

45th Meeting of the Surgical Research Society of Southern Africa

BREAST

TO ACTIVATE OR NOT TO ACTIVATE? THE CONTROVERSY SURROUNDING TAMOXIFEN TREATMENT AND THROMBOSIS

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Background

Cancer is associated with hypercoagulability, with therapies including chemotherapy, radiation therapy, surgery and hormone-therapy linked to an increased risk of thrombotic complications. Notwithstanding the contribution of other haematological processes and components, platelets are implicated in contributing to a hypercoagulable state, with breast cancer patients receiving Tamoxifen treatment at a greater risk for thrombotic complications.

Aim

The Aim of this study was to assess the effects of Tamoxifen treated-breast cancer cells on the induction of platelet activation in an in vitro system.

Methods

MCF-7 and T47D breast cancer cells were cultured under standard conditions, followed by treatment with 2uM Tamoxifen for 24 hours and co-cultured with whole blood (WB) for 2.5 minutes. WB samples were then treated with red blood cell lysis buffer and processed for flow cytometry. Samples were analysed on the LSR Fortessa by FACSDiva, using an interval gating strategy to determine levels of CD62p expression, and further quantitatively analysed using IBM SPSS v23.

Results

Preliminary in vitro Results reveal that Tamoxifen treatment enhances the ability of breast cancer cells to induce platelet activation. The severity of platelet activation is dependent on the sub-phenotype of breast cancer cells used, with T47D cells inducing the highest levels of activation.

Discussion

While our data concurs with that of the clinical setting, other laboratory studies show that Tamoxifen prevents platelet activation. Therein lies the controversy – we postulate that experimental design and methodological approaches to this question have resulted in disparate conclusions. Additionally,

an understanding of release of mediators of attachment using other techniques could further reveal the underlying assumptions behind these contradictions that ultimately may affect the approach to clinical management.

APPLICATION OF GENE PROFILING IN SELECTION OF ADJUVANT THERAPY IN BREAST CANCER IN A DEVELOPING COUNTRY

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Background

Outcome series for genetic profile tests (MammaPrint/70GP) with medium-term follow-up are rare and the popularity of these tests have now necessitated inclusion into international guidelines. We present here a series with 5-year follow-up from a developing country.

Aim

To evaluate the impact of the gene profiling on decision making and the clinical outcomes there-of with respect to disease free survival in a resource constrained setting

Methods

From 2006 to 2016, patients with histopathologically confirmed breast cancer (cT0-3 and cN0-1) had specimens submitted for 70GP and decisions on adjuvant therapy post-surgery were based on these Results. Data on outcomes were collected prospectively.

Results

There were 154 patients: 140 luminal type, 13 HER2 type and one triple negative; 57.8% were 70GP low-risk; only one of these did receive chemotherapy; 42.2% were high-risk; 3 patients did not receive chemotherapy. After an average follow-up of 54.1 months, 3 systemic recurrences occurred (all skeletal metastases), all in the high-risk group that had received chemotherapy. Across both groups overall survival was 99.9% and compliance with the treatment recommendations based on 70GP was > 95% in both arms. Two patients each had two tumours in the same breast with divergent 70GP Results and were treated in accordance with the high-risk result. Six patients showed discordant 70GP and FISH Results for HER2 where three patients did not receive Trastuzumab on basis of 70GP; none of these tumours recurred. A further 11 patients had equivocal Immunohistochemistry and a FISH was not done; therapy was decided upon considering the 70GP result and none of these patients had any recurrences.

Discussion

Chemotherapy use was much reduced versus the rate of use with conventional Methods using 70GP and, furthermore, it may be reasonable to replace immunohistochemistry for ER, PR and HER2 with 70GP especially considering borderline expression.

BREAST GROSSING PRACTICES AND TURN-AROUND-TIMES BEFORE AND AFTER THE INTRODUCTION OF A STANDARD BREAST PATHOLOGY SUBMISSION FORM: AN AUDIT

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Background

Although the use of a standardized, synoptic pathology report for breast cancer has been demonstrated to improve the quality of reports, the role of a standardized form for the submission of breast cancer excision specimens to the histopathology laboratory has not yet, to our knowledge, been investigated.

