ASSA-SAGES 2007

8 - 12 August 2007, Sun City

ABSTRACTS: SAGES 2007

Oral Presentations

Thursday 9 August 14h00 - 14h50

THE PREVALENCE OF PRECANCEROUS LESIONS AND MOLECULAR ALTERATIONS IN THE STOMACHS OF BLACK SOUTH AFRICANS

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Introduction. Gastric cancer ranks second as cause of cancer death worldwide, but among black South Africans its incidence is very low despite a high prevalence of *H. pylori* infection, including infection with high virulence substrains. It is still unknown how this so-called 'African enigma' can be explained.

Whether *H. pylori* infection leads to precursor lesions of gastric cancer in Africans is largely unknown. Aim of the present study was to evaluate the prevalence of gastric mucosal atrophy in a South African and a Dutch population, stratified by H. pylori sub-strain. Further, we studied the prevalence of intestinal metaplasia and molecular alterations in consecutive biopsies from a large pathology database.

Methods. Grade of gastric mucosal atrophy was measured in antral biopsy specimens from *H. pylori*-infected South African and Dutch subjects using stereology that yields a volume percentage of glands (VPGL) for each specimen. For subtyping of *H. pylori* strains, bacterial housekeeping genes were PCR amplified and sequenced and assigned to an ancestral *H. pylori* type, if at least 80% of nucleotides corresponded with the ancestral sequences. Immunohistochemistry for p53 and COX-2 was performed in order to evaluate the prevalence of molecular differences between high-risk and low-risk populations.

Results. Grade of antral mucosal atrophy was significantly higher in South Africans (mean VPGL 37.6%) compared to the Dutch (mean VPGL 46.5%) ($p < 0.001$). No significant differences were found between South Africans infected with the two African *H. pylori* substrains. In addition, no difference South Africans infected with a European *H. pylori* substrain as compared to the Dutch population were seen. Intestinal metaplasia was seen in 15.6% of a 1000 consecutive biopsies studied. Immunohistochemistry showed less frequent alterations of p53 and Cox-2 genes in South Africans as compared with subjects in high-risk areas.

Conclusion. In black South Africans, *H. pylori* infection leads to gastric mucosal atrophy. Gastric atrophy occurred in all *H. pylori* subtypes associated with Southern Africa so that inherent characteristics associated with sub-strains cannot be responsible the low incidence of gastric cancer in this population. Intestinal metaplasia occurred commonly but is infrequently associated with molecular alterations associated with cell cycle regulation. This strongly suggests that the African enigma is not a result of bacterial virulence factors but rather due to host specific factors.

CYTOKERATINS – A TOOL IN DIAGNOSING OESOPHAGEAL CANCER

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Objectives. To evaluate the use of Cytokeratins in blood as a screening tool in the diagnosis of esophageal squamous cancer.

Methodology. An antibody dependent ELISA immunoassay was used to measure Cytokeratins in the blood of patients and controls. Over a period of 3 years 82 subjects were prospectively included in the study. Of these 35 had cancer of the oesophagus, 33 were normal or turned out to have been benign conditions and 14 had other cancers. The final diagnoses were confirmed by histology.

Results. Using logistic regression cancer of the oesophagus could be predicted from Cytokeratin levels and age. Logistic regression function was Y = predicted outcome = -6.7817 + 2.7849 (cyt category) + 0.1132 (age).

Where cytokeratin category = 1 if cytokeratin is > 0. Best classification for positivity was Y > 0.24 with sensitivity = 81.6%, specificity = 84.9%, false positive rate = 15.1 and false negative rate = 18.4%.

Comment. Cancer of the oesophagus is a very common condition in South Africa. It is diagnosed late as the only sure way to diagnose is by endoscopy and biopsy, procedures that are not readily accessible to most of the population. There is a need for a test that would help select such patients early so that they may be appropriately referred earlier than they present at the moment.

Surprisingly in this study gender and race were not positively contributory towards screening for a positive diagnosis of cancer of the oesophagus.

This test involves only blood tests. It can therefore be performed wherever blood can be collected. Cytokeratine levels used in conjunction with age showed a promising predictive value, which could be used for screening purposes.

SURVIVAL IN PATIENTS WITH REFRACTORY COELIAC DISEASE AND ENTEROPATHY ASSOCIATED T-CELL LYMPHOMA

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Background. Coeliac disease may be regarded as refractory disease (RCD) when symptoms persist or recur despite strict

adherence to a gluten free diet. RCD may be subdivided into types I and II with a phenotypically normal and aberrant intraepithelial T-cell population, respectively. RCD I seems to respond well to azathioprine/prednisone therapy. RCD II is usually resistant to any known therapy and transition into Enteropathy-Associated T-cell Lymphoma (EATL) is common.

Aim. The aim of this study is to provide further insight into RCD and the development of EATL, by reporting on long term survival, risk of transition of RCD into EATL in one of the the largest cohorts of patients with complicated coeliac disease in a single center.

Design and methods. We have retrospectively compared four groups of patients with complicated coeliac disease: 43 RCD-I, 50 RCD II (total), of whom 26 RCD II who developed EATL after a period of refractoriness to a gluten free diet (*secondary* EATL) and 13 EATL patients without preceding history of complicated coeliac disease (*de novo* EATL). Every effort was made to ensure correct classification and accurate patient allocation.

Results. No coeliac disease related mortality is recognized in the RCD I group. The overall five year survival in RCD I is 96%, in RCD II (total) is 58% (p=0.001) and in RCD II after developing EATL is only 8%. The 2-year survival in the *de novo* EATL is 20% versus 15% in *secondary* EATL (p=0.63). Twenty eight (56%) from 50 patients with RCD-II died, 23 (46%) due to EATL and 4 due to progressive refractory state with emaciation and one from neurocoeliac disease.

Conclusion. Remarkably, no patient with RCD I developed RCD II or EATL within mean follow up of five years (range 2-15 years). Fifty two percent of the RCD II patients developed EATL within 4-6 years after the diagnosis of RCD II. More aggressive therapy seems necessary in RCD II and EATL.

RISK OF MALIGNANCY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE TREATED WITH AZATHIOPRINE OR 6-MERCAPTOPURINE: THE CAPE TOWN EXPERIENCE

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Introduction. The benefits of the use of Azathioprine (AZA) and its metabolite 6-Mercaptopurine (6-MP) in the treatment of Inflammatory Bowel Disease (IBD) are well established. However concern regarding the long-term use of these agents and the induction of certain malignancies particularly lymphoma and skin cancers have been reported in renal transplant and rheumatoid arthritis patients. In IBD patients however, several retrospective studies have not shown the risk of malignancies to be significantly higher in patients treated with these agents. We investigated the risk of malignancy associated with AZA or 6MP among IBD patients receiving care in Cape Town.

Methods. We conducted a retrospective cohort study based on clinical and pathology records of patients attending the IBD clinic at Groote Schuur Hospital from 1960 to 2006. Records were reviewed for: patient demographic characteristics, the nature and extent of the disease, the duration of treatment with AZA/6MP and the development and type of malignancy. Data on the use of AZA or 6MP was grouped into the "treatment" group, whilst those not treated with these agents were classified as the "no treatment' group.

Results. The records of 1217 patients were reviewed. The median age of the cohort was 33 (IQR 6-81) at the last follow-up and the median age at diagnosis was 31. The majority of the cohort (61%) was female. The median years of IBD follow-up was 11.

A total of 672 (57%) patients have never been treated with AZA/6MP, while 135 (12%) used AZA and 69 (6%) were given 6MP: in 42 patients (4%) AZA or 6MP treatment was stopped and no treatment data were available for 21% of the cohort.

There were a total of 54 cancers (4.4% of the cohort) identified in 51 patients. The Colorectal cancers were the most common (10 cases including one case of high grade dysplasia colon), followed by Non-Hodgkin's lymphoma (NHL), basal cell carcinoma and breast cancer (6 patients each). Overall 7.8% of participants receiving AZA/6MP developed a cancer (n=16) compared to 4.3% in the "no treatment" arm (n=29), p=0.039.

The incidence of CRC and NHL in the two groups was not statistically significant (p=0.488 and 0.654 respectively); however skin cancers were significantly more common among patients receiving AZA or 6MP (p<0.001).

In a logistic regression model including age, gender, type of IBD, disease extent, and use of AZA or 6MP the relative odds of cancer were independently associated with the duration of follow-up (OR: 1.11; 95% CI: 1.04-1.19; p=0.001) and the duration of treatment with AZA/6MP (OR: 1.02;95% CI: 1.00-1.03; p=0.018).

Conclusion. In this large series we show a statistically significant increased risk of cancer particularly the skin cancers in IBD patients treated with the thiopurines. This risk was influenced by longer follow-up periods and duration of treatment with AZA or 6MP. This study re-inforces the need for careful and close follow-up of patients with IBD on AZA or 6MP, especially those who have been on this treatment for prolonged periods.

COLECTOMY FOR ULCERATIVE COLITIS: INFLAMMATORY BOWEL DISEASE DATABASE AUDIT AT GROOTE SCHUUR HOSPITAL, CAPE TOWN

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Introduction. Colectomy in patients with ulcerative colitis (UC) is indicated if medical therapy has failed or cancer-dysplasia is identified in the diseased colon. Following colectomy many patients have bowel continuity restored by the creation of an ileo-anal pouch (restorative proctectomy). Recently there has been renewed focus on the role of colectomy in ulcerative colitis.

Aim. To determine the colectomy rate and factors associated with colectomy.

Methods. The Inflammatory Bowel Disease database was analysed and all patients with UC undergoing colectomy at Groote Schuur Hospital between 1957-2007 were identified and included in the study.

Patient demographics, disease characteristics and surgical details were extracted.

Indications for colectomy were categorised as follows:

1. Fulminant disease
2. Chronic poorly controlled disease
3. Cancer or dysplasia
4. Other indications for colectomy.

Chi-square test, Fisher's exact test and Student's t-test were used as appropriate.

Results. 172/ 621 (27.7%) patients with UC underwent colectomy. Complete data on 127 (73.8%) patients was available. The following factors were significantly associated with colectomy (chronic disease and fulminant colitis groups): non-smoking (p=00001), extensive disease (p=0.0001) and immunomodulatory exposure (p=0.0003). The overall number of males that underwent colectomy was 52/245 (21.2 %).

Discussion. Our colectomy rate is higher than that reported in the literature but this may reflect referral centre bias. Non-smoking, extensive disease and immunomodulatory exposure, as anticipated, were associated with colectomy. Ciclosporin and biological therapy was not used in any of the patients in this study and the contribution of these agents to disease control and rate of colectomy remains uncertain.

Oral Presentations

Saturday 11 August 14h00 - 14h50

OUTCOME OF PATIENTS WITH HIGH-RISK BLEEDING PEPTIC ULCER DISEASE UNDERGOING ENDOSCOPIC INTERVENTION AT GROOTE SCHUUR HOSPITAL

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Introduction. Emergency endoscopy constitutes 24% of the total number of endoscopies done at our hospital per annum.

Aims. To determine the surgical and mortality rates after therapeutic endoscopy for high risk bleeding peptic ulcer disease (Forrest Classification 1a to 2b).

Methods. 125 patients with high risk peptic ulcers underwent therapeutic intervention (adrenalin injection) between January 2004 and December 2006 (mean age 56±15.3 years [range 20-87]; 63.2% males). Statistical comparisons were made using Fisher's exact, Chi square and Student's t-tests as appropriate.

Results. 14/125 (11.2%) patients required surgery for bleeding not controlled at initial (7.2%) or second-look endoscopy (4%). 18/125 (14.4%) required second-look endoscopy. Surgical vs. non-surgical patients were more likely to have Forrest 1a ulcers (7/14 vs. 6/111; p=0.0001), a higher Rockall score (6 vs.5; p=0.007), require more blood units (9 vs. 3; p=0.0001), and higher mortality (5/14 vs. 11/111; p=0.018). Overall 16/125 (12.8%) patients died; 4.8% by day 3 and 10 8% by day 30. Patients who died were older (64 vs. 54 years; p=0.02), had a higher Rockall score (7 vs. 5; p=0.0001), required more blood units (8 vs. 3; p=0.0001), had a higher rebleed rate (9/16 vs. 18/109; p=0.001) and higher surgery rate (5/16 vs. 9/109; p=0.01). Overall 73/125 (58.4%) patients were using NSAID or salicylates.

Conclusion. Our rebleed, surgical and mortality rates compare favourably with those reported in the literature, despite our use of adrenalin therapy alone at endoscopy. This study supports the use of the Rockall score to predict outcome. There is a high background prevalence of NSAID/salicylate use.

IS THERE A ROLE FOR SALVAGE TIPS IN PATIENTS WHO CONTINUE TO BLEED FROM OESOPHAGEAL VARICES DESPITE ENDOSCOPIC INTERVENTION?

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Background. Endoscopic therapy is the treatment of choice to control acute bleeding from oesophageal varices. Transjugular portosystemic stenting (TIPS) provides minimal access shunting in high risk patients who continue to bleed despite endoscopic intervention.

Aim. This study tested the validity of the hypothesis that emergency TIPS would reduce portal pressure sufficiently to stop recurrent variceal bleeding and death from oesophageal varices.

Methods. Data were collected prospectively on all patients managed with TIPS following failed endoscopic therapy for bleeding oesophageal varices between July 1991 and August 2006. Median survival and cause of death were determined.

Results. Nineteen patients (15 men, 4 women), mean age 52 years (range 32-68 years) were evaluated. Aetiology of portal hypertension included alcoholic cirrhosis (15), haemochromatosis (1), hepatitis C cirrhosis (1) and idiopathic cirrhosis (1). Five patients required the use of a Sengstaken-Blakemore tube prior to TIPS. Bleeding was from oesophageal varices in eighteen and gastric varices in one patient. An average of 4.3 interventional endoscopies (1.4 bandings and 3.3 injection sclerotherapies) and an average of ten units of packed red cells were transfused per patient. Eleven patients died, five due to recurrent variceal haemorrhage (1 died during the TIPS procedure), five from hepatic failure and one from myocardial infarction. Eight patients left hospital alive. None of the survivors developed encephalopathy.

Conclusion. Continued variceal bleeding is associated with a high mortality. When endoscopic therapy failed, TIPS successfully controlled bleeding in 74% of patients with a 42% survival.

TRANSPLANTATION MANAGEMENT OF INTESTINAL FAILURE IN INFANTS AND CHILDREN

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Introduction. There is a need for effective management of intestinal failure (IF) and intestinal failure associated liver disease (IFALD) including transplantation.

Aim. To review the trend in referrals and progress made in transplant management of children with IF and IFALD in the National Intestinal Transplant Unit for the United Kingdom.

