

GENERAL SURGERY

GS001
THE ROLE OF HYPERBARIC OXYGENATION IN THE
MANAGEMENT OF NECROTISING SOFT TISSUE INFECTIONS

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Introduction Hyperbaric oxygen therapy (HBOT) is advocated as an adjunctive treatment to surgical and antibiotic management in both clostridial myonecrosis (CM) and necrotising fasciitis (NF).

The problem CM is a fulminating myonecrotic infection caused by clostridial species. It is now rare but life-threatening, with a mortality of 15–25%. We see only sporadic cases these days in NSW. NF is a progressive, rapidly spreading inflammatory infection occurring in the deep fascia, with secondary necrosis of the subcutaneous tissues. The majority of cases exhibit mixed anaerobic and aerobic organisms. It is more common than GG, and more often fatal – the mortality rate is 20–40%. We see 10 to 15 cases each year, most commonly in immunocompromised and diabetic patients.

Management Operative debridement of necrotic tissue, optimal antibiotic cover and intensive care support. Only after this should HBOT be considered. It is inappropriate to remove patients from this care in order to administer HBOT. HBOT has been used since the 1960s and is supported by animal studies, small case series and small comparative trials using historical or geographical controls. In all, HBOT has been used in over 1200 recorded cases of gas gangrene over 117 reports. Because the incidence is so low, there has never been a randomised trial for any therapy for these conditions.

Conclusions HBOT is widely accepted as standard clinical care for these conditions, is specifically supported by Medicare, and HBOT is associated with about 20% improvement over historical controls. We recommend continued use of this modality as an adjunct.

GS002
SYSTEMIC SEQUELAE OF SEPSIS AND THEIR TREATMENT

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Sepsis has been defined as the presence of a suspected or proven infection together with the signs of an acute inflammatory response. Severe sepsis requires the presence of at least one or more dysfunctional organs systems – cerebral obtundation, oliguria, arterial hypoxemia, metabolic acidosis (with a raised blood lactate), a fall in platelet count, disseminated intravascular coagulopathy, abnormalities in liver function and finally hypotension. Septic shock is defined as hypotension not responding to an adequate fluid challenge hence requiring the administration of vasopressor support (usually noradrenaline). Mortality rates from sepsis vary depending upon the number and severity of organ dysfunctions from less than 20% to more than 50% as in the setting of septic shock. Recently, the ‘Surviving Sepsis’ guidelines have emphasised the importance of timeliness – early diagnosis, early appropriate antimicrobial therapy, early (and vigorous) fluid resuscitation, early endotracheal intubation and mechanical ventilation and the early introduction of vasopressors and inotropes to re-establish tissue perfusion with early (and appropriate) haemodynamic monitoring. Other interventions that should be considered include low dose steroids (hydrocortisone 50 mg qid) to correct any adrenocortical deficiency, low dose vasopressin (1–4 units/hour) to correct any hypothalamic/posterior pituitary deficiency and an insulin infusion to maintain strict blood sugar control (blood sugar 4.0–6.1 mmol/L). Finally, there is some evidence to suggest that a 96 hour infusion of activated protein C (drotregogin alpha [activated] rhu) may improve survival in some cases of severe sepsis primarily of medical origin.

GS003
ARE PATIENT SELF-ADMINISTERED QUESTIONNAIRES
RELIABLE ENOUGH TO PRIORITISE SURGERY AND MEASURE
OUTCOMES?

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Purpose A patient self-administered questionnaire capturing quality of life (QOL) may improve assessment for scoring priority for surgery and monitoring outcomes. However, are such questionnaires sufficiently reliable for common general surgical elective procedures? This study evaluates a simple condition specific questionnaire (CSQ).

Method Questionnaires were devised incorporating widely validated SF-36 questions and newly developed condition-specific questions based on extensive literature review and expert opinion. For gallstone disease, 54 symptomatic patients awaiting cholecystectomy completed the questionnaire and the validated but more lengthy Gallstone Impact Checklist (GIC). Concurrent priority scores were assigned by two surgeons.

For varicose veins, 102 patients completed a similarly devised CSQ. These were compared with standardised clinical severity scores and vascular laboratory assessments.