Aim

To undertake an audit of the grossing of breast cancer excision specimens received at the Anatomical Pathology Laboratory of the Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) from the Helen Joseph Hospital (HJH) Breast Unit before and after the introduction of such a standardised requisition form ('breast proforma').

Methods

The proforma for oncological breast excisions was devised collaboratively between the pathologists and the surgeons. During the month prior to the introduction of the proforma, and in the three-and-a-half months following the form's roll-out, the senior pathology registrar at the CMJAH grossing bench completed an audit form for each breast cancer excision from HJH. The total turn-around-time (TAT) for each specimen was calculated retrospectively for each specimen audited.

Results

Seventy-eight cases were audited, 17 before the introduction of the proforma and 61 after. The 3 cases received without attached proformas in the second cohort were excluded from the data analysis. The mean grossing time per specimen was unchanged in the two cohorts. The call rate to clinicians decreased from 0.47 to 0.16, as did the rate of required clinician visits to the laboratory (11.8% vs. 6.9%), the percentage of cases in which there was grossing confusion (29.4% vs. 15.5%) and the overall case TAT (18.4 days vs. 16.3 days). None of these results reached statistical significance. There was, however, a statistically significant reduction in grossing delays (1.76 days vs. 0.0293 days, $p = 0.0293$) and in percentages of cases with mislabelled or misorientated tissue (29.41% vs. 8.62%, $p = 0.0413$).

Discussion

Our experience is that the use of a proforma in the grossing of breast excision specimens has resulted in an overall

improvement in specimen grossing (specifically by reducing grossing delays and tissue mislabelling/misorientation) and has improved communication between surgeons and pathologists in this regard.

AXILLARY LYMPH NODE DISSECTION IN INVASIVE BREAST CANCER PATIENTS AT CHARLOTTE MAXEKE JOHANNESBURG ACADEMIC HOSPITAL AND CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL

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Background

Axillary lymph node dissection (ALND) carries a high morbidity and sentinel node biopsy has become the standard of care in node-negative disease. Patients in our setting are assessed as node-positive on the basis of physical examination and axillary ultrasound and will undergo ALND without prior biopsy. The administration of neoadjuvant chemotherapy (NACT) may downstage the axilla and offer opportunities for axilla-sparing surgery.

Aim

The Aim of this study was to determine the prevalence of node-negative ALND and its relation to NACT and lacking preoperative pathological confirmation of nodal involvement.

Methods

This retrospective cohort study included all female patients older than 18 years of age who underwent axillary surgery in the breast units at Charlotte Maxeke Johannesburg Academic Hospital and Chris Hani Baragwanath Academic Hospital from March 2013 to March 2015. Odds ratios (OR) were calculated for a node-negative ALND after NACT and in the absence of axillary biopsy prior to surgery.

Results

We included 509 eligible patients and 391 underwent ALND (76.8%). A total of 99 patients (25.3%) had a node-negative ALND. Amongst these, 47 (47.5%) had received NACT. The risk of a node-negative ALND was not significantly increased when compared to patients who had primary surgery (OR 1.02). Only 41 of the 509 patients (10.5%) had preoperative pathological confirmation of nodal involvement. Patients with preoperative biopsy of the axilla were at reduced risk (OR 0.58) for node-negative ALND.

Discussion

Of our ALNDs, 25.3% were node-negative. Contributing factors include the lack of preoperative pathological confirmation of nodal involvement. Routine biopsy of suspicious nodes should be introduced in our clinical practice. NACT did not increase the risk. There is a need to specifically evaluate the impact of HIV status on axillary management.

CLINICAL BREAST EXAMINATION SCREENING BY TRAINED LAYWOMEN IN MALAWI INTEGRATED WITH OTHER HEALTH SERVICES

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Background

Breast cancer awareness and early detection are limited in Sub-Saharan Africa. Resource limitations make screening mammography or clinical breast examination (CBE) by physicians or nurses impractical in many settings.