Subjects and methods. 226 patients with IF and/or IFALD were referred for assessment for transplantation between 1992 and 2007. 107 were recommended for transplant, 39 died on waiting list and 4 improved. Diagnoses of the 60 children who underwent transplant (17 isolated livers; 15 for short bowel with the expectation of eventual full adaptation and 2 as a bridge to later intestinal transplant) and 43 were intestinal transplants short gut syndrome 36, motility disorders 18, mucosal disorders 6 (23 gastroschisis, 9 atresia, 8 aganglionosis , 6 pseudo-obstruction, 6

congenital diarrhoea, 5 necrotizing enterocolitis, and 3 volvulus). Of the 43 intestinal transplants 9 were isolated small bowel (ISBTx) and 32 combined liver and small bowel (CSBLTx); 8 whole liver and intestine and 24 with size reduction of liver and/or bowel. The median age at transplant was 3.4 yrs (range 6 months to 16 yrs).

Results. Overall 33 are alive; 31 are on full enteral feeds. Actuarial survival with up to 7-year follow-up is 64% for ILTx, and ±-50% for intestinal transplants.

Conclusions. Recently in the UK there has been an increase in referrals and transplants for IF. Survival in good health on full enteral feeds can now be achieved in the majority of those transplanted in the UK.

DIAGNOSTIC YIELD OF SIGMOIDOSCOPY AND COLONOSCOPY IN DAILY CLINICAL PRACTICE: IMPLICATIONS FOR COLORECTAL CANCER SCREENING

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Introduction. In The Netherlands, the scale and optimal mode of CRC screening are still being debated. One of the major issues – among others – is whether a sigmoidoscopy or colonoscopy should be performed in this setting with particular emphasis on the potential differences in yield and spatial distribution of colorectal carcinomas and (advanced) adenomas. Our primary objective was to quantify the prevalence and location of (advanced) colonic neoplasms. A secondary objective was to assess the predictive value of distal colonic findings with respect to advanced neoplasms in the proximal colon.

Methods. A prospective multi-centre study (N=18) evaluating all colonoscopies and sigmoidoscopies performed in Northern Holland during a three month period in 2005.

Results. In total, 5,652 colonoscopies and 3,444 sigmoidoscopies were performed in 8,637 patients. The caecal intubation rate for colonoscopy was 83%. In patients with CRC (N=396), the tumor was located in the distal colon and proximal colon in 75% and 25% of cases, respectively. Of all patients right-sided advanced neoplasms (N=225), 51% had a normal appearing distal colon, whereas 49% had a synchronous polyp (59% polyp >1.0 cm and/or adenoma, 41% hyperplastic/not specified). Men were more likely than women to have advanced neoplasms (11.8% for men versus 9.4% for women, OR corrected for age is 1.3; 95% CI 1.14 to 1.52; $p<0.0001$). Hyperplastic polyps and small adenomas alone did not significantly increase the prevalence of advanced proximal neoplasia or proximally located CRC compared to no distal polyps. Distally located advanced neoplasms proved to be most indicative for the presence of advanced proximal neoplasia (11.6%; adjusted OR=2.9; CI 2.0-4.2, $p<0.0001$).

Conclusion. More than 10% of lower G-I endoscopies yielded an advanced neoplasia. Although screening trials are warranted to validate the prevalence and distribution of advanced colonic neoplasms, our data demonstrate that screening sigmoidoscopy would have missed 25% of cancers and advanced neoplasms, initially. In addition, although distally located advanced neoplasms bear the greatest risk for having a proximally located advanced neoplasm, there are no reliable distal markers to accurately determine which patient should undergo evaluation of the proximal colon since 52% of patients with a proximal neoplasm has a normal appearing distal colon. Therefore, an endoscopic screening program should incorporate colonoscopy as the primary screening tool.

VIRAL KINETICS OF HCV GENOTYPE 5 IN SOUTH AFRICAN PATIENTS TREATED WITH PEGYLATED-INTERFERON-ALFA AND RIBAVIRIN

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Background. Viral kinetics of HCV-RNA during Pegylated-interferon-alfa (Peg-IFN) and ribavirin combination treatment is different between HCV genotypes 1 and 4 versus genotypes 2 and 3. Early viral kinetics was shown to correlate with sustained viral response (SVR), and differences in the early viral kinetics may guide individualization of treatment, including the use of shorter treatment duration in case of rapid viral response (RVR). HCV genotype 5 is most common in South-Africa but its viral kinetics have not previously been studied.

Aim. This is the first study of HCV-RNA genotype 5 kinetics during treatment with Peg-IFN-α2a in South-Africa, in comparison to historical controls with same treatment for genotypes 1 and 2-3.

Methods. Hepatitis C virus (HCV) RNA was measured (Roche COBAS TaqMan, LD=5 IU/ml) in 8 chronically HCV genotype 5 infected patients at baseline prior to starting Peg-IFN-α2a and ribavirin and then at 1, 2, 4, and 7 hours, and at days 1, 2, 3, 4, 7, 14, 21 and 28 of treatment, as well as end of treatment at 48 weeks and 24 weeks of follow-up. All patients were Caucasian, naïve to treatment with abnormal liver functions. Cirrhosis was excluded by histology and/or sonography. Viral kinetics results were compared to historical controls of HCV genotypes 1, 2 and 3 from the DITTO-HCV study (Zeuzem *et al.*, 2003). The non-parametric Mann-Whitney and Fisher exact tests were used to verify statistical significance of differences between genotypes.

Results. Baseline viral load in genotype 5 patients was 6.3 log IU/ml, similar to that observed in previous studies with other genotypes. The first phase viral decline in genotype 5 patients was significantly ($p<0.03$) more pronounced (mean 2.0 log IU/ml) than that of genotype 1 (1.2 log), and similar to that observed for genotypes 2-3 (2.3 log). Viral decline pattern in all genotype 5 patients was bi-phasic, like for genotype 2-3 patients, and did not show a transient rebound in HCV-RNA towards the end of the week before the next Peg-IFN injection, as seen in some genotype 1 patients treated with Peg-IFN-α2a. The second phase decline slope was significantly ($p<0.01$) faster for genotype 5 (mean 1.6 log/week) than genotype 1 (0.7 log/week) and similar to that of genotype 2-3 patients (1.5 log/week). RVR (<50 IU/ml at week 4)

was observed in 75% of genotype 5 patients, significantly (p<0.003) more than genotype 1 (14%) and similar to genotypes 2-3 (86%).

Conclusions. HCV genotype 5 early viral kinetics are significantly more rapid than HCV genotype 1 kinetics and similar to those seen for HCV genotypes 2-3. These results may warrant clinical trials to test shorter treatment for HCV genotype 5 patients.

Poster Presentations

Session 1: Thursday 9 August 13h30 - 14h00

GASTROINTESTINAL SYMPTOMS IN DIABETIC PATIENTS AT PELONOMI HOPSITAL

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Introduction. Gastrointestinal disorders are common among all people, including those affected by diabetes.

Aim

1. To determine the presence of gastrointestinal symptoms in diabetic patients.

2. To determine if the patients are seeking help for the mentioned symptom

3. To assess the frequency, duration and impact on daily activities.

Method. Adult patients attending diabetic clinic were interviewed using a questionnaire. 141 patients were obtained. The study commenced in August 2006 and was completed in November 2006 and was approved by the Ethics Committee

Results. In decreasing order of frequency: constipation, heartburn, feeling of incomplete evacuation, lot of gas in the abdomen, abdominal pain, sucking sensation, nausea, increased flatus, belching and abdominal distension were the common symptoms with frequencies of 46%, 43%, 38%, 36%, 33%, 29%, 26%, 24% 23% and 19% respectively. 95% had no difficulty with swallowing. 84% had no early satiety.

Constipation had effect on daily activities in 21% of the sufferers, followed by abdominal pain and feeling of incomplete evacuation with 16%. For the rest the effect was at least less than 10%.

9% of patients with abdominal pain and heartburn consulted. The rate was at least less than 4% for the other symptoms.

28% of patients never had symptoms, followed by 16% who had a combination of two symptoms. Majority had symptoms for less than a week per month.

Conclusion. At least half of diabetic patients in this clinic have a gastrointestinal complaint. It is recommended that patients with diabetes should be routinely asked about these symptoms.

OESOPHAGEAL TRANSIT ABNORMALITIES ASSOCIATED WITH ELEVATED RESIDUAL PRESSURE OF THE LOWER OESOPHAGEAL SPHINCTER IN POST FUNDOPLICATION PATIENTS

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Introduction. Multichannel intraluminal impedance (MII) after fundoplication provides objective evidence of oesophageal clearance. Oesophageal clearance is impaired in the majority of patients with post fundoplication (PF) dysphagia irrespective of the presence of a normal or abnormal anatomy of the fundoplication.

Aim. The aim of the study was to evaluate the association of the lower oesophageal sphincter pressure (LESP) and residual pressure (RP) with impaired clearance of the oesopaghus as measured by MII in PF patients.

Methods. We evaluated 40 consecutive patients referred for MII and manometry PF. These patients were referred with symptoms of dysphagia and/or symptoms related to GORD. 19 of the 40 patients had subsequent 24h pH-impedance studies. The LESP and RP were compared between patients with impaired clearance of the oesophagus and normal clearance.

Study population. The age of the patients ranged from 32 yrs to 71 yrs with an average of 49 years. 40% (16) of the patients were male. The time interval PF ranged from 7 months to 18 years with an average of 6 years.

Results. 11/40 patients had impaired clearance (3 moderate and 8 severe). 3 of the 11 patients had dysphagia. None of the patients had an increased LESP. 2 of the patients had the manometric waveform diagnostic of achalasia and 1 of nutcracker and 5 of IEM. The mean LESP of the impaired clearance group was 25.5 (20-31) vs. 20 (17-23) p=0.06. The mean RP of the impaired clearance group was 10 (8-13) vs. 6 (5-7) p=0.003.

Conclusion. Impaired oesophageal clearance was associated with an abnormal RP in PF patients. The LESP in PF patients was not associated with impaired clearance or dysphagia. Increased RP is an abnormal finding in PF patients and may contribute to the development of dysphagia.

GASTRIC CARCINOMA IN THE SOUTH AFRICAN POPULATION – PRETORIA EXPERIENCE

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Introduction. Gastric carcinoma develops through a series of precursor lesions. The disparity in clinical outcome of *H. pylori* is most noticeable in Africa where high infection rates are coupled with a low frequency of carcinoma, the so-called "African enigma".

Aim. To help clarify the cascade of events in the development of gastric carcinoma, tumours from the Caucasian and African population were selected and compared in a tissue micro array

Material and methods. All cases of gastric carcinoma were retrieved from the archives of the University of Pretoria (1995 - 2006). Only cases of intestinal type carcinoma of the distal stomach were included in the study population. A wax block from each case was submitted for the preparation of a tissue micro array (TMA). 3 tissue cores from each case were placed in the array. Sections prepared from the TMA were submitted for immunohistochemistry – CEA, HER2/neu, p53, and p16, MLH-1, MSH-6, E-cadherin, B-catenin and EBER.

Results. See table on p. 610.

Conclusion. In the CEA negative group, the Caucasian females are much older than the African females. The expression of the markers is similar, except for a higher expression of MLH-1 in the African females. The male patients had similar profiles.

In the CEA positive group, the African females had a high incidence of lymph node metastasis. The Caucasian females had a

	Caucasian females	African females	Caucasian males	African males
Total cases	14	17	24	29
H. pylori positive	1	4	5	1
Intestinal metaplasia	7	9	12	19
Lymph node metastasis	7	11	16	18
CEA positive	6	10	19	21
HER2/neu positive	7	7	12	9
p53 positive	7	14	20	20
p16 positive	9	12	16	24
MLH-1 positive	6	13	15	17
MSH-6 positive	11	17	22	29
E cadherin positive	9	17	24	21
B catenin positive	5	7	9	10
EBER positive	0	2	4	1

high expression of HER2 and low expression of p53. The opposite occurred in the African females. In the male patients, the profile is again similar, except for a high incidence of intestinal metaplasia in the African patients. The differences in the groups are small and not significant.

PRIMARY DUODENAL STENTING FOR MALIGNANT OBSTRUCTION WITH SELF-EXPANDING METAL STENTS (SEMS)

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Aim. To audit the efficacy of SEMS as a primary intervention for malignant duodenal obstruction.

Background. Duodenal obstruction secondary to advanced malignancy is difficult to palliate. Surgical bypass is frequently inappropriate or contra-indicated due to advanced disease or co-morbidity. SEMS are gaining acceptance internationally as an alternative to surgery.

Method. Patients with clinical and endoscopically proven gastric obstruction and relative contra-indication to surgical bypass (locally advanced tumour n=14, metastatic disease n=4) were considered eligible. A side-viewing duodenoscope was used to place the SEMS under direct vision and combined with fluoroscopy. Data were collected prospectively.

Results. 17 patients, median age 67 years (range 45-76) underwent SEMS placement. The obstruction was due to pancreatic adenocarcinoma (n=13), cholangiocarcinoma (n=1), gallbladder carcinoma (n=1) and extrinsic compression from metastatic adenocarcinoma (n=2). The site of obstruction was D1D2 (n=8) and D2D3 (n=9). There was one technical failure and this patient subsequently had a surgical bypass. In the 16 technically successful stent placements, 15 patients resumed oral intake (n=3 liquid, n=6 soft diet, n=6 full diet) and one failed (proximal jejunal obstruction after succesful relief of duodenal obstruction). 8 patients required additional biliary stenting. All patients were discharged from hospital. Median survival following SEMS was 47 days (range 15-156) with two patients still alive. One patient was lost to follow-up. There were no immediate complications.

Conclusion. SEMS provides good palliation for malignant duodenal obstruction in patients unsuitable for surgery.

THE EPIDEMIOLOGY OF GASTRO-OESOPHAGEAL REFLUX DISEASE (GORD) AT JOHANNESBURG HOSPITAL

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University of the Witwatersrand Medical School

Aims. To determine the epidemiology of gastro-oesophageal reflux disease (GORD) at Johannesburg Hospital.

Methods and study type. 6213 patient files were retrospectively analyzed from the gastro-enterology clinic at Johannesburg Hospital. 1022 of these patients were diagnosed with GORD.

Results. 16% of patients out of the total number of patients consulted at the clinic were diagnosed with GORD. Out of these patients: 56% had erosive disease, 8% had non-erosive disease and 36% were unspecified as to type of disease. The age group most commonly affected was between 50 and 70 years old (432 patients) Females were more affected than males (642 vs. 380) while males had a higher incidence of severe erosive disease and Barrett's oesophagus (6.58% vs. 5.30%). The incidence of disease was highest in the Caucasian population in comparison to African, Indian and other races and this group had the highest incidence of Barrett's oesophagus (7.49%). Proton pump inhibitors were most widely used drugs in all forms of the disease, whilst Histamine antagonists were restricted to milder forms of the disease and were prescribed less overall.