Results Average completion time was 10 (range 4–20) minutes for SF-36, and 2.7 (range 1–5) minutes for the CSQ. Validity of CSQ was reflected by high correlation with the longer validated specific questionnaires e.g. GIC ($r = 0.74$), but not with SF-36 except in directly related dimensions (e.g. highest bodily pain, $r = 0.59$). Of all measures, CSQ demonstrated the strongest relationship with surgeon-rated clinical severity ($r = 0.6$). For venous disease the CSQ correlated equally well except the association with measured reflux and ultrasound based scores were as not strong.

Conclusions Self administered condition specific questionnaires can be practical and reproducible tools for the assessment of disease severity and monitoring of surgical outcomes.

GS004
CORRECT PATIENT, CORRECT SITE AND CORRECT SIDE –
EASY TO RECOMMEND BUT HARD TO IMPLEMENT

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Background In 2004 the Safety and Quality Council of Australia produced recommendations that mandated hospitals to establish procedures to avoid operating on the wrong patient or wrong side.

In Victoria, in 2003–4 there were 16 wrong procedures and 14 in 2004–5. In the Geelong hospital in this period there was one anaesthetic inserted in the wrong eye but no wrong site/side surgery. This paper describes the experience of the Geelong Hospital in attempting to improve its ability to document the process of preoperative checks.

Methods A subcommittee of the operating services management committee was formed to design a policy and checklist. All surgeons and anaesthetists were sent guidelines and a letter asking for input to the process. It was decided to add antibiotic and DVT prophylaxis to the checklist. A form to be filled in by the anaesthetic and surgical teams went through four drafts before reaching its final format.

Results Four versions were required with the final format having an anaesthetic and surgical checklist. Two people were required to complete each. In the day stay suite nurses took an active role and the completion rates reached over 90%. In the main theatre it was only 70%, with plastic surgery and trauma cases being the least well documented. The use of subcutaneous prophylaxis (heparin/clexane) increased significantly from 65% to 87% ($P < 0.0001$) and TED (anti-embolic) stockings from 41% to 64% ($P < 0.001$).

Conclusion It is easier to make recommendations than to implement them even if they are worthy of support. Only 60–70% of main theatre cases had a documented check in the first year. The rate of giving appropriate DVT prophylaxis significantly improved.

GS005 LEARNING CURVE FOR LAPAROSCOPIC CHOLECYSTECTOMY IN COMPLICATED GALLBLADDER DISEASE

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Laparoscopic cholecystectomy (LC) is one of the most commonly performed operations. Whilst the learning curve for uncomplicated LC has been well documented there is a paucity of data regarding the learning curve in patients with complicated gallbladder disease.

Aim The aim was to establish if there was a learning curve in the management of complicated gallbladder disease.

Methods An audit was done of the senior author's (MC) prospectively collected database for patients requiring operative management for cholelithiasis between 1994 and 2005. The conversion rate (CR) to open surgery and the performance of operative cholangiography (OC) were used as measures of the learning curve.

Results Cholecystectomy was performed on 2021 patients with 2015 (99.7%) having an attempted LC. 661 patients (33%) had complicated gallbladder disease.

Condition	No.	CR(%) 94-98	CR(%) 99-05	CR(%)	*OC(%)	*OC(%) 94-98	*OC(%) 99-05
Acute	179	2	5	0.9	95.5	90.5	98
Chronic	311	6	10	3.5	94.5	89	99
Mucocele	72	4	8	3	99	91	100
Gangrenous	20	15	17	14	75	17	100
Empyema	79	20	29	13	82	67	93
All compl.	661	7	11	4	93	85	98
Not compl.	1354	0.7	0.9	0.5	98	96	99

* – Successful.

CR/OC rates are in %.

Conclusion There is a learning curve for LC in the setting of complicated gallbladder disease. Additional collaborative data is required shall establish the confidence limits of this learning curve and enable the establishment of an audit tool.

GS006 PATIENT UNDERSTANDING POST LAPAROSCOPY FOR ABDOMINAL PAIN

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Aim To ascertain how well patients recall their discharge diagnosis and details of their surgical procedure after a diagnostic laparoscopy at our institution.

Methods Three hundred and forty five patients were identified as being eligible in the study. Patients demographic and treatment details were recorded. They were then contacted by telephone and 258 patients participated (response rate 75%). They were asked the same 7 questions by an investigator who was blinded to their treatment details and their responses recorded.

Results The sample was made up of 248 (96%) females and 10 (4%) males. Only 7 people (3%) were incorrect about the state of their appendix. However, 98 people (38%) were incorrect about their discharge diagnosis. Sixty nine patients (27%) were unhappy with the information they received while in hospital. Age, whether pathology was found, dissatisfaction or type of operation was not found to significantly influence patient recall of diagnosis.