Aim

We Aimed to assess feasibility and performance of CBE by laywomen in urban health clinics in Malawi.

Methods

Four laywomen were trained to deliver breast cancer educational talks and conduct CBE. After training, screening was implemented in diverse urban health clinics. Eligible women were 30 years old, with no prior breast cancer or breast surgery, and clinic attendance for reasons other than a breast concern. Women with abnormal CBE were referred to a study surgeon. All palpable masses confirmed by surgeon examination were pathologically sampled. Patients with abnormal screening CBE but normal surgeon examination underwent breast ultrasound confirmation. In addition, 50 randomly selected women with normal screening CBE underwent breast ultrasound, and 45 different women with normal CBE were randomly assigned to surgeon examination.

Results

Among 1220 eligible women, 1000 (82%) agreed to CBE. Lack of time (69%) was the commonest reason for refusal. Educational talk attendance was associated with higher CBE participation (83% versus 77%, $P = 0.012$). Among 1000 women screened, 7% had abnormal CBE. Of 45 women with normal CBE randomised to physician examination, 43 had normal examinations and two had axillary lymphadenopathy not detected by CBE. Sixty of 67 women (90%) with abnormal CBE attended the referral visit. Of these, 29 (48%) had concordant abnormal physician examination. Thirty-one women (52%) had discordant normal physician examination, all of whom also had normal breast ultrasounds. Compared with physician examination, sensitivity for CBE by laywomen was 94% (confidence interval [CI] 79%–99%), specificity 58% (CI, 46%–70%), positive predictive value 48% (CI, 35%–62%), and negative predictive value 96% (CI, 85%–100%). Of 13 women who underwent recommended pathologic sampling of a breast lesion, two had cytologic dysplasia and all others benign Results.

Discussion

CBE uptake in Lilongwe clinics was high. CBE by laywomen compared favourably with physician examination and follow-up was good. Our intervention can serve as a model for wider implementation. Performance in rural areas, effects on cancer stage and mortality, and cost effectiveness require evaluation.

IS WAITING THE HARDEST PART? A CRITICAL STUDY OF THE EXPERIENCE OF WOMEN AWAITING BREAST BIOPSY RESULTS

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Background

Most previous research efforts have focused on the psychological effects of receiving a cancer diagnosis rather than the period of waiting for definitive Results. Early detection of cancer is directly linked to successful treatment regimes, yet these procedures evoke significant anxiety in patients. The long wait for medical test results in state health institutions, with one of the possible outcomes being a cancer diagnosis, means that the days of waiting can induce emotional distress before the diagnosis has even been given.

Aim

The aim of the study was to explore the experiences of women as they wait for their results from a breast biopsy. The focus of this research is on the emotions and cognitions experienced by the research collaborators during this waiting period.

Methods

Eight research collaborators were invited to, in their own voice, shed light on their individual experiences while waiting for their biopsy Results to gain an understanding of the experiences of each collaborator by letting her tell her story and to explore the possibility of shared experience between collaborators. Research collaborators at a local, government hospital kept a journal for the two-week waiting period for their biopsy results. Shortly before receiving their results, they took part in a short semi-structured interview to inquire about their waiting. The theoretical framework used for data interpretation is critical theory focusing on the structures within society and healthcare systems that impact on the experience of waiting. The undercurrent of critical commentary about the roles of the gender, economic, political and cultural factors that contribute to the screening experience for women in South Africa helps to shed light on the complex forces at play within the procedures.

Results

The results indicate that for some women waiting provokes significant psychological stress which manifests in multiple psychological processes including the psychological bracing phenomenon, denial, suppression and negation of their emotional experience all perpetuated by the structures of power within the health care system.

Discussion

More understanding of the psychological experience of awaiting a cancer diagnosis is required and there is an important place for qualitative approach to breast cancer research in South Africa.