Conclusions. In terms of spectrum of disease, 36% of our patients were unspecified as to whether they had erosive or non-erosive disease. We therefore recommend that a policy of improved documentation be implemented in clinics. Another valid issue which we were able to highlight was the need to standardize and perhaps reform treatment guidelines of GORD in South Africa.

THE PREVALENCE OF GASTROINTESTINAL SYMPTOMS IN DIABETICS WITH REFERENCE TO DURATION AND CONTROL OF DIABETES

Nanabhay YS, Barrow P, Mahomed A, Karlsson K
University of the Witwatersrand Medical School

Objective. To determine the prevalence of gastrointestinal symptoms in diabetic patients and whether there is any correlation between the duration and/or the control of diabetes with the prevalence of these GIT symptoms.

Background. Individuals with diabetes mellitus have been

reported to be particularly susceptible to gastrointestinal (GIT) symptoms, but a causal link remains poorly understood.

Methods. 213 diabetic patients over 18 years of age attending the Johannesburg Hospital Diabetic Outpatient Clinic were randomly assessed using interview-questionnaires. For statistical analysis purposes we grouped the GIT symptoms under broader headings of frequently, infrequently and never.

Results. 86.4% of the participants experienced one or more of the GIT symptoms infrequently, and 10.8% experienced three or more symptoms frequently. Abdominal bloating was the most common reported symptom and faecal incontinence the least. The overall result showed very little correlation between the duration and / or control of diabetes with the prevalence of GIT symptoms.

Conclusion. GIT symptoms are more common in individuals with diabetes mellitus, but there is very little evidence to suggest that there is any correlation between the duration and control of diabetes with the prevalence of GIT symptoms. Abdominal bloating and heartburn were the most prevalent gastrointestinal symptoms in diabetic patients. However, this comparison did not demonstrate any correlation between the type of diabetes present and the prevalence of specific gastrointestinal symptoms. Heartburn was the only symptom that did in fact increase in frequency with increasing duration of illness.

980 GASTROSCOPIES IN A SINGLE REGIONAL UNIT IN THE WESTERN CAPE – WHAT DO WE SEE?

Carlos Varela, Denis Allard
University of Cape Town

Introduction. We reviewed retrospectively diagnostic gastroscopy reports of 2005 done at one of the busiest regional Gastrointestinal (GI) unit in the Cape Town metropolis. The procedures were done by surgical doctors at various levels of expertise. They followed no particular protocols other than their personal best medical practice.

Aim. This audit will serve as a starting point to establish an upper GI protocol for regional hospitals in the Western Cape.

Method. All gastroscopy reports from1 January to 31 December 2005 were reviewed. Gender, age, pathological findings and treatment recommendations were recorded.

Results. Of the 980 patients, 500 were males (51%) and 480 females (49%). Male patients were more often in their 5th and 7th decade and female patients in their 5th and 8th decades respectively. Only a quarter of the patients (26%) had had previous medical treatment aimed at gastric symptoms. Another 26.1% of the patients had had a previous upper GI scope. Ninety-one percent of the procedures revealed pathological findings with the following distribution: Stomach (29.3%), Oesophageal (26%) and Duodenum (12.6%). The most common pathology found was peptic ulcer disease (24%), a hiatus hernia (18.1%), and reflux oesophagitis (14.5%). Most cases had more than one pathological finding and 11.5% had biopsies. Treatment with Proton Pump Inhibitors (PPI) was instituted in 44.5% of the patients.

Conclusion. In the busiest diagnostic upper GI scope unit of the Western Cape 91% of the procedures revealed pathology. Acid disease and lower oesophageal sphincter (LES) incompetence are the most common encountered pathologies. PPI treatment is the most single utilised anti-acid. An upper GI protocol can help to uniformise the current practice.

Poster Presentations

Session 2: Friday 10 August 13h30 - 14h00

ACUTE LEUKAEMIA AFTER INFLIXIMAB TREATMENT OF CROHN'S DISEASE

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Introduction. Infliximab has revolutionized the management of fistulizing Crohn's disease. Despite widespread use there remains concern about the safety of infliximab, particularly regarding infectious and neoplastic complications.

Patient presentation, investigations and progress. A 42yr old male received an induction dose (5 mg/kg at weeks 0, 2 and 6) of infliximab for Crohn's disease complicated by entero-cutaneous fistulae on the anterior abdominal wall. The fistulae were refractory to standard medical therapy and he was maintained on azathioprine. Eight months after completion of the induction dose he presented with symptoms of anaemia and a bleeding diathesis. There was no hepatosplenomegaly or lymphadenopathy. A full blood count revealed a pancytopenia. A viral screen, Vitamin B_{12} and folate levels, collagen vascular screen and chest radiograph were non-contributory. Bone marrow aspiration and trephine biopsy revealed an acute leukaemia. Cytogenetics demonstrated a complex karyotype including the BCR-ABL fusion gene [t(9,22)]. After induction chemotherapy the leukaemia went into morphologic and molecular remission. He is currently being assessed for suitability for imatinib mesylate treatment. Despite initial closure with infliximab, the three fistulae recurred and remain with moderate drainage.

Conclusion. TNF-α inhibits growth of human leukaemia progenitor cells and thus induces suppression in various leukaemic cell lines. This effect is reversed with anti-TNF-α antibodies. Considering that acute leukaemia is a life-threatening condition, one may argue for BCR-ABL fusion gene screening prior to infliximab therapy.

A SOUTH AFRICAN INFLAMMATORY BOWEL DISEASE NATIONAL REGISTRY: AN ACHIEVABLE OBJECTIVE

David Epstein, George Dempster
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The epidemiology of inflammatory bowel disease (IBD) is changing with more cases reported from the developing world. Data from South Africa is limited to a single study from Cape Town conducted in the 1980s. Established IBD registries in Europe and America such as the European Collaborative IBD initiative and the TREAT registry have significantly improved our understanding of IBD.

The design, implementation and sustainability of a national IBD registry in South Africa presents unique challenges. IBD is not a single disease but a group of conditions separated into Crohn's Disease and Ulcerative Colitis. Furthermore the disease is dynamic with phenotypic changes over time. Secondly South Africa has a heterogeneous healthcare system with private and

public components. Patients with IBD are managed by specialists and allied professionals in both systems.

The aim of this presentation is to present the results of a three year project to develop an IBD registry suitable for South African conditions which will provide basic IBD epidemiology as well as information on disease characteristics and treatment.

The registry will be web based divided into two tiers. Tier one will capture basic IBD information and patient demographics and will be appropriate for all clinicians who encounter these patients. Tier two will be aimed at the specialist (both physician and surgeon) with an interest in IBD and will capture more extensive disease data, treatments and complications. Tier two will also function as a management system facilitating comprehensive IBD care.

The process will be managed by a SAGES working group.

CLINICOPATHOLOGICAL PATTERN OF COLORECTAL CANCER IN DURBAN, SOUTH AFRICA: AN UPDATE

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Introduction. Recent evidence suggests that the incidence of colorectal cancer is increasing in Africans. This study was undertaken to establish the clinicopathological patterns of colorectal cancer in Durban.

Patients and methods. Prospective epidemiological study of colorectal cancer among the different population groups in Durban. Data extracted included demographics, site of lesion, staging and grading of carcinoma.

Results. Results are shown in the Table below.

Conclusion. Colorectal cancer is an established disease that presents earlier among Africans and primarily amongst those < 40 years. The site distribution and the stage of the disease at presentation wais found to be similar to that observed internationally. Mucin-secreting carcinoma was highest among Africans who also present at an advanced stage of the disease.

AN AUDIT OF COLORECTAL CANCER TREATED AT GROOTE SCHUUR HOSPITAL (GSH) DURING 2001

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There is little data reflecting the performance of South African colorectal units. This study was undertaken to establish a benchmark for services at a single institution.

Methods. Patients who underwent an operation for colorectal adenocarcinoma at GSH during 2001 were studied. The site of the tumour and type of operation were recorded. The 30 day peri-operative mortality was determined. Time to recurrence of disease and survival were determined using Kaplan-Meier analysis and groups were compared using log-rank tests.

Results. 67 patients (median age 67 years - range 32-88) were enrolled in the study. 39(58.2%) had rectal cancer and 28(41.8%) colonic. Of the patients with rectal cancer, 8(20.5%) were deemed irresectable at surgery (3 had neoadjuvant radiotherapy). 28(71.8%) underwent anterior (19) and abdomino-perineal (9) resections (5 post radiotherapy). 3(7.7%) patients were managed by trans-anal resection.

All 28 colonic cancers were resected (right 13, left 12, subtotal 3).

17 of 67 (30.4%) patients were lost to follow-up. The remainder were followed to death or 5 years.

There were 2(7%) peri-operative deaths. Overall mean survival was 30.5 months (SD 25.7 months). 5 yr survival for stage I/II disease was 375% and stage III/IV was 8.7% (p=0.012). The local recurrence rate after rectal resection was 25%.

Conclusion. These results reflect GSH's colorectal experience and establishes a benchmark for future comparison. A larger cohort is required to establish more reliable results.

	African n=269	Indian n=293	Coloured n=16	White n=122
Age (years)	51+18	58+13	62+12	65+14
< 40 years	30%	11%	0%	7%
M:F ratio	1.5:1	1.4:1	1:1	1:1
Site				
Right colon	21%	13%	8%	18%
Transverse	3%	4%	0%	0%
Left colon	3%	4%	16%	4%
Sigmoid	11%	17%	24%	24%
Rectum	64%	63%	54%	53%
Staging				
Dukes A	6%	12%	3%	8%
Dukes B	36%	57%	40%	51%
Dukes C	42%	27%	20%	32%
Dukes D	16%	4%	10%	8%
Differentiation				
Well-differentiated	9%	7%	20%	8%
Moderately differentiated	77%	87%	80%	82%
Poorly differentiated	15%	5%	0%	8%
Mucin-secreting	15%	10%	0%	11%

IS THERE A CHANGE IN COLON CANCER PATTERN AT CHRIS HANI BARAGWANATH HOSPITAL?

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AIDD, Witwatersrand University

Introduction. Thirty years ago, Prof Segal from CHBH wrote "…among Black population colorectal cancer is an uncommon disease" in his series of 26 black patients collected between August 77 and June 78. In view of the recent changes in South Africa, has the colon cancer prevalence changed?

Aim. To evaluate all Endoscopically suspected colon cancer (CC) between July 2005 and December 2006.

Method

1. All patients undergoing colonoscopy between 1 July 2005 and 31 December 2006 were studied.

2. Those diagnosed CC Endoscopically were studied.

3. Pathological specimens were reviewed.

Results. In 8% of the 838 endoscopies performed during 18 months, 71 patients were diagnosed CC, of which 49 (69%) confirmed by histology. Male to female ratio is 2,1:1. Mean age is 56.7 for male, and 55.6 for female. The site is left in 62.6%, and right in 27.1.

Colonic polyps were observed in 2 patients (4.1%) while 1 patient (2%) had associated diverticular disease.

Twenty-two (31%) patients were wrongly diagnosed as CC at endoscopy, including 3 tubulovillous adenoma (that needed resection), 1 NHL, and 1 metastatic epitheloid cancer of unknown origin. More benign diseases (ie colitis, melanosis coli, IBD, normal mucosa) were labeled CC in the remaining 17 patients (24%).

Comments. The prevalence of colon cancer appears similar to 30 years ago.

Changes in environment factors such as diet and socio economic factors might take more than 3 decades to alter disease pattern. Endoscopic diagnosis can be misleading.

PERFORMANCE CHARACTERISTICS OF FAECAL OCCULT BLOOD TESTS: WHICH TEST TO USE FOR COLORECTAL CANCER SCREENING?

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Introduction. Guaiac-based faecal occult blood tests (FOBT's) in a colorectal cancer screening setting are commonly hampered by a poor specificity and positive predictive value, resulting in many (futile) follow-up colonoscopies. Hence, immunochemical FOBT's with apparently better clinical performance, absence of dietary restrictions and only one faecal sample required, have been proposed as a more efficient screening tool.

Aim. To compare an immunology-based (OC sensor®, Eiken chemical Co, Japan) and a guaiac-based (hemoccult®, Beckman Coulter, Inc. USA) FOBT in consecutive patients undergoing colonoscopy in terms of clinical yield of colorectal cancer and advanced adenomas.

Methods. All patients aged ≥18 years and scheduled for a colonoscopy in participating hospitals (N=5) were asked to perform both FOBT's in the week prior to colonoscopy. A haemoglobin concentration of ≥100ng/ml in the test sample was considered a positive result. Patients in whom the caecum was not visualized and/or bowel cleansing was insufficient (n=78) were excluded, leaving 962 eligible patients. McNemar's test was used for the comparison of correlated proportions. $p<0,05$ was considered statistically significant.

Results. Colorectal carcinoma and advanced adenomas (i.e. ≥1 cm in diameter and/or villous architecture and/or high-grade dysplasia) were found in 3.0% and 8.7% of the patients, respectively. Small adenomas, colitis and other lesions were identified in 38,0% of the patients. No lesions were found in 50.2% of the patients. The Hemoccult® test and OC Sensor® test showed positive outcome in 7.8 % and 11.5%, respectively. Test characteristics for both FOBT's are shown in Table 1, below. None of the differences between the tests were statistically significant.

Conclusions. Although the sensitivity and specificity of both tests in detecting colorectal cancer were high in this patient group, the sensitivity to detect high-risk, pre-cancerous lesions was disappointing. The low positive predictive value in these pre-cancerous patients might hamper the introduction of either one of these tests in a screening setting. A larger cohort is currently being investigated to corroborate these preliminary findings and compare both types of tests.

Table 1. Test characteristics

	Hemoccult® CRC	OC Sensor® CR	Hemoccult® Advanced adenomas	OC Sensor® Advanced adenomas	Hemoccult Advanced neoplasia*	OC Sensor® Advanced neoplasia*
Sens	82.8%	89.6%	19.0%	36.9%	35.4%	43.8%
Spec	94.5%	90.9%	93.2%	90.9%	95.9%	93.5%
PPV	32.0%	23.4%	21.3%	27.9%	53.3%	51.4%
NPV	99.4%	99.6%	92.3%	93.8%	91.8%	91.4%

*Advanced neoplasia consists of advanced adenomas and cancers.

Poster presentations

Session 3: Saturday 11 August 13h30 - 14h00

INDICATION, UTILIZATION, AND YIELD OF EARLY CT SCAN IN THE MANAGEMENT OF ACUTE PANCREATITIS

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Background. Many patients with acute pancreatitis do not require a CT. An early CT (within 96 hours after symptom onset) may be indicated to distinguish AP from other intra-abdominal conditions or to identify early pancreatic necrosis in patients with septic signs/organ failure to start antibiotics.

