM TOXIN THERAPY FOR CHRONIC ANAL FISSURES: WHERE ARE WE AT CURRENTLY?

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Introduction: Botulinum toxin (Botox) injection for chronic anal fissure (CAF) is commonly performed, yet there remains no consensus on optimal dosage or frequency of injections required to achieve complete resolution of anal fissure. The aim of this study was to determine the effectiveness of botulinum toxin and side effect profile in the management of CAF.
Methodology: A retrospective clinical study of patients between 2010 and 2014 who underwent a Botox injection for CAF at a tertiary centre was performed. The effectiveness of Botox was measured using standardised outcomes including overall healing rate, presence of anal pain recurrence and need for repeat botulinum injection. Binary outcomes were assessed using logistic regression model. The analysis was performed using Stata Version 13 (StataCorp, College Station, TX).
Results: One hundred and one patients underwent 126 Botox injections within the study period. The mean first postoperative visit was at one month. The overall recurrence rate was 32%. The majority of patients were given 33 Units. No statistically significant relationship between dose and recurrence was identified. The presence of pain at the first postoperative visit was a predictor of future recurrence (OR 3.92, CI 1.58–9.74, p-value = 0.003).
Conclusion: Botulinum toxin is an effective strategy for chronic anal fissure. Low doses can be given with good efficacy as highlighted by our audit and have the potential for great cost saving. The best predictor of recurrence is the presence of pain at the first post procedure visit.

NECROTISING FASCIITIS – A REGIONAL HOSPITAL'S EXPERIENCE

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Introduction: Necrotising fasciitis (NF) is characterised by rapidly progressive infective necrosis of subcutaneous tissue and fascia (1, 2). The exact pathogenesis of the disease is open to discussion but its rapidly destructive clinical course leaves one with little time to deliberate on its management. The published incidence is 0.04 cases per 1000 person-years (1); however, the Launceston General Hospital (LGH) with a catchment population of <140 000 treated 17 proven cases of NF over an 11-month period in 2014.
Aims: To compare our practice and outcomes against published data and to examine the speed of our response once the diagnosis has been made.
Methods: A retrospective review of the patients admitted to the LGH between 1 January 2014 and 30 November 2014 with a diagnosis of NF was conducted. The patients' demographic aetiologic treatment and outcome data were collated and analysed.
Results: The primary outcomes of our experience in dealing with necrotising fasciitis were not inferior to that of major tertiary referral centre (2).
Conclusion: The early recognition and rapid response by all involved in the care of these patients is pivotal in determining the patients' outcomes. Early aggressive debridement leads to fewer return trips to the operating theatre and earlier recovery.

References

1. Anaya DA, Dellinger EP. Necrotizing soft-tissue infection: diagnosis and management. *Clinical infectious diseases: an official publication of the Infectious Diseases Society of America.* 2007; **44**(5): 705–10. Epub 2007/02/06.
2. Proud D, Bruscino Raiola F, Holden D, Paul E, Capstick R, Khoo A. Are we getting necrotizing soft tissue infections right? A 10-year review. *ANZ journal of surgery.* 2014; **84**(6): 468–72. Epub 2013/10/30.

DO INCIDENTAL PET-POSITIVE BREAST LESIONS CORRESPOND TO BREAST CANCER?

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Introduction: Some patients undergoing whole-body PET scanning have an incidental finding of a PET-avid breast lesion. Such lesions require further investigations in order to determine whether or not they are malignant. It is important to establish the true nature of these incidental PET-positive breast lesions, as this will have implications for patient care and guide future decision-making.
Aim: To investigate whether incidental findings of PET-avid breast lesions correspond to a diagnosis of breast cancer.
Methods: A retrospective review of 20 patients with a finding of an incidental PET-positive breast lesion at Austin Health. Results of further breast imaging and histopathology (if applicable) will be reviewed in order to determine if there was pathology to account for the PET-positive finding. The primary end-point for this study will be the proportion of patients diagnosed with malignant breast cancer (DCIS or invasive carcinoma), following the incidental finding of a PET-positive breast lesion, compared with the total number of patients with incidental PET-positive breast lesions.