BREAST ARTERIAL CALCIFICATION ON MAMMOGRAPHY - A PROPOSED TOOL TO IDENTIFY WOMEN AT RISK FOR CARDIOVASCULAR DISEASE

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Background

Calcification of breast arteries, observed on mammography, has been shown to have a positive association with cardiovascular disease and its risk factors, with literature suggesting that its presence should alert the clinician to underlying subclinical disease.

Aim

This study Aims to find an association between mammographically detected breast arterial calcifications and cardiovascular risk factors, and determine if this correlation is strong enough to warrant further investigations.

Methods

Of the women referred for mammograms between 1 January 2011 and 31 December 2011, 167 women over the age of 50 years, were included in the study. A retrospective review of the mammograms was done to determine the prevalence of breast arterial calcifications. A questionnaire pertaining to cardiovascular risk factors, including age, smoking status, history of diabetes, hypertension, cholesterol, gout, family history of cardiovascular events and obesity was completed.

Results

The prevalence of breast arterial calcification in our study was 21% (95% confidence interval CI 15.1%–27.9%). Controlling for age, only hypertension was significantly associated with the presence of breast arterial calcification ($p = 0.011$). Smoking ($p = 0.18$), diabetes ($p > 0.09$), cholesterol ($p = 0.78$) and family history ($p = 0.31$) failed to show a significant association.

Discussion

The presence of breast arterial calcification detected on mammogram is associated with hypertension in our study group, but failed to show any significant association with the other cardiovascular risk factors. If found at time of mammogram, the patient should be referred for assessment and, if necessary, treatment of hypertension.

AN AUDIT OF PROVIDER DELAY IN NEWLY DIAGNOSED BREAST CANCER IN A CENTRAL REFERRAL HOSPITAL IN JOHANNESBURG, SOUTH AFRICA

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Background

Breast cancer is one of the most common cancers in women worldwide and accounts for an increasing burden of disease in South Africa. One of the factors identified in improving outcome in patients with newly diagnosed breast cancer is

decreased time from recognition of a breast symptom to initiation of primary therapy.

Aim

This study Aims to quantify provider delay within a specific centre, and identify potential reasons for the delay, if present.

Methods

A total of 257 patients from 1 January 2014 to 31 December 2014 were included in the study. Patient records were examined and date intervals for each patient were recorded from initial presentation to primary therapy. The Results were compared to a standard of 90% of patients reaching primary therapy within 60 days.

Results

Median delay (interquartile range) to primary therapy was 49 days (33–80d). The primary chemotherapy group had a median delay of 48 days (30–71d), the primary endocrine therapy group had a 28 days (22–41d) delay, and the primary surgery group had a delay of 73.5 days (39.8–113.5d). The addition of diagnostic surgery to the treatment plan added 37 days to the primary chemotherapy group and 38 days to the primary surgery group. Notably, 101 patients (39.29%) had a delay greater than 60 days.

Discussion

The centre did not achieve the standard of 90% of patients reaching primary therapy within 60 days. Specifically, 36.8% of patients in the primary chemotherapy group, 58.3% of patients in the primary surgery group and 11.5% of patients in the primary endocrine therapy group did not reach the target. The delay was most pronounced in the group of patients undergoing primary surgery, with a median time to surgery greater than the target time of 60 days. Factors affecting delay to primary surgery warrant further investigation.

THE RATES AND RISK FACTORS FOR LOCAL RECURRENCE OF PHYLLODES TUMOURS IN A SOUTH AFRICAN POPULATION

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Background

Phyllodes tumours are rare fibroepithelial neoplasms of the breast. The dilemma with phyllodes tumours is their tendency to local recurrence.

Aim

The Aim of this retrospective review of phyllodes tumours in a South African population was to describe the histological and clinical features most prevalent, to determine the rate of local recurrence and to describe the clinical and histological risk factors for local recurrence.