Methods. 18 hospitals included patients. Etiological factors, hospitalization time, timing (after the onset of symptoms) of CT scan, Baltazar CT severity index, presence of pancreatic necrosis, and use and timing of antibiotics were analyzed.

Results. 141 admissions of 128 patients were reviewed. The etiology was biliary (34,4%); alcoholic (15,6%); post-ERCP (14,1%); idiopathic (14,1%) and miscellaneous (21,8%). At least one CT scan (range 1-6) was performed in 43,3% (61/141) and in 63,9% (40/61) the CT was made within 96 hours after symptom onset. The Baltazar CT severity index was grade A (normal) in 17,5%; grade B in 22,5%; grade C in 45% and grade D in 15%. None of the early CT scans showed necrosis. In a minority of 10% (4/40), early CT findings prompted the physician to start antibiotics. In 17,5% (7/40) antibiotics had already been started before obtaining the CT.

Conclusions. A CT scan is frequently acquired in the early course of AP and is performed at times when there is no true clinical suspicion of necrosis. Therefore, the yield is low with little clinical management consequences. It seems prudent that clinicians should be more restrictive in the use of early CT in AP.

CHRONIC PANCREATITIS IN A PATIENT WITH MALNUTRITION DUE TO ANOREXIA NERVOSA

Martin Smith, Anna Sparaco, Russell Wesson
University of Witwatersrand

Both acute and chronic pancreatitis are associated with eating disorders, including malnutrition found in anorexia, bulimia, and major depression. We report a case of a 25 year old female patient suffering from severe malnutrition and anorexia with repeated attacks of pancreatic pain and an enlarging cystic lesion in the head of the pancreas. ERCP showed no communication between the pancreatic duct and cyst, and cytology demonstrated atypical cells. Due to the progressively enlarging lesion on CT, a pancreaticoduodenectomy was performed. Histology demonstrated chronic pancreatitis with a pseudocyst.

The pathogenesis of chronic pancreatitis remains to be well defined. There is evidence that an imbalance between oxidative stress and antioxidant capacity results in pancreatic inflammation and activation of periacinar myofibroblasts. In addition, it has been demonstrated that protein energy malnutrition (PEM) is associated with increased levels of proinflammatory cytokines as well as pancreatic acinar cell damage and ductal disruption. Furthermore it has been shown that PEM including anorexia nervosa is associated with a depleted antioxidant status. Thus there is a possible pathogenetic basis for severe malnutrition leading to chronic pancreatitis.

Our patient underwent surgery based on the presumption that she had a symptomatic cystic neoplasm. Chronic pancreatitis was demonstrated. Patients presenting with malnutrition and recurrent epigastric pain should be investigated for pancreatic pathology and the possibility of pancreatitis and the presence of pseudocysts entertained.

A DURBAN EXPERIENCE WITH LIVER RESECTIONS

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Introduction. Hepatobiliary surgery in Durban has been practised by individuals with a special interest until the establishment of a dedicated unit in 2007. We present the experience of a senior surgeon who has been involved with liver resections over the last 10 years.

Patients and methods. All patients who underwent surgical exploration for liver pathology were retrospectively reviewed. A total of 51 patients underwent exploration. There were 36 females and 15 males. Among the patients, 28 were White, 16 were African and 7 were Indian.

Results. Ten of the resections were for colorectal metastases. There were 6 hepatic adenomas, 6 hepatocellular carcinomas, 5 FNHs, 5 haemangiomas, 4 endocrine tumours, 4 recurrent hydatid cysts. The remainder were miscellaneous tumours. Extended right hepatectomies were performed in 5 patients, right hepatectomies in 17 patients, left hepatectomies in 15 patients, 4 left lateral hepatectomies in 4 and non-anatomical resections in 3. Three of the patients were inoperable at exploration. One bile duct required reconstruction with a hepaticojejunostomy at the time of resection. There were 4 bile leaks, 2 of which were managed expectantly, 1 was stented and the other managed with an endoscopic papillotomy. All resolved. There were 2 deaths, 1 due to respiratory failure and 1 due to a cerebrovascular accident.

Conclusion. Despite the lack of a dedicated centralised unit, liver resections can be performed with an acceptable morbidity and mortality.

ACUTE PANCREATITIS: DEMOGRAPHICS, AETIOLOGICAL FACTORS AND OUTCOMES IN A REGIONAL HOSPITAL SETTING IN SOUTH AFRICA

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Department of Surgery, Addington Hospital and Nelson R Mandela School of Medicine, UKZN

Introduction. The spectrum of aetiologies and outcomes of acute pancreatitis in South African settings are under reported. W e detail and analyse our prospective experience a regional hospital.

Patients and methods. Data were prospectively collected on all admissions with acute pancreatitis during the period June 2001 to April 2006. The aetiology was noted and complications and mortality were determined.

Results. From June 2001 to April 2006 there were 322 admissions of 295 patients with acute pancreatitis. The pancreatitis was associated with alcohol in 61.8% and gallstones 13.7%. In 4.3% gallstones and alcohol were the possible aetiologies. Dyslipidaemia

(7.1%), idiopathic (5%) and retroviral disease (4.7%) were the other commoner associations. There 15.6% who developed local complications and 28(8.7%) of the admissions died, 18 (64%) in the first week and 10 (36%) after 1 week.

Conclusions. In this series alcohol is the dominant aetiology and gallstones is responsible for a smaller proportion as compared to the Western studies. The mortality rate is comparable to previous studies with the majority of deaths occurring in the early phase of the disease.

DYSLIPIDAEMIC PANCREATITIS CLINICAL ASSESSMENT AND ANALYSIS OF DISEASE SEVERITY AND OUTCOMES

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Introduction. The relationship between pancreatitis and dyslipidaemia is unclear and has never been studied in a South African context.

Patients and methods. Admissions with acute pancreatitis were prospectively evaluated. A comparison of the demographic profile, aetiology, disease severity scores, complications and deaths were made in relationship to the lipid profiles.

Results. From June 2001 to May 2005, there were 230 admissions. The pancreatitis was associated with alcohol (63%), gallstones (18%), idiopathic (9%) and isolated dyslipidaemia (10%). The amylase was significantly higher with a gallstone aetiology ($p<0.001$) and significantly lower with dyslipidaemia ($p<0.001$). Dyslipidaemia was significantly different between the two predominant race groups: Indian 50.5% and African 17.9% ($p=<0.000017$). Seventy eight (34%) had associated dyslipidaemia and 152 (66%) were normolipaemic at admission. The average body mass index was higher in the dyslipidaemic group ($p=0.004$). The mortality rate was similar between the dyslipidaemic and normolipaemic patients ($p=0.58$). In the dyslipidaemic group, deaths occurred in those with hypertriglyceridaemia ($p=0.05$) or with persistent lipid abnormalities ($p=0.003$).

Conclusion. Dyslipidaemic pancreatitis was more common in the Indian ethnic group. Adverse outcomes in those with dyslipidaemia are associated with persistent hypertriglyceridaemia.

MUC-5AC IS ABSENT IN CROHN'S DISEASE-ASSOCIATED SMALL BOWEL ADENOCARCINOMA AND IN THE ADJACENT ULCER-ASSOCIATED CELL LINEAGE BUT IS ABERRANTLY EXPRESSED BY UNINVOLVED ILEAL MUCOSA

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Background. Small bowel adenocarcinoma (SBAC) is a well recognised, but extremely rare complication of Crohn's disease (CD) widely assumed to be a consequence of chronic mucosal inflammation. While an altered expression pattern of gel-forming mucins and trefoil factor family peptides has previously been described in ulcer associated cell lineage (UACL) of active small bowel CD, little is known about expression in the event of neoplastic transformation. Furthermore given that UACL represents a zone of proliferation, this cell line may be at risk for dysplastic change. Aim. To evaluate the pattern of mucin and trefoil factor expression in CD-SBAC, and in both adjacent small bowel UACL and ileum uninvolved by tumour.

Method. Immunohistochemical expression of mucins and trefoil factors was evaluated in cases of CD-associated-SBAC and compared to that of tumour-free CD controls.

Results. As was expected, MUC2 was the predominant mucin expressed in the involved ileum of patients with CD, with absent expression of MUC5AC and 6. In keeping with previous reports, ileal UACL of CD (in patients without associated SBAC) had absent MUC2 and the strong appearance of MUC6. In stark contrast UACL in subjects with SBAC had largely absent expression of both MUC6 and MUC5AC, as did tissue directly involved by tumour which stained strongly for MUC2. Unexpectedly the ileum of subjects with SBAC uninvolved by tumour strongly and aberrantly expressed MUC5AC.

Conclusion. Immunohistochemical staining of CD-SBAC reveals strong expression of MUC2 in the tumour, with absence of MUC5AC and MUC6. Similarly ileal UACL in close proximity to CD-SBAC demonstrates loss of the gastric differentiation that usually characterises this cell line. In contrast MUC5AC is strongly expressed in ileal tissue uninvolved by tumour. Whether this represents a field effect or perhaps implicates ileal UACL in the dysplasia-carcinoma sequence remains to be elucidated.

A CROSS-SECTIONAL ANALYSIS OF HEPATITIS C AT THE GSH/UCT LIVER CLINIC

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Hepatitis C virus (HCV) infection is a significant cause of chronic liver disease and remains prevalent in many developed and developing countries. The prevalence of hepatitis C, unlike hepatitis B in South Africa, is low, ranging between 0.03 and 0.1%. Combination therapy with pegylated interferon and ribavirin has proven to be effective therapy for HCV with seminal evidence first published in 2001.

Aim. To determine our experience with HCV and outcomes with combination therapy in terms of sustained virological response (SVR) defined as HCV PCR negativity 24 weeks after the end of treatment.

Methods. Patients with HCV (HCV antibody and PCR positive) in active follow up since 2000 were extracted from the clinic database of approximately 3000 patients. Relevant demographic and clinical data were obtained from patient records.

Results. 53 patients (~2% of clinic, 26 males), mean age 49.1±15.1 years, were evaluated. Ethnic distribution includes 57% Caucasians, 15% Black Africans, 26% Mixed Ancestry and 2% Asian. HCV genotype (G) distribution (n = 42) is G1=15 (36%), G2 = 6 (14%), G3 = 6 (14%), G4 = 9 (22%) and G5 = 6 (14%). Probable mode of acquisition of HCV includes 9% haemophiliacs, 22% parenteral injuries, 23% previous blood transfusions and 37% unknown. 5/53 (9%) are HIV co-infected with a median CD4 count 287 [range 130-503]. Median HCV viral load [n = 33] is 1.24 million IU/ml (range 41000-6.87 million IU/ml) with a mean $\log_{10}$ viral load of 6.0 ± 0.59 IU/ml. 13/53 (25%) have transaminase (ALT and AST) levels persistently in the normal range. Liver biopsy (n = 17) median necro-inflammatory and fibrosis scores are A = 1 (range 0-3) and F = 2 (range 0-4), respectively, using the METAVIR algorithm. 21/53 (40%) have received combination

therapy. 15/17 (88%) who have completed therapy have achieved a SVR [including 1 patient with HIV co-infection (G1)]. 58% of those who achieved a SVR were non-genotype 1.

Conclusions. Hepatitis C is a relatively small component of patients attending our clinic reflecting the low background prevalence in South Africa. Our results with patients achieving a SVR are very encouraging however this may be influenced by the proportion of non-genotype 1 patients. The formation of a national pool of data of HCV patients and their treatment outcomes may be useful and aid in assessing the South African HCV experience and assist in further developing local guidelines.

BILIARY-PLEURAL FISTULAE FOLLOWING PENETRATING LIVER TRAUMA

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University of Cape Town

This study evaluated the optimal management and outcome of persistent biliary-pleural fistulae following penetrating liver trauma in a tertiary referral trauma centre.

Patients and methods. The study included all patients admitted to Groote Schuur hospital with penetrating liver trauma who developed a persistent biliary-pleural fistula. Patient data were reviewed retrospectively using the liver trauma database and endoscopy records. Imaging of the biliary system was by ERCP. Lesions were classified according to their anatomic location on cholangiography as either extra-hepatic or intra-hepatic (central or peripheral segmental ducts). Pleural collections were drained primarily by means of intercostal drains with surgery reserved for complex loculated or infected collections. Intra-abdominal collections were drained percutaneously under radiological guidance or by placement of drains at surgery. Patients with persistent bile leaks underwent endoscopic sphincterotomy with or without stenting of the common bile duct.

Results. Between 1992 and 2007, 22 patients presented with a persistent bile leak into the pleural space following penetrating thoraco-abdominal trauma. 20 patients had biliary pleural effusions drained via a standard intercostal chest drain. A further 2 patients were drained by catheters placed under radiological guidance. The site of the biliary lesion was identified by ERCP in 19 patients, all of whom underwent either sphincterotomy only or sphincterotomy and stenting. Resolution of the fistula was obtained in all patients. Four patients required surgery for infected or loculated chest collections.

Conclusion. Traumatic biliary-pleural fistulae are typically the result of intra-hepatic bile leaks which are likely to resolve with endoscopic therapy. A conservative approach to the management of these injuries may be associated with a good outcome.

HEPATITIS B VIRUS (HBV) GENOTYPES AND CLINICAL CORRELATIONS AT GROOTE SCHUUR HOSPITAL: A PRELIMINARY REPORT

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Aim. To investigate the different HBV genotypes and polymerase gene mutations in patients with chronic HBV infection at a referral liver clinic. HBV infection is endemic in Africa and the different genotypes have been shown to influence disease outcome.

Methods. Following informed consent, recruited patients had blood obtained for viral DNA extraction. Nested PCR was used to amplify the S and polymerase genes. The products were then subjected to DNA sequencing. The S gene sequences were used for phylogenetic analysis to identify the genotype and the polymerase gene sequences were analysed to investigate the presence of mutations in the YMDD motif. These results were correlated with patient data.

Results. To date, results of 23 patients are available for analysis; 11 male and 12 female. Mixed race 52.2%, Black 21.7%, Caucasian 17.4% and Indian 8.7%. Genotype D was found in 73.9%, A in 21.7% and H in 4.35% of the patients. Genotype A was most common in Caucasians and genotype D in the Mixed race group. Genotype H was found in 1 Mixed race patient. ALT and HBV DNA levels were highest in genotype A patients (79.2 IU/l, DNA $\log_{10}$ 7.2) compared to genotype D. 9 patients received interferon α 2 genotype D patients with high pre-treatment ALT and low DNA levels achieved HBV e antigen clearance.