Results: Of the 20 PET-positive breast lesions discovered at Austin Health, 10 (50%) were found to be malignant.
Conclusions: The incidental finding of a PET-avid breast lesion warrants further investigation. Analysis of a larger number patients who weren't followed up at Austin Health will be useful in determining whether our case series is representative of the greater patient population.
Abbreviations: FDG-PET – fluorodeoxyglucose positron-emission tomography. DCIS - ductal carcinoma in situ

PROPHYLACTIC ANTIBIOTIC USE IN NATIVE ARTERIOVENOUS FISTULA CREATION IN SOUTHERN TASMANIA

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Introduction: There are conflicting guidelines with regard to the use of prophylactic intraoperative antibiotic use during native arteriovenous fistula (NAVF) creation, a common procedure performed by vascular surgeons on a high-risk patient population and historically associated with a low risk of post-operative infection. This study aims to investigate perioperative prophylactic antibiotic use in the creation of NAVFs at a small teaching centre and the prevalence of post-surgical infection associated with this operation.
Method: 175 cases of NAVF creation at the Royal Hobart and Hobart Private hospitals between January 2011 and June 2015 were reviewed post-operatively by the same healthcare professional and the number of infections in this group noted. 67 of these cases were then further analysed to establish whether perioperative antibiotic prophylaxis had been used.
Results: Of 175 NAVFs, 21 developed a wound infection (12%) which was defined as a nephrologist adjudging that the patient required antibiotic treatment. 24 (36%) of the 67 patients analysed received intraoperative antibiotics. There was no significant difference in wound infection rate between those who received antibiotics and those who did not. Multiple regressional data analysis will be presented.
Conclusion: We have shown that current antibiotic use is not consistent with local guidelines. Despite this, the post-operative rate of infection as defined in our study in patients undergoing NAVF creation remains high (12%) warranting further investigation.

POST SPLENECTOMY INFECTIONS: THE EXPERIENCE FROM THE RED CENTRE

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Background: The spleen plays a crucial role in human defense against infection. Patients who are asplenic or hyposplenic are at increased risk of severe sepsis due to specific organisms. Splenectomy could be followed by severe systemic infection because it removes the splenic macrophages that filter and phagocytose bacteria and other pathogens borne in the blood. Overwhelming post-splenectomy infection (OPSI) could have mortality up to 50%. The risks of serious infection could be reduced by good advice immunisation and antibiotic prophylaxis. In practice, such preventative measures might not be thoroughly followed or may fail. A review of such cases presenting to the Alice Springs Hospital (ASH) was undertaken to determine whether currently recommended preventative measures for post-splenectomy patient care are being followed.
Methods: Current study is a retrospective review of 25 cases of splenectomies under taken in Alice Springs Hospital (ASH) in the last 10 years (2004–2014) and the incidence of post-splenectomy infections requiring admissions to the hospital. The data were collected from the case notes, outpatient clinic notes and letters from General Practitioners. The ASH jade care online medical record system was also used to review all the admissions and the type of infections requiring admission to the hospital.
Results: The review showed 25 splenectomies were undertaken in the ASH in the last 10 years. 22 splenectomies were done in an emergency setting due to trauma involving high speed motor vehicle accidents or cases of aggravated assaults. 3 cases were undertaken due to haematological disorders. Female to male ratio was 2:1. Mean age was 37.4 (Range = 14–70). Indigenous to Caucasian ratio was 5:1. 14 patients were admitted to ASH with infections, with 6 of them with OPSI. 2 deaths were seen due to severe sepsis.
Conclusion: It was concluded that the modern principles for managing asplenic patients were not applied due to poor compliance and lack of proper mechanisms to identify the patients at risk. Some cases of infections may be preventable but a large number of asplenic patients remain unrecognized. The initiation of a splenectomy register in Northern Territory might help implement agreed principles and audits agreed upon to manage patients undergoing splenectomy. More work is needed to provide optimal management of the subgroup of population in central Australia.

References
Holdsworth RJ, Cuschieri A, Irving AD. Postsplenectomy sepsis and its mortality rate: Actual versus perceived risks.
Cullingford GL, Watkins DN, Watts ADJ, Mallon DF. Severe late postsplenectomy infection.
Brigden Malcolm L, Pattullo Andy L. Prevention and management of overwhelming postsplenectomy infection – An update.
Waghorn DJ. Overwhelming infection in asplenic patients: current best practice preventive measures are not being followed.
Di Cataldo A, Puleo S, Li Destri G, Racalbuto A, Trombatore G, Latteri F, Rodolico G. Splenic trauma and overwhelming postsplenectomy infection.
Altamura M, Caradonna L, Amati L, Pellegrino NM, Urgesi G, Miniello S. Splenectomy and sepsis: The role of the spleen in the immune-mediated bacterial clearance.
White KS, Covington D, Churchill P, Maxwell JG, Norman KS, Clancy TV. Patient awareness of health precautions after splenectomy.