Conclusion We found that patients having a diagnostic laparoscopy at our institution often leave the hospital dissatisfied and with a poor understanding of their discharge diagnosis. This has important implications for future assessments of acute abdominal pain in these patients and can lead to misinformation and unnecessary surgical procedures.

GS007 RANDOMISED TRIAL OF MESH FIXATION IN LAPAROSCOPIC PREPERITONEAL HERNIOPLASTY-EARLY RESULTS

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Introduction Inguinal hernias are common with over 40 000 repaired annually in Australia. The laparoscopic preperitoneal mesh (TEP) repair is rapidly gaining popularity as evidence of its advantages over open techniques accumulates. Despite this, chronic pain is reported by up to 20% of patients following TEP, and although mesh fixation by staples has been implicated as a possible cause, it is thought necessary to reduce the risk of hernia recurrence. We investigated the association between stapled mesh fixation, chronic pain, and recurrence through a randomised trial.

Method Five hundred groin hernias in 360 patients were randomised to receive either mesh fixation by spiral staples or no fixation at all in a multi-centre prospective clinical trial. The primary endpoints of hernia recurrence and new groin pain were assessed by interview and physical examination at 4 weeks, 6 months and 2 years following surgery. Patients and assessing clinician were blinded to the result of randomisation.

Results With follow-up progressing as per trial protocol, a trend is emerging toward reduced chronic pain in the unstapled group at 6 months. New pain was reported in 17.2% of patients with staples versus 6.7% in those without, which was moderate to severe in 3.4% versus 0% respectively. Patients who had bilateral repairs were 4 times more likely to report the stapled side being more painful. There have been no recurrences in either group after 6 months. Follow-up continues.

Conclusion Early results indicate that mesh fixation by staples is unnecessary for the prevention of recurrence but may be associated with chronic groin pain.

GS008 RESULTS OF AN INTERVENTION TO IMPROVE COMPLIANCE WITH PROPHYLACTIC ANTIBIOTIC PROTOCOLS FOR ELECTIVE SURGERY

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Purpose To measure compliance with agreed protocols for prophylactic antibiotics for five elective procedures: TURP, cholecystectomy, hysterectomy, joint arthroplasty and herniorrhaphy.

Methodology An intervention study was used. Measures of compliance with the protocols for 659 (preintervention) and 518 (postintervention) procedures were monitored over two 6 month periods. Compliance was determined through medical record review. Statistical significance was determined by calculating the point estimate and 95% confidence intervals for the difference between proportions.

Results Compliance improved overall by 17.6%, (95% CI 12%–23%). Significant improvements: TURP 27%, (95% CI 14%–40%), and Hysterectomy 24%, (95% CI 16%–32%). Compliance remained low for cholecystectomy and hysterectomy.

Patients not receiving indicated prophylaxis, improved by 5.8%, (95% CI 1%–11%), excluding cholecystectomy (evidence is inconclusive).

The use of additional/alternative antibiotics varied between procedures and was high for joint arthroplasty (65%) and Hysterectomy (71%). Overall this practice declined significantly 8.4%, (95% CI 3%–14%).

Costs reduced from \$11.72 to \$10.53 per patient between the pre and post intervention groups. Adoption of the protocols could reduce costs to \$3.40 per patient.

Conclusions Compliance improved however there was large variation between the specialties before and after the intervention. The adoption of preventive strategies is fundamental to provision of safe patient care. The appropriate use of antimicrobials is also an important patient safety issue and is associated with substantial cost savings. Introducing change in health organizations is difficult.

GS009 SURGICAL HANDOVERS: WHAT INFORMATION IS NEEDED HANDING OVER AND HANDING BACK

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Introduction Patients deserve continuity of care but junior doctors need time off. Handover is an important aspect of ensuring that covering doctors are well informed.

Method 'The BOSS' generates patient lists (with blood results), ward lists and enables all radiology and pathology results to be viewed. This electronic system has been used in Geelong since 2003 and therefore was ideal for handover and handback. Patient lists were printed or viewed on a PDA wirelessly.

Some data could be automatically generated from the clinical information system without re-entry:

- (i) Location (Ward/bed number)
- (ii) Patient (Name/UR/Age/Day of stay)
- (iii) Consultant responsible for care/Treating Unit
- (iv) Results of latest blood tests

Other data has to be re-entered/updated by the registrar:

- (i) Updated Diagnosis and/or procedure
- (ii) Handover note (Free text) to describe treatment and summary of progress.