Conclusions. Compared with published data, genotype D rather than A was the most frequent in this local cohort and responded better to treatment. Genotype, pre-treatment ALT and DNA levels appear to predict response to treatment.

HEPATIC SCHISTOSOMIASIS WITH NEPHROPATHY

Dr N. Parsoo, Prof K.A. Newton
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Introduction. Liver disease with portal hypertension is a frequent presentation of schistosomiasis in patients from rural KwaZulu-Natal. Accompanying glomerular disease, while well described, is rarely reported.

Case presentation. A 14 year old rural boy presented to another hospital with a 1-year history of leg oedema and severe ascites. Investigations done there revealed a normocytic anaemia of 9.1 g/l and marked hypoalbuminaemia of 14 g/l. A liver biopsy revealed fibrosis with schistosome ova. He was referred to our hospital for treatment of intractable ascites. On presentation here, additional findings were a 4cm palpable splenomegaly and 3+ proteinuria on dipstix. Urine protein excretion was 8.5 g/day and the serum cholesterol was 7.32 mmol/l. Ultrasound abdomen revealed a normal sized liver with a coarse echopattern and features of peri-portal fibrosis. The spleen was enlarged, the portal vein measured 1 cm in diameter and kidneys were of normal size. Renal biopsy revealed a membranous glomerulonephropathy with deposition of C3 and IgG. The ascites has been controlled with judicious paracentesis, spironolactone, and ACE inhibitors. The nephrologists are considering the treatment options for his renal disease.

Conclusion. A wide variety of glomerular lesions of varying clinical severity have been described in schistosomiasis. Presentation varies from asymptomatic albuminuria with normal renal function to end stage renal disease.

Nephropathy – easily overlooked – should be sought in all patients presenting with hepatic schistosomiasis since this may contribute significantly to the development of hypoalbuminaemia and ascites.

GAUCHER DISEASE IN AN AFRICAN TEENAGER

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Department of Gastroenterology, Inkosi Albert Luthuli Hospital

Introduction. Gaucher disease is a rare cause of hepatosplenomegaly that results from defective activity of acid β-glucosidase. It is relatively common in Ashkenazi Jews but very rare in the African population.

Case presentation. A 13- year-old African female presented with progressive abdominal distension for 1 year. Clinical examination revealed a pale, stunted girl with hepatomegaly, massive splenomegaly but no significant lymphadenopathy. Liver function tests were normal. Full blood count and peripheral blood smear revealed a pancytopaenia with no blast cells; malaria parasites were not seen. Hepatitis B/C and HIV serology were negative. EBV and CMV serology revealed past exposure. Ultrasound and CT abdomen showed an enlarged echogenic liver; massively enlarged spleen; and enlarged abdominal lymph nodes. Bone marrow aspirate showed no abnormal cells and tests for tuberculosis were negative. Bone marrow trephine biopsy revealed an infiltrate of glycolipid laden macrophages which were typical 'Gaucher cells'. Glucocerebrosidase assay revealed markedly decreased activity diagnostic of Gaucher disease. SACE and plasma chitotriosidase levels were both markedly elevated.

Discussion/conclusion. Only a few case reports of Gaucher disease in African patients have been described in South Africa. Of the three subtypes of the disease, Type 1 Gaucher disease is the commonest and patients with this subtype commonly present with hepatosplenomegaly and bone involvement (as seen in our patient). Treatment with enzyme replacement therapy can reverse haematological and visceral manifestations, with skeletal disease being slow to respond. Our patient is awaiting enzyme replacement therapy but this has been limited by cost and availability. Gaucher disease is a rare, potentially treatable cause of hepatosplenomegaly.

OUTCOME OF ENDOSCOPIC VARICEAL LIGATION AND MEDICAL THERAPY IN ESOPHAGEAL VARICES

Samaila A A, Murillo D, Bhaga H, Ahmed R, Ally R
Chris Hani Barawagnath Hospital

Background. The use of non-selective α-adrenergic blockers, somatostatin analogues and Endoscopic Variceal Ligation (EVL) has revolutionized the treatment of esophageal varices and improved outcome.

Aim. The aim of this study was to determine the outcome of EVL and medical therapy (octreotide and propranolol) in esophageal varices at Chris Hani Barawagnath Hospital.

Materials and methods. A systematic audit of endoscopy records (hard copies and computer data base) and case notes of patients endoscoped between July 2005 and March 2007 were carried out. Demographic, clinical, laboratory and endoscopic data of all patients with varices were retrieved. Data obtained were analyzed using SPSS version 11.0 statistical software and p values <0.05 were considered statistically significant.

Results. Forty-four patients with varices consisting of 25 (56.8%) males and 19 (43.2%) females with a mean age of 46.9+16.7 were studied. Thirty-nine patients were banded, 36 of who had endoscopic evidence of bleeding, while 5 patients with small varices (grade 1) received propranolol only. All bleeding patients also received octreotide. Therapies were successful in 33/36 (91.7%) of the bleeding patients, while 3 (83%) patients rebleed. Overall mortality in bleeding patients was 4/36 (10.3%). 2/3 (66.7%) of those that rebleed died. No mortality or rebleeding was recorded in all the 8 patients with non-bleeding varices.

Conclusion. Esophageal varices are a major cause of UGIB and EVL in combination with medical therapy is associated with good outcome. Rebleeding is minimal but associated with increased mortality.

ASSESSMENT OF HEPATIC STEATOSIS WITH 3.0 TESLA MAGNETIC RESONANCE SPECTROSCOPY IN TYPE 2 DIABETIC PATIENTS WITH NAFLD

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Introduction. Non-alcoholic fatty liver disease (NAFLD) is characterized by hepatic steatosis and often associated with features of the metabolic syndrome, e.g. insulin resistance and dyslipidaemia. Liver biopsy still remains the gold standard for assessing hepatic fat accumulation accompanied by an increased risk of complications and sampling error. Magnetic Resonance Proton Spectroscopy (1H-MRS) is a viable non-invasive alternative, but has not yet been used as a standard diagnostic tool. The aim of this study was to measure and quantify hepatic steatosis in type 2 diabetic patients with NAFLD using ^{1}H-MRS.

Patients and methods. Of twelve patients with type 2 diabetes mellitus and NAFLD (defined as an increase in transaminase (>1.5 ULN), increased liver echogenicity on ultrasound and/or liver biopsy), clinical and biochemical characteristics were measured and ^{1}H-MRS was performed on a 3.0 Tesla Philips Intera scanner. Two ratios from the acquired ^{1}H-MR spectra were calculated: ratio 1 defined as the CH_2-fat signal versus the reference H_2O signal and ratio 2 the unsaturated fat signal versus this reference. Correlations were analyzed using coefficients with a p-value <0.05.

Results. Mean body mass index was 31.8 kg/m^2, mean HOMA-IR 8.0 (±5.6), total serum cholesterol 4.2 (±0.9) mmol/L and triglycerides 1.6 (±0.7) mmol/L. A large signal from saturated fat can be seen at 1.2 parts per million (ppm) arising from lipid methylene protons. Next to the suppressed water peak at 4.7 ppm, the spectrum contains a large signal at 5.4 ppm caused by unsaturated lipid protons. A tendency to statistical significance could be detected between saturated and unsaturated fatty acids with a correlation coefficient of 0.553 (p=0.062). The highest correlations were found between the homeostasis model of assessment (HOMA-IR) score (indicator for insulin resistance) and hepatic fat content (ratio 1 p=0.003 and ratio 2 p=0.05 and between total cholesterol and hepatic fat content for ratio 2 (p=0.003).

Conclusion. Despite the limited number of patients in this study, 3.0 Tesla MR spectroscopy seems well suited to measure and quantify hepatic fat content. The technique allows differentiation between saturated and unsaturated fat. In 92% of the patients with NAFLD unsaturated and saturated hepatic fat content was detected. A significant correlation could be detected between this fat content and insulin resistance and total serum cholesterol. Further research will be needed to investigate the exact additional diagnostic value of ^{1}H-MRS in NAFLD.

A SPATE OF ADULT CHOLEDOCHAL CYSTS

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Department of Surgery, University of Kwazulu Natal, Durban

Introduction. Choledochal cysts generally present in childhood but are sporadic in adult practice, with western referral centres reporting fewer than one case annually. We present the spectrum of presentation and management in five patients who presented in the past year.

Results. See table below.

Follow up varies from 11 to 2 months. None had further episodes of cholangitis. All patients have a normal bilirubin two patients have mild persistent elevation of cholestatic enzymes.

Conclusions. Jaundice and episodes of cholangitis indicate the need for investigation. In the abscence of stones MRCP is preferred for anatomical definition. Excision with mucosal ablation and hepaticojejunostomy give excellent short-term resolution of jaundice and symptoms.

Patients	26 White f	35 Black f	24 Black f	27 Black f	19 Indian m
Mass	X	X	√	√	X
Jaundice	X	√	√	√	√
Cholangitis	√	X	X	√	X
ERCP	√	X	X	X	√
MRCP	√	√	√	√	X
Todani Cyst Type	IVA	IVA	IC	IC	IF
Stones	√	X	X	X	X
Surgery	PE HJ	PE HJ	PE MA HJ	CE HJ	CE HJ
Complications	Nil	Nil	Pancreatic fistula	SBO	Nil
Cyst Histology	no malignancy	no malignancy	no malignancy	no malignancy	no malignancy
Liver Histology	X	X	normal	normal	cirrhosis

f = females; m = males; √ = present ; X = absent; HJ = hepaticojejunostomy; CE = complete excision; PE = partial excision; MA = mucosal ablation; SBO = small bowel obstruction.

ABSTRACTS: ASSA 2007

Free papers
Oral Presentations
Thursday 9 August 14h00 - 15h00

LONG-TERM RESULTS OF PALLIATIVE STENTING OR SURGERY FOR INCURABLE OBSTRUCTING COLON CANCER

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Western Hospital, Melbourne, Australia

Background. Self expanding metal stents are an effective means of relieving left sided malignant colonic obstruction, and in the setting of incurable disease may provide palliation while allowing the patients to avoid surgery altogether. With modern chemotherapy regimes, patients may have a long life expectancy, even in the presence of metastases. The purpose of this study was to investigate the long- term results of palliative stent placement, compared to patients undergoing palliative surgery

Patients and methods. This is a prospective, non-randomised study of 55 consecutive patients who underwent colonic stenting or palliative surgery for incurable, obstructing adenocarcinoma of the left colon.

Results. Twenty nine patients underwent colonic stenting, and 26 had surgery during the study period. Survival was similar in the two groups (14 months in the stent group, 11 months in the surgery group). Median hospital stay was shorter in the stent group (4 vs. 13.5 days), and fewer patients in the stent group had complications (2 vs. 14). Only 4 patients in the stent group went on to require later surgery. The median time to failure of the stents was 14 months.

Conclusions. Colonic stenting provides effective and durable palliation for patients with incurable, obstructing adenocarcinomas of the left colon. It can be performed with less morbidity than palliative surgery, and offers similar long term survival.

ORTHOTOPIC LIVER TRANSPLANTATION AT GROOTE SCHUUR AND RED CROSS HOSPITALS (1987 - 2007)

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Departments of Surgery, Medicine and Paediatrics, University of Cape Town

Orthotopic liver transplantation remains the treatment of choice for patients with end-stage liver disease. In this study we document the outcomes of patients undergoing liver transplantation at Groote Schuur and Red Cross Children's Hospitals between 1987 and 2007.

The indications for liver transplantation in adults include postnecrotic cirrhosis, primary sclerosing cholangitis and fulminant hepatic failure, and in children was mainly biliary atresia. Conventional surgical techniques and immunosuppression were used. The majority of the children received a reduced size liver graft from an adult donor.

Over 185 patients have undergone liver transplantation since 1987. The one-year survival in the recently transplanted cohort of patients has been in excess of 80%. Besides the usual immune related and infectious complications, tuberculosis and de novo hepatitis B have been significant problems. Post-transplant lymphoproliferative disease has been a problem in children.

The outcomes of the liver transplant programme in Cape Town compare favourably with international results.

OUTCOME ANALYSIS OF PANCREATICODUODENECTOMIES AT GROOTE SCHUUR HOSPITAL – AN INTERIM ANALYSIS

CG Troskie, JEJ Krige, J Shaw, PC Bornman
Surgical Gastroenterology, Department of Surgery, Groote Schuur Hospital, University of Cape Town, South Africa

Aim. To review the outcome of non trauma related pancreaticoduodenectomies performed at Groote Schuur Hospital between 1980 and 2007.

Methods. Retrospective analysis was performed .The pathology, post-operative complications and mortality was reviewed. A sub-analysis compared the results of the three decades.

Results. The male:female ratio was 135:96 with a median age of 57 years. Of the 221 patients, 159 had a pylorus-preserving pancreaticoduodenectomy and 62 a standard Whipple procedure.

Pathology	N=221
Adenocarcinoma	N=69[31%]
Ampullary tumour	N=69[31%]
Chronic Pancreatitis	N=28[13%]
Cholangiocarcinoma	N=18[8%]
Cystic Neoplasm	N=14[6%]
Duodenal carcinoma	N=5[2%]
Other	N=15[7%]]

The in-hospital mortality was 5.5% (n=12). The causes of death were bleeding (n=4), liver necrosis (n=1), multi-organ failure (n=6), and DVT/PE (n=1).

The complications were: pancreatic fistula n=31 (14%), bile leak n=20 (9%), delayed gastric emptying n=25 (11%), septic complications n=38 (17%), bleeding n=16 (7%) and other n=25 (11%). Re-operation was required in 7% for bleeding. There was no difference in the complication rates between the three decades. 84 (38%) patients had no complications.

Conclusion. Pancreaticoduodenectomies remain a major physiological insult with significant morbidity and mortality.

OUTCOME OF HEPATIC RESECTION FOR COLORECTAL METASTASES

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Surgical Gastroenterology, Department of Surgery, University of Cape Town Health Sciences Faculty and Groote Schuur Hospital, Cape Town

Aim. To determine outcomes of hepatic resection of single and multiple colorectal liver metastases (CRLM).

Patients and methods. 102 patients (58 men, 42 women, mean age: 59.0 years, range 18-79) underwent liver resection for CRLM between 1987 and April 2005. Data was collected prospectively and 100 patients were followed up until May 2007.

Results. 46 patients had a single metastasis resected (Group A), and 54 had 2 or more metastases (range 2-9) resected (Group B). Mean operative time was 256 min (range 135-435) in Group A and 298 min in Group B (range 160-525) (p = 001). There were no significant differences in inflow occlusion time (p=0,28), intra-operative blood loss (p=0,07), blood transfusion (p=0,1) or hospital stay (p=0,6). 3 patients died in hospital in each group (peri-operative mortality 6%). 13 patients in Group A had postoperative complications (8 major, 5 minor) as opposed to 18 in Group B (10 major, 8 minor). Survival did not differ significantly between single or multiple metastases. 3 year survival was 55% in Group A vs 51% (25/49) in Group B (p=0,69). 5 year survival was 43% in A vs 34% in B (p=0,41), and 10 year survival was 20% in Group A vs 12% in Group B (p=0,46).