EVALUATION OF THE USE OF ELECTROCAUTERY VS HARMONIC FOCUS IN SEROMA FORMATION AFTER AXILLARY LYMPH NODE DISSECTION

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Many articles have been published describing risk factors and preventive measures for seroma formation after surgery. The Harmonic Focus is emerging as an alternative surgical tool for dissection and haemostasis. Although the use of Harmonic Focus in this study did not significantly reduce the seroma volume output in patients who were undergoing axillary dissection for breast cancer, a multicentre randomised control study using HF vs CD is required to further elucidate the superiority.
Introduction: Seroma formation in patients who have undergone axillary lymph node dissection (ALND) may be a source of significant discomfort and morbidity in breast cancer patients. The aim of this study is to compare its incidence when Harmonic Focus (HF) or conventional diathermy (CD) is used for ALND.
Methods: This is a single institution retrospective study carried out in Bankstown Hospital over a 6 year period. The patients were categorised into HF and CD groups and were evaluated for volume of seroma formation hospital stay and complications.
Results: Out of a total of 94 patients, 42 were in the HF and 52 in the CD groups, respectively. No statistical differences were identified in patient demographics. Two day median seroma volume for HF was 205 ml (IQR 95–265) and for CD was 227.5 ml (IQR 149–385). The total seroma output for HF was 270 ml (IQR 160–478) and CD was 385 ml (IQR 220–558). These results were not statistically significant. The operative time and complication rates between the groups were also not significant.
Conclusion: The use of Harmonic Focus in this study did not significantly reduce the seroma volume output in patients who were undergoing axillary dissection for breast cancer. There was also no difference in operative time or complication rate.

RETROSPECTIVE ANALYSIS OF TIMING OF ADJUVANT CHEMOTHERAPY INITIATION AFTER SURGERY FOR CANCER PATIENTS IN A REGIONAL CANCER CENTRE IN VICTORIA

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Background: Time interval between surgery and initiation of adjuvant chemotherapy may impact the survival in cancer patients. We conducted an audit to look for the timing of adjuvant chemotherapy initiation after definitive surgery in patients who received adjuvant chemotherapy in Oncology unit GV health.
Methods: Retrospective review of patients referred to our Oncology unit from May 2014 to May 2015 with a diagnosis of cancer was the study subjects. Clinical data were collected from electronic records. Collected data were diagnosis date of surgery, date of initial referral to oncology since surgery, date first seen by an oncologist and date of adjuvant chemotherapy commencement.
Results: 114 patients were identified who received adjuvant chemotherapy. Median time to have surgery since diagnosis was 51 days. Median time to see an oncologist since diagnosis was 56 days. In breast cancer patients, median time to have surgery since diagnosis was 66 days, median time to see an oncologist since diagnosis was 43, and median time to commence adjuvant treatment since surgery was 65 days. In colorectal cancer patients, median time to have surgery since diagnosis was 41 days, median time to see an oncologist since diagnosis was 53, and median time to commence adjuvant treatment since surgery was 78 days.
Conclusion: This study demonstrates that there is a significant delay in commencement of adjuvant chemotherapy in patients with breast and colorectal cancer in regional Victoria. Therefore, there is a need to shorten the waiting time until start of adjuvant chemotherapy which will improve the survival of cancer patients.

INTEGRA USE ON FULL THICKNESS HEAD AND NECK BURNS

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Introduction: The use of Integra is well established as a dermal substitute and has been reported for use for full thickness burns of the face but is not common place.
Aim: We present our experience using Integra for full thickness burn reconstruction of the head and neck region and follow these patients from initial injury to the postoperative phase.
Methods: Our review is of a series of full thickness facial burns in which immediate reconstruction with the use of Integra, a bilayered dermal substitute comprising of bovine collagen and chondroitin-6-sulfate covered with a silicone membrane, was used with staged overlying split thickness skin graft.
Results: The functional and cosmetic outcome was assessed on follow up review of up to 2.5 years looking at scaring colour match contracture and juncture appearance.
Conclusion: We discuss the advantages and disadvantages of Integra use and split thickness skin grafting as alternative to thick auto grafting on the head and neck.