Results There were 35–40 General Surgical patients to cover each weekend. Each unit contributed about 5–12 of this number. The average time spent entering data before going off duty was 10 minutes.

We found that a Handover wizard prompted better data entry for the following information (i) Specialist availability, (ii) Priority for review, (iii) Current condition and trend of patient, (iv) Follow-up required (v) Resuscitation plan.

Handback was an equally important process to ensure the returning team are fully informed of events that have occurred while they were off-duty.

Conclusion A system of electronic handover enabled junior doctors to provide adequate information before going off duty. It proved popular and was perceived to reduce the time searching for information on patients during weekend rounds.

GS010 RURAL VS CITY BIOFEEDBACK – COMPARISON OF TWO TECHNIQUES IN 239 PATIENTS

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Introduction Biofeedback is an effective treatment for patients with faecal incontinence, yet little is known about how it works. This study investigated the effectiveness of a novel telephone-assisted biofeedback treatment protocol for patients living in rural areas.

Methods The novel protocol comprised of initial and final face-to-face assessments including treatment with manometry and transanal ultrasound biofeedback, interspersed by three treatments conducted purely via telephone. Standard treatment involved five face-to-face treatment sessions with manometry and ultrasound. Data gathered prospectively included incontinence and QOL scores and sphincter pressures.

Results 239 consecutive patients were treated. There were no significant differences in the demographic details or pre-treatment measures of the two groups. There were no significant differences between the rural or standard groups in any treatment outcome or measure. There were substantial, significant improvements after treatment in both groups including 54% mean improvement in patient's own rating of their incontinence ($t_{173} = 0.41$, $P = 0.41$); a mean decrease of 3.1 and 3.2 on the St Mark's incontinence score ($t_{173} = 0.31$, $P = 0.76$) and relative improvements of 128% and 130% in QOL index for the telephone-assisted and standard groups respectively ($t_{170} = 0.60$, $P = 0.55$).

Conclusion A less intensive regime of biofeedback appears to be equally effective as the standard intensive regime. This finding adds weight to the evolving concept that physical aspects of biofeedback treatment (such as manometry/ultrasound) may not be necessary in the treatment of most patients with faecal incontinence.

GS011P ANALYSIS OF THE MODIFIED ALVARADO SCORE IN A PERIPHERAL HOSPITAL: REDUCING THE NEGATIVE APPENDICECTOMY RATE

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Purpose The Modified Alvarado Score (MAS) combines clinical and laboratory findings to categorise patients with suspected appendicitis into 'unlikely', 'possible' and 'probable' groups. The purpose of this paper is to analyse the MAS in the management of suspected appendicitis.

Methods A retrospective casenote review of appendicectomies performed for the calendar years 1998, 2003, 2004 and 2005. Cases were identified using ICD 10. Demographic data, histology and the negative appendicectomy rate were recorded. MAS was calculated and compared with histological diagnosis. Statistical analysis by Chi-square was performed. The negative appendicectomy rate was re-calculated after removing the 'unlikely' cases.

Results 552 cases were reviewed (48% female; Median age 23 years (range 4–87 years). The negative appendicectomy rate was 23%. The MAS rankings were 96 patients (17%) 'unlikely', 191 patients (35%) 'possible' and 261 patients (48%) 'probable' appendicitis. In 4 cases the MAS was incalculable. Comparing histological findings to MAS, positive appendicitis was found in, 38%, 73% and 93% of the 'unlikely', 'possible' and 'probable' groups respectively ($P < 0.001$). If the 'unlikely' group was excluded, the negative appendicectomy rate decreases to 15%.

Conclusions Use of the Modified Alvarado Score ensures a standardised approach to the management of suspected appendicitis. Prospective application of the MAS may decrease the negative appendicectomy rate.

GS012P COLONOSCOPY: A LONG WAIT TO BE SEEN AND A LONG WAIT TO BE SCOPED – HOW DO WE IMPROVE?

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Background The waiting time for colonoscopy to investigate colonic symptoms is not yet a performance indicator defining quality of healthcare in Victoria. However, a long wait for colonoscopy can result in delayed treatment and a worse prognosis for those with colorectal cancer.