Methods

We retrospectively assessed all histological reports of patients diagnosed with a phyllodes tumour after surgery at the University of the Witwatersrand NHLS (National Health Laboratory Service) Anatomical Pathology Laboratories,

Johannesburg, South Africa from 1 January 2005 to 30 June 2016. Clinical and histological parameters were analysed.

Results

A total of 185 patients were identified. The median age of the patients was 42 years. There were 89 (48.1%) patients with a benign tumour, 34 (18.4%) with a borderline tumour and 62 (33.5%) with a malignant tumour. The size of the tumours ranged from 11 to 460 mm, with a mean of 106.1mm and SD of 79.6. Breast conserving surgery (BCS) was performed on 64.3% of patients and 35.7% of patients had a mastectomy. There was an overall local recurrence rate of 3.78% (2.2% for the benign tumours and 8.1% for the malignant tumours). No clinical or histological factors were found to significantly predict local recurrence.

Discussion

Since our study did not find any predictors of local recurrence, we suggest that a wide local excision with 1 cm margins might be unnecessary, and perhaps a negative margin combined with a close follow up for two years after excision is necessary.

CLINICAL VS PATHOLOGICAL STAGING OF BREAST CANCER: CAN OUR HANDS COMPETE WITH THE MICROSCOPE?

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Background

Tumour size and axillary nodal status are important predictors of prognosis in breast cancer. The clinical examination of the breast is an essential component of preoperative TNM staging, but the accuracy of this method of assessment has been called into question, especially in the determination of axillary nodal status.

Aim

Evaluation of the accuracy of preoperative clinical examination vs histopathological assessment of the surgical specimen in the determination of tumour size and axillary nodal status.

Methods

Data were obtained from a database of breast cancer patients presenting to the Netcare Breast Care Centre in Johannesburg between June 2015 and June 2016. The following cases were excluded: neo-adjuvant chemotherapy / primary endocrine therapy, patients who did not proceed to surgery, surgical margin clearance only, surgical biopsy prior to presentation, incomplete staging information and atypical breast tumours. Clinical evaluation was performed by a senior specialist breast surgeon. The clinical and pathological tumour size (AJCC/ UICC TNM T-stage) and nodal status (AJCC / UICC TNM N-stage) of the remaining patients were analysed for correlation.

Results

Two hundred and twenty-nine (n = 229) patients were included in the analysis. All were female, with a mean age of 52 years (range 27–85). The clinical estimation of T-stage correlated with histopathology in 157/229 cases (68.6%). Of the

72 cases where the T- stage did not match, clinical examination underestimated tumour size in 42 patients (58.3%) and overestimated tumour size in 30/72 (41.7%). Clinical examination for axillary lymphadenopathy had a sensitivity of 2.2% (95% CI 0.1 - 13.0%) and a specificity of 99.5% (95% CI 97.0 - 99.9%), positive predictive value (PPV) of 50.0% and negative predictive value (NPV) of 83.6%.

Discussion

Even when performed by a specialist, clinical estimation of tumour size is subject to a significant degree of over- and underestimation. Clinical evaluation of axillary nodal status is highly specific, but has a low sensitivity. Findings at clinical examination should therefore be correlated with radiology to facilitate accurate preoperative assessment.

THE SURGICAL MANAGEMENT OF CENTRAL BREAST TUMOURS AT A SPECIALIST BREAST UNIT IN JOHANNESBURG, SOUTH AFRICA

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Background

Central breast tumours are defined as tumours in the retroareolar area, or within 1.5–2.0 cm from the areolar edge. In the past, breast conservation therapy (BCT) for central breast tumours was considered controversial due to concerns regarding oncologic safety and cosmesis. Recent evidence does however suggest that oncoplastic techniques offer a cosmetically acceptable and safe alternative to mastectomy in these tumours.

Aim

To evaluate the surgical and reconstructive techniques utilised in the management of central breast tumours at a specialist breast unit in Johannesburg, South Africa.

Methods

Patients with central breast tumours (invasive and in situ) were identified from a breast cancer database of 431 patients who presented to the Netcare Breast Care Centre in Johannesburg over a one-year period (June 2015–June 2016). Patients who were not managed surgically were excluded from analysis. Demographic data and the details of the surgical procedures performed were collected and analysed.