Conclusion. The outcome of liver resection for multiple colorectal metastases is comparable to resection for single lesions, and justifies continuation of this practice.

BLOOD-BORNE PATHOGEN EXPOSURE AMONG AFRICAN SURGEONS

Elayne Kornblatt Phillips, Janine Jagger, Alex Owusu-Ofori
University of Virginia School of Medicine

Operating theatres consistently rank as one of the highest-risk settings for percutaneous injuries (PI) and blood and body fluid exposures (BBF) to health care workers. Surgeons as an occupational group sustain more injuries/exposures than other physician specialties. Surgeons in sub-Saharan African, a region of high prevalence for blood-borne pathogens, have been neglected in efforts to reduce blood exposure risks.

Surgeons attending the Pan African Association of Surgeons (Blantyre, Malawi, December 2006) completed surveys documenting frequency and circumstances of past exposures (PI from sharps and BBF splashes/sprays), access to and use of barrier garments and safety devices, immunization status, and availability of post-exposure prophylaxis.

Greater than 90% of surgeons reported receiving at least one PI in the previous year, with an average of 3.1 (range 0 - >20). Suture needles caused the majority of injuries (72.4%). Eighty percent of respondents reported at least one BBF during the previous year, with an average of 4.1 (range 0 - 17). Most BBF exposures were from blood; the largest proportion to the eyes (52.5%). Thirty-nine percent of respondents reported being fully vaccinated for hepatitis B. Most respondents (88.8%) indicated they had access to HIV post-exposure prophylaxis. Forty percent of surgeons used the hands-free passing technique for sharp instruments, and 31.3% used blunt suture needles. Tissue adhesives were less commonly used. Most surgeons routinely wore non-liquid-resistant cotton gowns.

Methods for reducing occupational exposure risk will be discussed, including use of blunt suture needles, liquid-resistant barrier garments, sealed eye protection and mandatory hepatitis B vaccination.

THE ROLE OF ERCP IN THE MANAGEMENT OF PATIENTS WITH SUSPECTED BILE LEAKS FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY

Klipin M, Krige J, Bornman P, Cullis S and Beningfield S
Groote Schuur and UCT

Aim. To evaluate the role of ERCP in the diagnosis and management of patients with suspected bile leaks following laparoscopic cholecystectomy.

Methods. This was a retrospective analysis of prospectively collected data. ERCP records from January 1993 - July 2004 were reviewed and those patients who underwent ERCP for a suspected bile leak after laparoscopic cholecystectomy were identified.

Results. 52 ERCPs were performed during the study period in patients who had a suspected bile leak following laparoscopic cholecystectomy. ERCP successfully demonstrated the intra and extra hepatotic biliary tree in 48 patients. A bile leak was identified in 41 patients.

26 patients had a cystic duct leak. 13 patients had injuries to the common or hepatic duct; 7 of these were major circumferential injuries while 6 patients had minor lateral injuries. One patient had an injury to an aberrant duct. One patient had a gallbladder fossa leak and another had a leak from the fundus of an in situ gallbladder. A malignant stricture was identified in two patients.

Endoscopic treatment alone was successful in 18 patients. A further 13 had endoscopic intervention and percutaneous drainage. Nine patients had a combination of laparoscopic and percutaneous interventions following endoscopy. Open surgery and bile duct repair was required in 10 patients.

Conclusion. ERCP was successful in 48 of 52 patients (92%) of whom 41 (79%) had a visible bile leak. Laparotomy was necessary in 10 (21%). Overall 41 patients were managed without open surgery (79%). Circumferential injuries were more likely to require multiple procedures and open surgery. ERCP and interventional radiology are successful in managing the majority of post cholecystectomy bile leaks.

Poster Presentations

Thursday 9 August 13h30 - 14h00

'HOW DO I INSERT AN INTERCOSTALS DRAIN' – AN EDUCATIONAL POSTER FOR THE MEDICAL OFFICER

Allard D
GF Jooste Hospital

The surgical team of GF Jooste Hospital in the Cape Flats manages on average one thousand intercostal chest drain (ICD) patients per year. We regularly see iatrogenic chest drain complications.

We present for the first time an educational poster that explains the different steps of a 'chest drain insertion' procedure with illustrated photographs. A waterless-valve chest drain device (Xpand by SINAPI) recently engineered in SA is presented.

Although no new medical information is given, this explicit way of showing how to perform a commonly done procedure can help those medical officers in the field who do not have senior supervision.

LAPAROSCOPIC APPENDICECTOMY FOR THE ECONOMICALLY CHALLENGED

M Z Koto, BL Khulu, M Ntlhe, P Nkosi, D Mokotedi, B Mbatha, P Peraza
Sebokeng Hospital, University of Limpopo

Introduction. The economic challenges of laparoscopic appendicectomy are formidable in South Africa. Funders are reluctant to fund this procedure because of the cost. We present the alternative method to address the cost issue.

Methods. We reviewed the records of 145 patients (90 females, 55 males) with age ranges between 6 and 55 years who underwent laparoscopic appendicectomy between January 2002 and April 2007. The procedure involved three reusable trocas, mariland disector, 2-0 chromic sutures. The procedure was under general anaesthetic. The meso appendix and artery were dissected using electro-cautery and mariland disector. The base of the appendix was ligated using chromic suture with a Roeder Sliding knot. We compared the price of this procedure with the funders benchmark.

Results. The operation time was 30 minutes on average. 10 patients had appendix mass, 4 patients had an appendix abscess; the rest of the patients had inflamed appendices. Two patients developed port site infections that were treated conservatively, one patient developed a caecal fistula which closed spontaneously. Average hospital stay was 2,5 days. The cost of this procedure was cheaper than the industry norm (R9 790,00 v/s R17 635,00). Compared to the open procedure (R9 790,00 v/s R10 996,00) there was little difference and in some cases it was cheaper.

Conclusion. This method is cost effective (even cheaper than the open procedure in some cases). It is safe and as quick as the open procedure.

Recommendation. We recommend this procedure to address the funder's concern about cost.

THE ROLE OF LAPAROSCOPY IN TRAUMATIC DIAPHRAGMATIC HERNIA

Koto MZ, Khulu BL, Nkosi P, Mokotedi D, Mbatha B, Perasa, Ntlhe M
Sebokeng Hospital, University of Limpopo

Introduction. Diagnosis of diaphragmatic injury poses a series challenge after acute injury. We review our expensive in using laparoscopy for both diagnosis and repair.

Method. Records of 15 patients (12 males and 3 females) that were seen between January 2002 and April 2007 were reviewed Their age range from 21-36 years.

Patients with stab wound of the lower chest with suspected diaphragmatic hernia were subjected to diagnostic laparoscopy under general anaesthesia, 3 patients (2 chronic and 1 acute) had abdominal viscera in the chest on chest X-ray. Camera port was placed at the umbilicus and two 5mm working ports were placed on LUQ. In case of injuries of diaphragm, this was repaired laparoscopically using 2-0 ethibond suture using endocorporeal technique.

Results. 9 Patients with lower chest stab wound were found to have diaphragmatic injuries (5 patient with omentum incarcerated) Omentum was reduced and hole repaired laparoscopically. 3 patients with viscera in the chest were repaired laparoscopically.

Conclusions

1. Laparoscopy is a very reliable method of diagnosing and repairing injuries
2. Chronic diaphragmatic hernia can also be safely repaired by laparoscopy.
3. Posterior stab wounds should be viewed with more caution

ORGAN DONOR REFERRALS TO GROOTE SCHUUR HOSPITAL BETWEEN 1996 AND 2005

Cauley, R. Muller, E. McCurdie, F. Pascoe, MD. Barday, Z. Kahn, D
Department of Surgery, University of Cape Town

The most significant factor limiting transplantation is the critical shortage of organs available for transplantation. Several strategies have been introduced to increase the number of donor referrals. In this study we reviewed all the patients referred as potential organ donors to our Unit.

All patients referred to the Transplant Unit at Groote Schuur Hospital as potential organ donors between 1996 and 2005 were included in the study. The hospital records of these patients and the transplant co-ordinator's files were retrospectively reviewed, and the demographics, cause of death, time of referral, use of inotropers, referring centre, and outcomes recorded.

During the 10-year study period, 824 potential organ donors were referred to our Unit. The male to female ratio was 3:1, and included 321 black patients, 318 mixed race patients and 154 white patients. The average age of the patients was 26.15 years (range 1 day to 73 years). The majority of the referrals (453; 54%) were from Groote Schuur Hospital; the remaining referrals came from Red Cross Children's Hospital (98; 12%), other hospitals in the Western Cape (103; 13%), and hospitals in the Eastern Cape (170; 21%). The number of referrals has decreased over the course of the 10-year period, from 113 in 1996 to 59 in 2004. There has also been an increase in the number of black patients referred as potential donors. Thirty nine per cent of the patients were blood group O, 38% were group A, and 18% were group B. The majority of deaths were related to trauma (640), with 171 deaths due to medical causes. Only 38% of the referrals were eventually used as organ donors.

Thus, in summary, the number of referrals of potential donors to the Transplant Unit is decreasing and only 38% of the referrals were eventually used as donors.

FACTORS WHICH INFLUENCE THE SUCCESSFUL RETRIEVAL OF ORGANS FROM POTENTIAL DONORS

Cauley, R. Muller, E. McCurdie, F. Pascoe, MD. Barday, Z. Kahn D.
Department of Surgery, University of Cape Town

Although organ transplantation has achieved remarkable success, the critical shortage of organs for transplantation remains a major limiting factor.

Unfortunately many of the potential donors referred to transplant units do not result in successful organ donation. In this study we reviewed the factors which could influence organ donation.

All referrals of potential donors to the Transplant Unit at Groote Schuur Hospital between 1996 and 2005 were included in the study. The patient files and transplant co-ordinator records were retrospectively reviewed and factors which could influence organ donation noted.

There were 824 potential donor referrals to our Unit between 1996 and 2005. The male to female ratio was 3:1, and the mean age was 26.15 years. The rate of the patients were as follows: 321 black, 318 mixed race and 154 white.

Only 38% of the 824 potential referrals resulted in successful organ donors. The success rate has remained more or less the same over the 10 year period. The reasons why the referrals were not used included refusal of consent (26%), the donor not being suitable (21%), cardiac arrest of the donor (6%), and no family available (3%). The consent rates were highest in the white patients, and lower in the black patients (33%). The consent rate was not influenced by the age or gender of the donor.

The consent rate was higher when the cause of death was suicide.

The very high overall refusal rate in potential organ donors remains an ongoing problem, with the lowest success rates in black patients.

A CASE OF THE 'SPONGY LIVER'

Sparaco A, Balabyeki M, Klipin M, Omoshorro-Jones J. Smith MD
Chris Hani Baraganath Hospital and the University of the Witwatersrand

A 45 year old female presented with obstructive jaundice, common bile duct stones but no cholangitis. ERCP failed to remove the stones and the patient was planned for a common bile duct exploration. On the morning of surgery she decompensated and became hypoglycaemic without being a known diabetic. Surgery was cancelled and part of her investigations included a ct scan which revealed a multi cystic lesion confined to segments 2 and 3 of the liver. The nature of this lesion could not be determined on preoperative imaging and the patient was taken to theatre for her bile duct exploration and further scrutiny of the liver lesion. Intra-operative ultrasound showed a vascular lesion and initially it was thought to be an haemangioma. Furthermore there were multiple pockets of sepsis and a necrotic perforated gallbladder. It was decided to resect the liver and a lobectomy was done. The histology reported multiple small abscesses and normal unobstructed intrahepatic bile ducts. It was concluded that this was a case of a perforated empyema of the gallbladder, however the exact mechanism of the abscesses of segment 2 and 3 could not be explained.

TRANSPLANTATION MANAGEMENT OF INTESTINAL FAILURE IN INFANTS AND CHILDREN

Alastair Millar, Girish Gupte, Sue Beath, Khalid Sharif, Darius Mirza, Sara Clarke, David Mayer, Carla Lloyd, Jean de Ville, Deirdre Kelly
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Introduction. There is a need for effective management of intestinal failure (IF) and intestinal failure associated liver disease (IFALD) including transplantation.

Aim. To review the trend in referrals and progress made in transplant management of children with IF and IFALD in the National Intestinal Transplant Unit for the United Kingdom.

Subjects and methods. 226 patients with IF and/or IFALD were referred for assessment for transplantation between 1992 and 2007. 107 were recommended for transplant, 39 died on waiting list and 4 improved. Diagnoses of the 60 children who underwent transplant (17 Isolated livers; 15 for short bowel with the expectation of eventual full adaptation and 2 as a bridge to later intestinal transplant) and 43 were intestinal transplants short gut syndrome 36, motility disorders 18, mucosal disorders 6, [23 gastroschisis, 9 atresia, 8 aganglionosis , 6 pseudo-obstruction, 6 congenital diarrhoea, 5 necrotizing enterocolitis, and 3 volvulus]. Of the 43 intestinal transplants 9 were isolated small bowel (ISBTx) and 32 combined liver and small bowel (CSBLTx); 8 whole liver and intestine and 24 with size reduction of liver and/or bowel. The median age at transplant was 3.4yrs (range 6 months to 16yrs).

Results. Overall 33 are alive; 31 are on full enteral feeds. Actuarial survival with up to 7 year follow-up is 64% for ILTx, and ±-50% for intestinal transplants.

Conclusions. Recently in the UK there has been an increase in referrals and transplants for IF. Survival in good health on full enteral feeds can now be achieved in the majority of those transplanted in the United Kingdom.

TRANSANAL EVISCERATION OF SMALL BOWEL: A CASE REPORT

HJ Jehle; D Allard
GF Jooste Hospital

We report an unusual case of small bowel evisceration through the anus in an otherwise healthy 24-year old African male who denied any anal penetration. He had spent two years in Pollsmoor prison in the past and describes a prolapsing rectum since childhood that was never investigated.

Our operative management was straightforward and we looked for possible diagnostic clues intra-operatively including histological sampling. An extensive photographic iconography illustrates the case. Our final diagnosis remains unclear. The prolapsing rectum has not recurred since the laparotomy.

We reviewed the literature for reports on 'solitary rectal ulcer' and other causes of transanal evisceration. Only 50 other cases were identified.

Our discussion includes the possible non traumatic differential diagnoses.