Method We retrospectively examined the waiting times for symptomatic colonoscopies at our institution before and after interventions designed to reduce them. Interventions introduced in January 2005 were: 1) dividing colonoscopy referrals into symptomatic, surveillance or screening; 2) establishing registrar review clinics; 3) consultants seeing only new referrals at clinics; 3) conversion of outpatient clinics to endoscopy lists; 4) more colonoscopy lists by the colorectal fellow. Mean values were compared using by the t-test.

Results Period 'before intervention' (BI), Aug 2003–July 2004, was compared to the period 'after intervention' (AI), Mar–Sept 2005. Number assessed at clinic BI 171 (15/month) vs AI 154 (22/month). Mean interval from referral to clinic assessment fell from 75 days to 32 days ($P < 0.05$). Number of colonoscopies performed was 128 BI and 79 AI (interim results). Mean waiting list time decreased from 85 to 55 days ($P < 0.05$). Mean interval from referral to colonoscopy decreased from 170 to 86 days ($P < 0.05$).

Conclusion Our interventions have reduced waiting times to be assessed in clinic and interval between referral to colonoscopy. More colonoscopy lists are likely to be required to further improve waiting times.

GS013P CONTINUITY OF CARE AND THE BALANCE BETWEEN WORK & LIFE: EXPERIENCE DURING GENERAL SURGERY TRAINING IN 3 METROPOLITAN PUBLIC HOSPITALS IN VICTORIA

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Patients deserve to be treated by doctors who are well informed. Surgeons need to have a healthy balance in their life. This paper looks at the first author's experience of handover and weekend cover for 3 consecutive surgical rotations.

At Geelong Hospital, there are 5 registrars and 1 fellow. Handovers are done electronically via the BOSS information system 1. The handover is supplemented by a verbal handover for urgent matters. Apart from the Friday night registrar, the others do not need to come in on the weekends to do ward rounds. The weekend registrar (on-site 8am–6pm) sees all the patients.

In St Vincent's Hospital, there are 3 registrars and 3 fellows. Saturday and Sunday ward rounds are performed by all 3 registrars with fellows from 2 of the 3 units sharing one of the days. A verbal handover is given to the on-call registrar (On-site 8am–10pm) for any urgent issues.

At the Northern Hospital, there are 4 registrars from 4 General Surgical Units. Verbal and sometimes handwritten handover is given to an unaccredited registrar/RMO at 9:30pm (Monday–Thursday) and on Saturdays after their ward rounds. On Fridays & Sundays, the registrar does a 24-hour shift (followed by working normally on Monday).

The Geelong rotation enables more time away from the hospital while an informative handover provides adequate continuity of care for the weekend registrar to manage the patients with the support of the consultant.

Reference

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GS014P

INTRA-ABDOMINAL ABSCESS AFTER LAPAROSCOPIC APPENDICECTOMY

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Background Several studies have reported an increased incidence of intraabdominal abscess following laparoscopic appendectomy. We reviewed the incidence of intraabdominal abscess following laparoscopic appendectomy at the two major teaching hospitals in the ACT over a 2-year period in order to document the local experience and compare this to current reports in the literature.

Methods Retrospective case review of all patients who underwent laparoscopic appendectomy between June 2003 and July 2005.

Results A total of 288 case records were reviewed. 13 cases of intraabdominal abscess were found, giving an overall incidence of 4.51%. The majority occurred in patients with perforated appendicitis (11/13, 85%) who underwent laparoscopic appendectomy and occurred despite peri-operative antibiotic therapy. Most abscesses were treated with percutaneous drainage and intravenous antibiotics; only 2 patients required reoperation for open washout.

Discussion Although the overall rate of abscesses after laparoscopic appendectomy was similar to literature reports, amongst patients with perforated appendicitis the incidence of abscess was very high (47%). This was not affected by antibiotic therapy or by primary operator (registrar vs consultant). Reports in the literature are inconclusive as to the possible benefit of conversion to open appendectomy in this setting.

Conclusions: Laparoscopic appendectomy is associated with a high risk of post-operative intraabdominal abscess for patients with perforated appendicitis. Whilst most patients make a full recovery without further surgery, this finding suggests that laparoscopic appendectomy may not be the gold standard of care for patients with perforated appendicitis.