Results

Forty patients met the inclusion criteria, all of whom were female. The median patient age was 59 years (range 30–88 years). The majority of the tumours were small, with 29/40 tumours ≤ 5 cm (\leq T2) at presentation. Of the 40 patients, 18 were referred for neo-adjuvant chemotherapy. Surgical management was BCT in 19/40 patients and mastectomy in 21/40. In the BCT group, one patient underwent prosthetic reconstruction, while the rest were reconstructed by reduction mammoplasty (8/18), latissimus dorsi flap (6/18), local parenchymal flap (2/18) and thoracoepigastric flap (2/18). In the mastectomy group, 5/21 patients declined reconstruction. Of the remaining 16 patients, half elected to undergo immediate prosthetic reconstruction and half opted

for autologous reconstruction. The autologous reconstructions performed in the mastectomy group were latissimus dorsi flap (4/8), thoracoepigastric flap (3/8) and a combination of thoracoepigastric/LICAP flap (1/8). All the tumours in both the BCT and mastectomy groups had clear resection margins.

Discussion

BCT was feasible in approximately half of the patients in this case series. Breast conservation surgery presents a viable surgical alternative to mastectomy in patients with central breast tumours.

IDENTIFYING WOMEN AT RISK OF UNCERTAINTY AND POOR QUALITY OF LIFE WHEN UNDERGOING BREAST CANCER SURGERY: A SURVEY-BASED DESCRIPTIVE STUDY

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Background

Breast cancer is a leading cause of morbidity and mortality in South African women. In resource-limited settings emphasis for disease management is often concentrated on biological control and survival. However, understanding the full biopsychosocial experience of breast cancer is essential in improving access and patient uptake of care.

Aim

This study of women undergoing surgery for breast cancer Aims to determine the presence of uncertainty, poor quality of life (QoL) and their relationships to demographics and social support in an urban uninsured South African population.

Methods

A quantitative cross-sectional study was carried out in patients prior to breast surgery. Each participant completed the survey including validated questionnaires of uncertainty, QoL index, social support scale and demographics.

Results

Of the 59 women approached, 53 (89.9%) participated. Uncertainty was found in 86.8% (28.3% severe uncertainty) with all newly-diagnosed patients experiencing uncertainty. Patients above 45 years made up 80% of all those who were severely uncertain. Good social support did not affect levels of uncertainty. Conversely QoL was improved in women with at least primary education, and in women above 45 years. Pre-surgical chemotherapy was not associated with either uncertainty or QoL. Greatest uncertainty was reported about the roles of the treating staff and the presence of unanswered questions.

Discussion

Older women and those with education more commonly experienced uncertainty, but reported better QoL. The areas of uncertainty can help direct clinicians in limited resources settings to better direct services to help support patients, instituting simple measures of education and orientation.

THE LEVEL OF BREAST AND CERVICAL CANCER AWARENESS AMONG WOMEN IN A RURAL AREA OF SOUTH AFRICA

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Background

In South Africa breast and cervical cancer are the most predominant cancers amongst women, with mortality rates reaching surprising proportions. As a result of the continued rise of these conditions it is vital to determine these women's awareness of both, so as to determine the exact factors contributing to this rise. Whilst both urban and rural areas are afflicted, this study focused primarily on women in a rural area.

Aim

To determine and assess the knowledge and awareness of breast and cervical cancer amongst women living in rural areas.

Methods

This was a descriptive cross-sectional study conducted in a shopping mall located in the rural area of Bushbuckridge, Mpumalanga, South Africa. A total of 300 women of reproductive age were randomly identified and requested to fill out a study questionnaire assessing their level of breast and cervical cancer awareness.