The aim is to expose the case to the South African surgical society and to raise a debate on the diagnostic dilemma and the therapeutic follow up. We are aware that the medical public will have diverse opinions on this case.

ABDOMINAL TRAUMA STUDY: FACTORS INFLUENCING OUTCOME

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Introduction. The diagnosis of abdominal trauma is inherently difficult owing to the presence of numerous confounding variables. It continues to pose diagnostic dilemmas to surgeons resulting in preventable deaths.

Aim. To document our experience with abdominal trauma in our institution and to establish factors affecting outcome.

Patients and methods. Prospective study of all patients sustaining abdominal trauma treated in one surgical unit in King Edward VIII Hospital, Durban (1998 - 2004). Information collated included demographic details, mechanism of injury, delay in presentation and treatment, clinical and laboratory indices including presence of shock, findings at surgery, outcome, ISS and NISS.

Results. Of 476 patients studied, 438 were male. Mean age 29.13±10.72 years. Mechanism of injury included blunt injuries (48), firearms (235) and stabs (193). Morbidity rate of 23.74%, mortality rate of 10.71%, fatality in blunt trauma (23%), firearm injuries (14%) and stab wounds (3%). 53 patients admitted with shock at presentation with mortality of 43% vs. 28 patients 6.6%) who subsequently died who were not in shock. Mortality rate increased with number of abdominal organs involved. 33.33% of deaths had associated extra-abdominal organ involvement. 78.43% of deaths had associated hollow visceral injury. Mortality rate increased with higher ISS but this was more clearly evident with NISS.

Conclusion. Mechanism of injury, hypovolaemic shock at presentation, increased abdominal organ involvement, hollow visceral injuries and extra-abdominal organ involvement are associated with increased mortality (p <0.05). NISS is a more valid and representative assessment vs. ISS.

AN AUDIT OF THREE YEARS OF APPENDICECTOMIES AT FRERE HOSPITAL

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Appendicectomy remains the most commonly performed non-trauma related emergency procedure at Frere Hospital. While it is one of the first procedures to be learnt by surgical trainees, it is often technically difficult and not without significant potential complications.

Aims and methods. This is a retrospective audit of appendicectomies over a period of three years. All patients who underwent appendicectomy during this period were included in the study. Information was gathered by studying the theatre records and case notes.

Results. The vast majority of appendicectomies are performed after hours by surgical trainees and medical officers. The rate of perforated appendices remains high. Patients with perforated appendices are more prone to complications and remain in hospital longer. Also of interest is the relationship between our two main outcome measures (length of hospital stay and complications), and operation factors (time of procedure and grade of surgeon) and patient factors (home address and age). We also demonstrate that Appendicitis is a condition influenced by the season.

Discussion. By examining our practice with respect to appendicectomy we are able to make deductions about the quality of our surgical service and health care in the Eastern Cape Province in general. The unacceptably high rate of perforated appendices observed during this period is probably due in part to continued poor access to specialist health care resources and the vast geographical area covered by our unit. In our setting we can find no justification for delaying surgery so that it can be performed during 'office hours', as has become the norm in 'first world' countries.

A PROSPECTIVE COMPARATIVE STUDY BETWEEN TENCKOFF CATHETER PLACEMENT FOR PERITONEAL DIALYSIS VIA PERCUTANEOUS ROUTE UNDER LOCAL ANAESTHETIC AND OPEN PLACEMENT IN THEATRE FOR END STAGE RENAL FAILURE

E. Muller, D. Kahn
University of Cape Town

Principal objectives. Tenckoff catheters had traditionally been done as an open procedure under general anaesthetic at Groote Schuur Hospital. Because of lack of theatre time and to be more cost effective, we have started placing Tenckoff catheters with a Seldinger technique under local anaesthetic in the dialysis unit. The aim of the study was to prospectively collect data on outcome and complications.

Methodology. The author had 16 patients between February 2006 and December 2006 who received a Tenckoff catheter under local anaesthetic. Patients were selected according to body mass index and whether they had previous abdominal surgery. Only patients with a body mass index below 25 and without previous abdominal surgery were selected to have the procedure done under local anaesthetic. During the same time, 22 Tenckoff catheters were placed under general anaesthetic with an open technique.

Principal conclusions. In the local anaesthetic group of 16 patients, one patient's Tenckoff catheter was placed pre-peritoneally and had to be redone One catheter did not function because of a poor position and had to be repositioned in theatre. Two patients had a superficial wound infection which settled with antibiotics and local antiseptic treatment. In terms of cost there was a saving of 16 hours in theatre. The waiting time from time of diagnosis to catheter placement was between 2 and 10 days. There were no bowel perforations and no complications post procedure which required surgery.

In the general anaesthetic group there were 2 Tenckoffs that did not function and had to be replaced. There was one exit site infection which responded well to antibiotics. The waiting time between time of diagnosis and catheter placement ranged from 2 weeks to 8 weeks. In this time the patients were dialysed with temporary neck lines. On average the patients took up an hour in theatre (30 minutes - 72 minutes) taking turnover time into account. Two patients needed more than 2 necklines in the time they have been on the waiting list.

Recommendation. In a carefully selected group, Tenckoff catheters can be safely placed under local anaesthetic, saving theatre time and saving time on the waiting list.

EPIDURAL PAIN CONTROL IN DONOR NEPHRECTOMIES

E. Muller, D. Kahn
University of Cape Town

Aim. To look at the outcome of epidural infusions for donor nephrectomies from January 2006 to May 2007

Method. Patients received a pre-operative epidural by the anaesthetist doing the case before going onto the operative table. Patients were then started on an epidural infusion post-operatively consisting of 40 ml Saline, 200mg Bupivacaine and 20mg Morphine (0,1% Bupivacaine and Morphine). The epidural infusion ran at 2-10ml/hour. A post op observation chart was done for each patient looking at the quality of the analgesia every 4 hours. This was done

by looking at a pain score (0-3 where 0 was no pain and 3 severe pain) as well as a pain line between 0 and 10 (0 – no pain and 10 – a lot of pain). The level of analgesia and the motor power in the legs was charted every 4 hours as well. All patients were in a high care unit post-operatively and epidurals that worked well stayed in for 48 hours.

Results. In the time period we had 19 donors who received epidurals. In 4 patients the epidural did not work at all and the patient was converted to either a PCA or a Morphine infusion. One patient experienced severe itching and the epidural was removed after 24 hours despite very good pain control. In 6 patients the epidural worked reasonably well with pain levels between 4 and 6 on the pain line and pain scores of 1-2 (comfortable at rest but moderate pain when moving or coughing). In 8 patients the epidural made the patient pain free and the patient scored between 0 and 1 on the pain line and 0 on the pain score. One patient in this group also experienced itching but the epidural was continued for the full 48 hours.

Conclusion. Epidural worked very well as post operative analgesia in a high care unit with no serious adverse events. It gave excellent pain control and when it did not work well it was obvious from the start that the epidural would not work so the patient could be converted to a different type of analgesia.

LAPAROSCOPIC ASSISTED RESTORATIVE PROCTOCOLECTOMY IN ADOLESCENTS WITH ULCERATIVE COLITIS

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Objective. To describe our early experience and results with laparoscopic assisted restorative proctocolectomy in adolescents with ulcerative colitis.

Method. Retrospective descriptive study of the first 12 cases of laparoscopic assisted proctocolectomy in adolescents with ulcerative colitis by a single surgeon. All cases were done using a laparoscopic assisted approach, with the J-pouch being created through a right lower quadrant "stoma" incision. A protecting loop ileostomy was sited through this incision in all cases.

Results. Mean age of patients was 15.4 years, and 6 were male. Eleven of the patients had a diagnosis of ulcerative colitis and one patient had a diagnosis of indeterminate colitis. Nine of the procedures were done following a previous subtotal colectomy, and in the remaining cases the colectomy was done laparoscopically at the time of pouch creation. Median operative time was 377 minutes (range: 240 - 500), and median estimated blood loss was 75 milliliters (range: 0 - 200). Median number of days of intravenous opioids was 3 days (range: 2 - 6), median time to clear fluids was 4 days (range: 2 - 14), and median hospital stay was 6.5 days (range: 3 - 32). Significant complications occurred in 6 patients (2 adhesive small bowel obstructions not requiring surgery, 2 intra-abdominal collections, and 2 stoma problems requiring early closure).

Conclusion. A laparoscopic approach to restorative proctocolectomy is feasible in adolescents with ulcerative colitis. Despite superior cosmesis, peri-operative morbidity is similar to that seen with open procedures.

THE 3G (GREY'S GHIMENTON GASTROPEXY): AN ANATOMICAL MAKE OVER FOR THE MANAGEMENT OF GASTRIC VOLVULUS

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Introduction. Gastric volvulus is an abnormal rotation of the stomach along its axes; mesentero-axial along its horizontal axis and organo-axial along its longitudinal axis. Stomach fixation is the mainstay treatment. Multiple methods are used. We present our original technique, which can be applied to both acute and chronic volvuli.

Operative technique. The stomach is de-rotated and decompressed via the nasogastric tube. The gastro-colic ligament is divided allowing a complete mobilization of the stomach from the transverse colon. The transverse colon is then elevated to identify an avascular space between the mid-colic artery and the ascending colonic arcades. A window of at least a 10cm is created by the removal of the peritoneum. The mesocolon defect is then positioned over the body and antrum of the stomach and its margins are attached against the anterior gastric wall with non-absorbable, interrupted sutures. After this anatomical reconstitution the stomach lies "naturally" under the colon.

Patients and outcome. This technique has been applied to two patients.

A 21-year old female patient with a three weeks history of epigastric pain, white bubbly vomitus, epigastric tenderness and constipation for four days. A plain abdominal x-ray showed a massively distended stomach. Barium meal demonstrated a mesentero-axial gastric volvulus.

A 61-year old female patient on warfarin for a mitral valve replacement gave a three month history of intermittent vomiting and non specific epigastric pain. Gastroscopy showed a very abnormal internal stomach configuration and barium meal showed and organo-axial volvulus.

Surgery confirmed the abnormalities and they underwent the above-described fixation.

They make an uneventful post-operative recovery and at review 6 weeks later were tolerating a normal diet with no recurrence or their original symptoms. A barium meal showed a normal anatomical configuration throughout varying patient positions.

Conclusion. We consider our technique anatomically and physiologically sound, it is simple, avoids resectional surgery or gastrostomy and provides multiple point fixation. It has the potential for laparoscopic application.

ENDOSCOPIC PLACEMENT OF SELF EXPANDING METALLIC STENTS FOR ESOPHAGEAL CANCER WITHOUT THE USE OF FLUOROSCOPY

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Introduction. Endoscopically placed self expanding metallic stents (SEMS) are commonly used to provide palliation for oesophageal cancer. Most of these SEMS are placed with the aid of fluoroscopy in the radiology suite. We have developed a technique to place

SEMS under direct vision so obviating the need for fluoroscopy. This study reviews our experience with this technique.

Methods. A retrospective review of all SEMS placed at the Greys Endoscopic Unit from Jan 2005 until May 2007 was undertaken. All irresectable tumors are dilated at upper endoscopy. A routine upper endoscopy is then performed to assess the extent of the tumor. The proximal and distal extents are noted and recorded in centimetres from the incisor teeth. The delivery device is calibrated in centimeters. This allows us to place the device at a level approximately 3 cm proximal to the upper extent of the lesion. (The formula used is proximal extent of lesion in cm from the incisors -3 cm). The endoscope is then placed just above the stent and the stent is deployed under direct vision. After deployment an endoscopy is repeated to assess patency. The patient is allowed liquids on the day of stenting and started on a soft diet the following day.

Results. A total of 155 expandable metallic stents were placed in patients with severe dysphagia due to carcinoma of the esophagus. 95 (61%) were males and 60 (39%) were females. The average age was 60 years old with a range from 32-89 years old. Most tumors 96 (62%) were in the distal third of the esophagus, with 56 (36%) mid third and 3 (2%) in the proximal third. 13 (8%) were documented to have evidence of a fistula. There was a single incidence of the stent being deployed below the proximal extent of the tumor. There was also a single episode of stent migration in a distally placed stent. Correct placement was confirmed endoscopically in all the remainder.

Conclusion. It is feasible to place esophageal SEMS successfully without using fluoroscopy. This reduces radiation exposure for staff and patient and reduces time for the procedure. It is the method of choice in our endoscopic unit.

HEREDITARY MIXED POLYPOSIS SYNDROME (HMPS) IN A SOUTH AFRICAN FAMILY: AN INDEXED CASE REPORT

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The HMPS syndrome is characterised by multiple large bowel polyps (<15) of differing histological types including a mixture of atypical juvenile polyps, hyperplastic polyps and adenomas. Causative mutations have been identified on chromosome 15 and 18. Affected individuals are thought to have an increased risk of malignancy possibly via the juvenile polyposis pathway.

Method. A 51-year old female with a history of a colectomy for polyps during childhood presented with rectal bleeding. Endoscopy 40 years later revealed multiple inflammatory and mucous retention rectal polyps. A family tree was drawn up and the 2 (25 year old male and 17 year old female) of her 3 children underwent flexible sigmoidoscopy.

Results. Endoscopic surveillance of 2 children revealed that both displayed similar phenotypes to the mother. The younger child underwent a colectomy and ileorectal anastomosis. The pathological specimen revealed more than 70 polyps. 2 individuals had a combination of juvenile retention and adenomatous polyps while 1 had only hyperplastic.

There are at least 3 affected individuals in 2 generations. The mutation in this family is currently unknown.

Conclusions

1. A rare inherited polyposis syndrome has been identified in a South African family.

2. Where there is a clinical suspicion of a possible inherited condition, investigating at risk first degree relatives confirms the inherited nature of the disease.

LOWER LIMB AMPUTATION SURVEY IN A SOUTH AFRICAN REGIONAL HOSPITAL

Slabbert, P.H., Allard, D
G.F. Jooste Hospital

Introduction. The exact incidence of diabetes and hypertension is not known in South Africa. Poorly managed patients commonly present with gangrene of the lower limb.

Aims. At the international diabetes congress (Cape Town, 2006) the South African diabetic foot working group recognized the lack of data in patients with lower limb amputations (LLA). We are collecting prospective data since January 2007 on this procedure.

Method. Using a simple data collection sheet, we looked prospectively at all LLA performed at our hospital in the Cape Flats. Gender and age, underlying pathologies, clinical presentation, number of operations performed and duration of in-hospital stay were analyzed.

Results. In the first six months we performed 114 amputations on 75 patients (39 males average age 53; 36 females average age 62). Most had severe underlying co-morbidities. 6 patients survived trauma related amputations. 69 had underlying vasculopathy.

26 of the 34 males and 25 of the 35 females were diabetic. Overall 51 out of 69 'non-trauma' amputees were diabetic (74%). The minority of diabetic patients used insulin.