GS015P

IS STERILITY COMPROMISED BY SURGICAL SITE MARKING

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Background Recent guidelines have made marking of surgical sites a mandatory requirement in an attempt to decrease wrong-site surgery. A study by Cronen *et al.* JBJS October 2005, took swabs pre and post preparation with betadine of a simulated marked surgical site on 20 subjects. In Cronen's study swabs to assess the effectiveness of the betadine preparation were taken after the betadine was allowed to dry for 10 minutes but no use of an agent to neutralize the active ingredient in betadine, iodine, was used. Use of sodium thiosulphate has been demonstrated to be effective in neutralizing iodine to allow accurate specimens for culture to be obtained.

Aim To determine if sterility of an operating field is affected by surgical site marking.

Method 20 volunteers participated in the study. The right forearm was chosen as the simulated marked surgical site and the left forearm was a control. A marking pen was used to draw a 4 × 5 cm arrow, surgeon initials (JR) and the date (12/1) on the right forearm. A bacterial swab was taken from the subjects left and right forearm. The left and right forearms were then prepared in our standard fashion with 10% povidone-iodine scrub solution. A bacterial swab was then taken from each forearm and placed in a sodium thiosulphate containing culture medium. Cultures were assessed after 5 days for growth. Results were analysed for significance using the student T test and were considered significant if $P < 0.05$.

Results Marking of the surgical site had no significant effect on the sterility of the simulated surgical site.

GS016P

PATIENT OUTCOMES AFTER SPHINCTEROTOMY FOR CHOLEDOCHOLITHIASIS

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Purpose To quantify (biliary-related) readmissions after sphincterotomy for choledocholithiasis and investigate the influence of subsequent cholecystectomy.

Methodology Notes of 310 patients who underwent sphincterotomy for choledocholithiasis (1995–2005) were retrospectively reviewed. Patients discharged with intact gallbladders were divided into two groups: Those wait-listed for subsequent elective cholecystectomy ($n = 137$, Group 1) and those in whom no plan was made to undergo cholecystectomy ($n = 96$, Group 2). Patient profiles, readmissions and outcomes were analysed. Comparison was also made with those who had cholecystectomy during their initial admission ($n = 77$, Group 3).

Results Group 2 were more likely to be older ($P < 0.0001$), have comorbidities ($P < 0.0001$) and have had first presentation with cholangitis ($P < 0.01$). Readmission rates for Groups 1 and 2 were high (29.9% and 23.2% respectively) and significantly higher than Group 3 (10.4%, $P < 0.01$). Readmissions decreased in Group 1 after cholecystectomy (8.8%). During acute readmissions, acute cholecystectomies were performed more in Group 1 than Group 2 (15.3% vs 4%, $P < 0.01$). The incidence of all complications was lower in Group 2 than Group 3 (5.1% vs 26%, $P < 0.01$), but there was one death during a readmission in Group 2.

Conclusion Patients with choledocholithiasis treated with sphincterotomy alone have high readmission rates, which reduce after cholecystectomy. However in patients for whom a decision has been made not to proceed to elective cholecystectomy (Group 2) the need for subsequent acute cholecystectomy is low, as are the complications, suggesting that the initial decision-making process to avoid surgery is appropriate in this frail group.

GS017P

PERFORMANCE INDICATORS FOR CHOLECYSTECTOMY

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Cholecystectomy in Geelong is performed by 13 General Surgeons and their advanced trainees. The aim of this study was to establish performance indicators for the cholecystectomy service.

Methods Data that had been entered during, or just after, admission was drawn from the hospital clinical information system (CORDIS). The case notes, pathology and surgical audits were used for accuracy and completeness. Performance indicators were derived by consensus and included length of stay, bile duct injury, clinically significant bile leak, significant complications, mortality, unplanned re-operations and readmissions.

Results There were 1244 cholecystectomies between January 2001 and September 2005; 1087 were performed laparoscopically and 157 open. The laparoscopic cases included 883 (81.2%) elective and 204 (18.8%) emergency/semi-urgently, with conversion rate of 4.6% for elective and 17.4% for emergency/semi-urgent.

Thirty (2.42%) patients had prolonged bile leak; 16 (1.29%) resolved and 14 (1.13%) required intervention. There were 13 (1.04%) unplanned re-operations and 37 (2.97%) unplanned readmissions. There were 5 mortalities

(0.4%) and no recognised major bile duct injuries. The incidence of other complications prolonging stay was 6.3% and 33.1% for laparoscopic and open procedures respectively. 823 intraoperative cholangiograms (66.16%) were performed. 41 patients (4.98%) underwent laparoscopic stone extraction and 11 had bile duct explorations. Preoperative ERCP was performed in 76 patients (6.1%), and postoperative ERCP in 47 with a success rate of 94%.