Results

A total of 300 women participated in the study. The mean age of participants was 35.66 with a range of 13.53. Overall levels of knowledge about breast and cervical cancer in rural Bushbuckridge were found to be reduced with 66.89% and 74.49% of women who rated themselves with a poor understanding of breast and cervical cancer knowledge respectively. Among the participating women, those over the age of 40, with higher level of education were found to be more cognizant in terms of breast and cervical cancer awareness with a 30% ($p = 0.0923$) and 52% ($p < 0.001$) respectively. Their younger and less educated counterparts had a 21% ($p = 0.078$) and 32% ($p = 0.034$) awareness of breast and cervical cancer, respectively. The leading source of information for both breast and cervical cancer was healthcare facilities (67.11% and 63.5% respectively).

Discussion

This study highlights the lack of awareness and knowledge of breast and cervical cancer in women living in the rural area of Bushbuckridge, South Africa. There is also evidence showing that the older and more educated women have better knowledge than their younger and less educated counterparts, therefore there is a need for increased breast and cervical cancer education and awareness campaigns amongst women in rural South Africa. The Results further point to education and availability of health care services as pivotal determinants of health.

FACTORS INFLUENCING MORBIDITY RATES AFTER PANCREATIC STAB WOUNDS

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Background

Penetrating injuries of the pancreas may result in serious complications.

Aim

This study Aims to assess the factors influencing morbidity after stab wounds of the pancreas.

Methods

A retrospective univariate cohort analysis was done of all pancreatic stab wounds documented in a prospective dedicated departmental pancreatic injury database of 475 patients treated between 1982 and 2016.

Results

Eighty-seven (80 men) patients, median age 26 years (range 16–62) had stab wounds of the pancreas. Median RTS was 7.8 (range 2.0–7.8). Injuries involved head/uncinate process

(n = 16), neck (n = 2), body (n = 40) and tail (n = 29) of the pancreas. All 87 patients underwent a laparotomy. Sixty-eight patients had AAST grade I or II injuries and 19 had grade III, IV or V pancreatic injuries. Eight (10.3%) of 78 patients had an initial damage control operation. Seventy-four (85.1%) patients had drainage of the pancreas only, eleven had a distal pancreatectomy and two had a Whipple resection. Fourteen patients developed pancreatic complications, of which 8 were fistulae. Four (4.6%) patients died. Grade of pancreatic injury (AAST grade I-II vs grade III-V injuries; $p < 0.01$), presence of shock on admission ($p < 0.01$), need for a blood transfusion ($p < 0.01$) and an associated visceral vascular injury ($p < 0.001$) had a significant influence on the development of general complications.

Discussion

Although mortality was low after a pancreatic stab wound, morbidity was high. Increasing AAST grade of injury, shock on admission to hospital, need for blood transfusion and an associated vascular injury were significant factors related to morbidity.

ALTERED METABOLIC PATHWAYS IN CHRONIC PANCREATITIS AND PANCREATIC CANCER

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Background

Pancreatic ductal adenocarcinomas are aggressive cancers with poor survival. At present few biomarkers for this cancer are available, and generally these are poor diagnostic markers. Determining the spectrum of small molecules present in the blood and other biological fluids provides information on which metabolic pathways are active in disease processes.

Aim

To determine differences in small metabolites in serum samples from patients with chronic pancreatitis (CP) and pancreatic cancer (PAD), relative to metabolites from control patients (CG).

Methods

Patients with CP (n = 19) and PAD (n = 68) were recruited from the Hepatobiliary Unit at the Chris Hani Baragwanath Hospital. CG (n = 25), without these diseases were also recruited from associated surgical wards. Serum samples were measured using (1)H-nuclear magnetic resonance (NMR) spectroscopy and analysed using principal component analysis. Peak areas were normalised to determine differences relative to control patients for patients with chronic pancreatitis and pancreatic cancer.