A third of the patients had had previous amputations in the past. 25 patients required a staged procedure (33%) after supra-malleolar guillotine amputation.

The duration of stay was on average 15 days.

A total of 12 patients died in hospital.

Conclusion. In our hospital 74% of patients losing a leg for vasculopathy are diabetic.

An intensive diabetic foot program is necessary to decrease the amount of amputations performed in SA.

ABSTRACTS: TRAUMA 2007

TRAUMA

Oral Presentations

Thursday 9 August 14h00 - 16h00

SELECTIVE NON-OPERATIVE MANAGEMENT OF ABDOMINAL GUNSHOT WOUNDS: ROLE OF COMPUTED TOMOGRAPHIC SCANNING

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Objectives. Computed tomographic scanning (CT) is increasingly used in patients with abdominal gunshot wouds (AGSWs) selected for non-operative management. The aim of this study is to investigate the role of CT scanning in selecting patients for nonoperative management.

Methods. Study period: April 04 - Jan 2007. Laparotomy was performed for patients with AGSWs with peritonitis and shock. Stable patients with no tenderness or tenderness confined to the wound underwent serial abdominal examination without laparotomy. CT scan was indicated in patients with RUQ tenderness/trajectory suggestive of an isolated liver injury; and patients with haematuria to exclude urinary tract injuries. CT scan to delineate bullet trajectory was left to the discretion of the attending surgeon.

Results. Seven-hundred and thirty-one patients with AGSWs were treated during the study period. Fifteen (2%) died in extremis before reaching theater. Another 522 (71%) underwent emergency laparotomy. One hundred and ninety-four (27%) patients were selected for observation. Of these, 126(68%) had an abdominal CT. CT detected 50 liver, 21 kidney, and 6 splenic injuries. Five patients underwent delayed laparotomy. Overall 189 (26%) patients were sucessfully managed non-operatively.

Conclusion. Abdominal CT scanning should be used selectively, rather than routinely when managing patients with AGSWs non-operatively

This study is supported by a MRC self-initiated grant.

THE DETECTION OF A HAEMOPERICARDIUM AFTER PENETRATING CHEST TRAUMA

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Introduction. The diagnosis of a haemopericardium in the haemodynamically stable patient, who has sustained penetrating chest trauma, is vital with respect to the severity of the injury and to ensure that the patient is adequately managed. The aim of this study was to determine the sensitivity of the diagnostic modalities currently used to diagnose a penetrating injury to the pericardium.

Methods. A prospective study on all patients who underwent a subxyphoid window following the diagnosis of a haemopericardium after penetrating chest trauma at Groote Schuur Hospital Trauma Centre between October 2001 till June 2007. The chest X-ray, electrocardiogram (ECG), ultrasound and operative findings were all analyzed.

Results. 91 patients were included in this study with a mean age of 28 years (range 16-62). The mechanism of injury was a stab wound to the precordium in 84 and gunshot wounds to the chest in 7 patients. The diagnosis of a haemopericardium was correct in 74 (81%) of these patients. ECG changes were present in 70 patients (sensitivity 86%, positive predictive value [PPV] 90%). A straight left heart border was evident in 32 patients (sensitivity 45%, PPV 100%). An ultrasound diagnosed the haemopericardium in 80 patients with 15 false positives and 8 false negatives (sensitivity 89%, PPV 81%).

Conclusion. The gold standard for diagnosing a haemopericardium remains the subxyphoid window and not ultrasound and clinical suspicion should dictate the need for this surgery.

75% PENETRATING CARDIAC INJURY (PCI) SURVIVORS IN A REGIONAL SOUTH AFRICAN TRAUMA CENTRE: AS GOOD AS IT GETS?

Allard D
GF Jooste Hospital

Introduction. Penetrating cardiac injuries (PCI) remain a challenge in trauma surgery. Only high volume trauma centres deal with this condition on a regular basis. Stab wounds (versus gunshot wounds), cardiac tamponade, preserved physiological status, clinical suspicion, rapid surgical management and liberal use of the emergency room thoracotomy (ERT) increase the survival.

The survival figures after PCI recorded in the literature depend upon many factors and are highly variable.

Aim. What survival rate can one expect in PCI patients that arrive with signs of life in a South African high volume regional trauma centre?

We analysed our last 129 consecutive PCI (120 stab wounds, 9 gunshot wounds). We function without a blood bank, critical care specialists or specialised radiological investigations. Medical officers are giving anesthesia. Less then half of the senior surgeons had specialist training. The in-house surgeons-in-training are at a junior level.

Results. 62% of 129 patients had a sternotomy, 30% had a thoracotomy and 8% had an Emergency room thoracotomy (ERT). Surgeons-in-training made the diagnosis and performed the ERT as well as thirty-five operations unsupervised (27%). In total 75% of the patients with PCI survived (97 out of 129) and were discharged home alive and fully functional.

Conclusions. The surgical expertise level, the type of trauma centre as well as the patient profile determine largely the outcome in this acute traumatic condition and must be indicated when giving survival rates.

A South African high volume regional trauma centre that deals with a large number of stab wounds to the heart can achieve a 75% survival rate in PCI.

PENETRATING COLON INJURIES: AN ANALYSIS OF 104 PATIENTS

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Introduction and aim. Colon injury has been associated with a high risk of septic complications. This audit of patients with penetrating colon injuries was performed to determine the outcome

in an urban trauma centre with a high incidence of penetrating trauma where primary repair for most colon injuries is practiced.

Methodology. The data of all patients with a full-thickness penetrating colon injury admitted to the Trauma Centre at Groote Schuur Hospital over a four-year period (January 2003 – December 2006) was reviewed. These were reviewed for demographics, injury mechanism and peri-operative management, anatomical site of the colon injury, associated intra-abdominal injuries and their management. Colonic injuries were graded as either simple or complex. Infectious complications, fistulae and mortality were noted. Injury severity was categorized using the RTS, ISS and PATI scores. Colonic injuries were generally primarily repaired. Complications were recorded.

Results. One hundred and four patients presented with penetrating colon injuries. Colon wounds were caused by gunshots in 87 (84%) and stab wounds in 17 (16%) patients. There was a mean delay of 6.6 (range 1 – 48) hours. The mean RTS, ISS and PATI scores were 11.2, 29, 7 and 22,4, respectively. There were 85 (82%) simple and 19 (18%) complex injuries. Complications included surgical site infection 8 (7.6%), intra-abdominal abscess 10 (9.6%), colocutaneous fistula 4 (3.8%) and one gastrocolic fistula. The overall mortality rate was 9.6% and colon injury-related mortality was one (1%). Traditional prognostic factors such as shock, massive transfusion, delay and site did not affect outcome in patients treated with primary repair.

Conclusion. Primary repair for most penetrating colon injuries is safe.

CIVILIAN EXTRAPERITONEAL RECTAL GUNSHOT INJURIES: SURGICAL MANAGEMENT MADE SIMPLER

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Objective. Rectal injuries are associated with significant morbidity. Controversy persists regarding routine presacral drainage (PSD), distal rectal washout (DRW), and primary repair of extraperitoneal rectal injuries. This retrospective review was performed to determine the outcome of rectal injuries in a centre with a high incidence of penetrating trauma where a non-aggressive surgical approach to rectal injuries is practised.

Methods. The records of all patients with full-thickness rectal injuries admitted to the Trauma Center at Groote Schuur Hospital over a 4-year period were reviewed (Jan 02-Dec 05). Demographics, injury mechanism, perioperative and surgical management data were extracted from the records. Infectious complications and mortality were noted. Extraperitoneal rectal injuries were generally left untouched, and a diverting colostomy performed without PSD and DRW.

Results. Ninety-two patients with 118 rectal injuries [intraperitoneal (7), extraperitoneal (59), combined (26)] were identified. Only two extraperitoneal rectal injuries were repaired. None had PSD and 2 had DRW. Eighty-six sigmoid loop colostomies were performed. There were nine (9.9 %) infectious complications. No perirectal sepsis occurred. Two (2.2%) fistulas were recorded: rectovesical (1) and rectocutaneous (1).

Conclusion. Extraperitoneal rectal injuries can be safely managed by fecal diversion; without repair, DRW, and PSD with minimal morbidity.

PERCUTANEOUS ENDOSCOPIC GASTROSTOMY – A MODIFIED TECHNIQUE

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Objective. To demonstrate a simpler technique for percutaneous endoscopic gastrostomy (PEG) insertion; taking into account the cost as well as complications of the technique.

Methods. A prospective evaluation of a modified technique for PEG insertion. Four patients who required feeding gastrostomy between 01/10/2006 and 31/01/2007 were included. Three patients had sustained severe head injuries. One patient had suffered a gunshot injury to the mouth. Readily available suprapubic cystostomy catheters with a balloon tip (Tyco) were utilised. The introducer assisted push-in technique under endoscopic vision was employed. Three patients who required tracheostomy at the same sitting were done under general anaesthetic. One patient was done under sedation and local anaesthetic. Feeding was commenced on day one post operatively in all patients. All patients were followed up to time of removal of the PEG or death. Post mortem findings were analysed in the patients who died.

Results. In one patient the catheter slipped out day two post-operatively. No adverse consequences occurred related to this complication. In three patients the PEG catheter was utilised for feeding until it became unnecessary. Three patients died due to their head injuries and pneumonia. Post mortem evaluation of the peritoneal cavity in all these patients showed no complication related to the gastrostomy. One patient survived to discharge with no complication.

Conclusion. The technique described is simple and safe. It utilises readily available and less costly materials.

FEMORAL VESSEL INJURY: AN AUDIT OF 64 PATIENTS

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Introduction and aim. Femoral vessel trauma is the second most common peripheral vascular injury seen. The aim of this study is to review the outcome of patients with such injuries in a centre with a high incidence of penetrating trauma.

Methodology. The data of all patients with femoral vessel injuries admitted to the Trauma Centre at Groote Schuur Hospital over a 4-year period [Jan 2003 - Dec 2006] was reviewed. These were analysed for demographics, injury mechanism, perioperative management, intraoperative findings, type of repair and the incidence of fasciotomy. Presenting limb status was categorised into viable, threatened or non-viable limbs. Outcome was grossly categorised by limb salvage.

Results. Sixty-four patients presented with femoral vessel trauma. There were 57 men, with a mean age of 28.5 [16-71] years. There were 50 (78%), 10(16%), and 4 (6%), low-velocity gunshot, stab and blunt injuries, respectively. Thirty-eight patients presented with a viable limb, 25 with an ischaemic limb and one with a non-viable limb. Immediate exploration was performed in 17 patients, while 33 and 17 patients had formal and emergency room angiography, respectively. Arterial repair consisted of: primary anastomosis (37), RSVG (16), PTFE (3) and shunting (1). In two patients exploration revealed normal vessels and one patient with a compartment

syndrome revealed only a venous injury. Two profunda femoral arterial injuries were ligated. Twenty seven fasciotomies were done, 16 of which were therapeutic. There were 4 (6.25%) amputations, one done primarily for a mangled limb, and three delayed amputations for patients who presented with ischaemic limbs after attempted limb salvage.

Conclusion. An initial aggressive approach to femoral vessel injuries by trauma surgeons is associated with a good limb salvage rate. Amputation was highest in patients presenting late with ischaemic/non-viable limbs.

NON-OPERATIVE MANAGEMENT OF PENETRATING KIDNEY INJURIES: A PROSPECTIVE AUDIT

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Introduction and aim. The role of non-operative management for penetrating kidney injuries is unknown. The purpose of this study is to review the management and outcome of penetrating kidney injuries in a centre with a high incidence of penetrating trauma.

Methodology. All patients presenting with haematuria and/or kidney injuries discovered at surgery admitted to the Trauma Centre at Groote Schuur Hospital over a 19-month period [Jan 2005 - July 2006] was prospectively collected and reviewed. These were analysed for demographics, injury mechanism, perioperative management, nephrectomy rate and nonoperative success. Patients presenting with haematuria with an acute abdomen underwent single-shot intravenous pyelogram. Those presenting with haematuria without an indication for laparotomy had a contrasted CAT scan.

Results. Ninety-three patients presented with haematuria. There were 68 proven renal injuries. There were 85 men, with a mean age of 28.5 [16-55] years. There were 36 (52%) stab and 32 (47%) gunshot renal injuries. Investigations done: IVP – 24 and CAT scan – 57. There were 21 (31%) nephrectomies performed for uncontrollable bleeding (10), hilar injuries (3), and 'shattered' (6). Postnephrectomy complications included one infected renal bed haematoma requiring percutaneous drainage. Eight (12%) injuries found at laparotomy were not explored, three were drained and 4 underwent renorrhaphy. Thirty-two (47%) renal injuries were managed nonoperatively without laparotomy. Three patients in this group presented with delayed haematuria and had successful angioembolisation of arteriovenous fistula (2) and false aneurysm (1). All nonoperatively managed renal injuries were successfully managed without surgery.

Conclusion. Penetrating trauma is associated with a high nephrectomy rate (31%). However, a high non-operative success rate (59%) is achievable with minimal morbidity.

THE EFFECTIVENESS OF THE STATSCAN® IN THE RESUSCITATION OF INJURED PATIENTS: A PROSPECTIVE STUDY

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Background. The ultimate goal in the management of a trauma patient is a rapid resuscitation, stabilization and the initiation of definitive care. The Statscan® is a new low radiation dose, digital X-ray device which allows rapid imaging of the whole body. The purpose of this study is to review the use of this imaging modality in the primary survey of injured patients.

Method. A prospective study of trauma patients admitted to the resuscitation room of Groote Schuur Hospital between October 2006 and February 2007 was conducted. The primary survey X-rays were completed using the Statscan®. The time taken to obtain the images, the need for further radiological investigations, the ability to identify injuries, and the way in which the information obtained affected management, was assessed. A CT of the cervical spine was also obtained as the gold standard in all patients after blunt trauma.

Results. 100 patients were included in the study with a mean Injury severity score of 16 with a range between 1 and 50. The mechanism of injury was MVA in 44%, GSW in 27%, Blunt assault in 23% and Stab wounds in 7% of patients. A total of 100 Statscan® whole body images, 84 lateral cervical spine images and 78 swimmers views were obtained The mean time taken to obtain images was 11.1 minutes with a range from 2 to 31 minutes. Only an additional 21 conventional X-rays were required. Cervical spine abnormalities were suspected in 29 Lodox images and injuries were confirmed in 6 patients. The information obtained on the digital images affected management in 49% of patients.

Conclusion. The Statscan® is a valuable imaging modality for primary survey. It reduces time taken for imaging and allows rapid injury detection and directs emergency interventions with limited need for additional radiological investigations for primary survey.