Conclusion The cholecystectomy service in Geelong was acceptable. The indicators could be used in other centres, enabling comparison of outcomes and performance.

GS018P PILONIDAL SINUS – IMPROVING THE KARYDAKIS OPERATION

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The Karydakis operation is the commonest procedure for Pilonidal Sinus in our Institution (eccentric excision with simple flap closure) and has had excellent results. However simple improvements have facilitated early discharge and reduced postoperative discomfort. These are based on the Bascom 'cleft-lift' operation.

Methodology

1. Local anaesthesia (with adrenaline) is possible even with large sinuses, and is preferable to GA in the prone position
2. The flap can be dissected with diathermy as the first step in the operation
3. The flap can be gently pulled across the cleft (after removing buttock straps) to readjust the marked limits of the lateral extent of excision
4. Only skin and dermis is taken as the 'ellipse' is excised starting from the lateral edge until the sinus is reached, and then only the sinus is excised (leaving healthy fat behind)
5. No sutures are needed to secure the flap base to the sacral fascia because it lies on the rolled-in fat without tension
6. The lower end can be deviated away from the midline by further lateral skin excision

Results 319 classical Karydakis operations from 1973 to 2004 had average hospital stay of 3 days and a recurrence rate of 3.5%. Since 2004, 45 modified Karydakis operations have had no recurrence, with majority home less than 24 hours. 21 (47%) were done under local anaesthesia.

Conclusions The Karydakis method eliminates two factors responsible for recurrence (the deep cleft and midline entry points for hairs). Simple modifications improve the outcome for patients.

GS019P THE USE OF THE KEYSTONE FLAP FOR RECURRENT PILONIDAL SINUS PROBLEMS

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The use of flaps, including the Karydakis method, is well established in the treatment of recurrent pilonidal sinuses. But what happens when all such flaps fail? The keystone flap with its multiple VY points and perforator based vascularity is an alternative method of reconstruction when all other reconstructive techniques have been found wanting and may even provide an initial management solution. It meets the basic requirements of avoiding mid-line excisions, obliteration of the natal cleft and the anal crease line and with reliable vascular supply, the flap is pain-free in execution.

This is a preliminary presentation to outline the details of this technique and the method of execution will be discussed in a series of five cases of recurrent pilonidal sinuses referred from general surgical units.

GS020P SMALL BOWEL OBSTRUCTION DUE TO OBTURATOR HERNIA: CT DIAGNOSIS

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Aim Obturator hernia, although a rare type of hernia, remains an important cause of intestinal obstruction in elderly emaciated individuals. Clini-

cally the problem lies in establishing an early pre-operative diagnosis and mortality is high with delayed treatment. Computerised tomography (CT) of the abdomen may improve the outcome by providing a definitive diagnosis for early treatment.

Methods A 76-year old lady presented with a 4-day history of abdominal distension. On examination she was frail and emaciated. The abdomen had features of ileus. The hernial orifices were clinically normal. Abdominal X-ray (Fig. 1) showed multiple air fluid levels in the small bowel. Initial treatment with intravenous fluids and nasogastric decompression failed and a contrast-enhanced CT scan of the abdomen was performed.

Results CT revealed dilated fluid filled small bowel loops down to the left pelvis (Fig. 2). A transition zone with a knuckle of small bowel (white arrow) caught between the left pectineus and obturator externus muscle (black arrows) was clearly seen (Figs. 3 & 4). This finding was pathognomonic of small bowel obstruction secondary to an obturator hernia.

Operative Findings Laparotomy revealed a classical Richter's hernia within the left obturator foramen. The knuckle of bowel was strangulated requiring a limited small bowel resection. The dilated foramen was closed with interrupted sutures. The patient made an uneventful recovery.

Conclusion CT findings help in the definitive diagnosis of obturator hernia. In the elderly emaciated individual, an early CT diagnosis of obturator hernia will prevent delays in initiating surgical treatment and improve the overall outcome.

GS021P PANCREATITIS SECONDARY TO HERPES ZOSTER: A NEW CLINICAL ENTITY WITH TREATMENT IMPLICATIONS

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Purpose Herpes zoster is the reactivation of latent varicella-zoster virus from the dorsal root ganglion and presents with a unilateral vesicular rash of dermatomal distribution. This reactivation can affect other organs or present as disseminated disease. Six case reports of pancreatitis in the setting of primary disseminated varicella are published. These patients were predominantly immunocompromised and suffered high morbidity and mortality. We describe two cases of pancreatitis secondary to herpes zoster. To our knowledge this association is not described.

Methodology An 86 year old female and a 69 year old male presented with acute pancreatitis of mild severity. A vesicular rash of the eighth thoracic dermatome predated this presentation by ten and six days respectively.

Results Elevated serum lipase >2000 U/L (<286 U/L) peaked in both patients ten days after the onset of the herpes zoster rash. Computerised tomography confirmed pancreatitis. Both described prior cholecystectomy, denied recent alcohol ingestion or abdominal trauma, had normal serum lipids and were not prescribed medications known to precipitate pancreatitis. With conservative ward management, both recovered, being discharged five days after admission.

Conclusion We propose that these cases of pancreatitis were secondary to herpes zoster. This assertion is supported by the exclusion of alternate aetiology; the rash preceding by days the peak of serum lipase; and the involvement of the eighth thoracic nerve root that also supplies visceral sensation to the pancreas. This association is of clinical importance as treatment with antiviral medications may aid the resolution of pancreatic symptoms.

GS022P SMALL BOWEL OBSTRUCTION SECONDARY TO BEZOAR IMPACTION: A DIAGNOSTIC DILEMMA

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Purpose Small bowel obstruction (SBO) is a common acute surgical problem. Bezoar impaction as a cause occurs infrequently and often leads to delayed treatment. The aim of this study is to review the diagnosis and management of a significant incidence of SBO resulting from bezoar impaction in our unit in a 1500 bed hospital.

Methodology Between 1999 to 2005, 43 patients were treated surgically for 45 cases of SBO secondary to bezoar impaction. The records of these patients were retrospectively reviewed.

Results The most common symptoms were abdominal pain, vomiting and constipation. 26 patients (60.5%) had previous gastric surgery. 16 of the remaining were edentulous. Overall, 28 patients (65.1%) had previous abdominal surgery. Plain abdominal radiography alone was ordered preoperatively for 26 cases (57.8%). The rest had either a CT scan or contrast study. Preoperative diagnosis was correct in 11 cases (24.4%); this only with the aid of CT scan, giving a diagnostic accuracy of 64.7% (11 of 17). The mean interval before surgery was 3.16 days (0 to 10 days). The most common site of impaction was the ileum and a synchronous site of impaction was present in 4 cases. 24 cases (53.3%) were treated successfully by milking of the bezoar into the caecum, 16 cases (35.6%) required removal via an enterotomy and 5 cases (11.1%) required a segmental bowel resection. Overall morbidity was 16.2% with one mortality.

Conclusions Bezoars causing SBO require definitive surgical treatment but are difficult to diagnose preoperatively. Preoperative CT imaging improves the diagnostic accuracy. Edentulous patients and a history of gastric surgery are significant predisposing factors.

GS023P

SURGICAL MANAGEMENT OF UPPER GASTROINTESTINAL MANIFESTATIONS OF FAMILIAL ADENOMATOUS POLYPOSIS

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Introduction FAP is an autosomal dominant condition characterised by the presence of greater than 100 colorectal polyps by the third decade of life.

The risk of developing colorectal cancer in these patients reaches 100%. Duodenal adenocarcinoma is considered to be the second major cause of death in FAP. We report our experience from a major Hepatopancreaticobiliary centre.

Methodology We identified all patients with FAP requiring upper GIT resections treated at our centre. Files and histopathology were retrospectively reviewed. Adenomatosis was classified as per Spigelman classification. We describe patient demographics, indication for resection, type of resection, histopathology, morbidity and mortality as well as patient outcomes and polyp recurrence rates after follow up with UGIT endoscopy.

Results We identified 10 patients between October 2001 and July 2005. Median age at time of resection was 51 years. 80% of the cohort were female. Median time since prophylactic colectomy was 11 years.

Six patients had Whipple's procedure, three patients had partial duodenectomy and one patient had a total gastrectomy. Combined morbidity was 50%, reoperative rate for complications 25% and there were no mortalities. All patients were followed up with annual endoscopic surveillance. Median follow up was 24 months. Polyp recurrence rate was 40%. There were no deaths due to duodenal cancer at follow up.

Conclusion With the use of regular surveillance and radical UGIT surgery, deaths from gastric and duodenal cancers can be prevented in patients with FAP. However, significant postoperative morbidity and ongoing UGIT surveillance should be expected.