Results

The essential branch chain amino acids, leucine (p = 0.044) and valine (p = 0.015) were decreased in PAD but unchanged in CP (p = 0.2 and p = 0.17 respectively), relative to the CG. Other amino acids were not altered. Relative to CG, production of the ketones, beta-hydroxybutyrate and acetoacetate, were not significantly altered in patients with either CP (63% and 51% respectively; p > 0.3) or PAD (130% and 150% respectively; p > 0.6). Glucose was unchanged in CP and PAD whereas the acid acetate, was raised in both (p < 0.05). The data also suggested altered lipid concentrations in PAD but not CP but the lipid implicated was not identified. There appeared to be little correlation between the metabolites and demographic parameters and biochemical measures.

Discussion

PAD patients appeared have little ability to retain essential branch chain amino acids and this may be associated with protein breakdown and cachexia in these patients. The altered ketones levels reflect differences in fatty acid metabolism and this finding is being investigated further.

RISK FACTORS ASSOCIATED WITH PANCREATIC CANCER AT TWO JOHANNESBURG ACADEMIC HOSPITALS BETWEEN 2013 AND 2015

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Background

Pancreatic ductal adenocarcinoma (PDAC) is a devastating diagnosis for any patient as it is associated with a high mortality rate, and has few therapeutic interventions that prolong survival as compared to other cancers. Frequent epidemiological reports on PDAC are available in the developed countries, but in South Africa there is paucity of epidemiological data of this aggressive cancer. Understanding risk factors will help to assess and develop relevant interventions. Knowing the potential factors associated with it will provide information for improved screening and management of potentially curable patients. Furthermore, early diagnosis may increase the survival of PDAC patients in all races and this study may increase awareness of this disease in the population.

Aim

To investigate and identify the risk factors of PDAC patients at two public academic hospitals in Johannesburg between June 2013 and December 2015.

Methods

This was a secondary unmatched case-control study to assess risk factors of PDAC at CHBAH and CMJAH Academic Hospitals. All participants were >18 years of age, 139 with PDAC and 139 without PDAC. Data exported from REDCap was analysed, using Stata 13. The exported data included patient demographics, social and medical history. Descriptive statistics used the chi square test and inferential statistics used unconditional multiple logistic regression. Unconditional logistic regression estimated the odds ratios (ORs) in the case control analyses. The likelihood ratio test with a p-value of < 0.10 was accepted to assimilate data fitting into the model.

Results

This study showed that the following categories, their odds ratio and 95% confidence interval were statistically significant at p-value < 0.10. The 20–29 age group had odds ratio (OR) of 0.11(0.11–1.00) p = 0.05. The 50–59 age group had OR 2.63(1.03–6.70) p = 0.042. The general worker had OR 1.79(0.93–3.45) p = 0.083. High white meat consumption had OR 0.18(0.04–0.86) p = 0.032. Low fish consumption had OR 2.17(1.06–4.45) p = 0.034. Low consumption of fried food had OR 0.48(0.23–1.00) p = 0.050 and high consumption of vegetables had OR 0.17(0.05–0.61) p = 0.007.

Discussion

The main risk factors associated with PDAC are 50–69 age group and longest employment as a general worker. Low consumption of fish is a risk factor based on our findings while on the other hand high consumption of fish has no statistical significance in cases and controls. High consumption of vegetables and white meat are protective against PDAC.

GENE AND PROTEIN EXPRESSION PROFILING OF PANCREATIC TUMOURS REVEAL NOVEL POTENTIAL BIOMARKER

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Background

Pancreatic cancer (PDAC) is a deadly type of cancer with almost an equal amount of new cases and deaths observed yearly. It accounts for about 7% of cancer-related deaths worldwide. In many multi-racial societies including South Africa, the black population has the highest incidence rate. Less than 5% of PDAC patients live up to 5 years. The lack of specific and sensitive diagnostic PDAC biomarkers is strongly responsible for this poor statistic. The discovery of differentially expressed genes and proteins associated with PDAC is crucial to elucidating this condition and may lead to biomarker finding and further understanding of the disease.

Aim

To identify novel diagnostic biomarkers for PDAC.

Methods

Tissue samples were obtained from Black South African PDAC patients during the Whipple procedure. Using focused arrays and RNA Sequencing, we have shown differentially expressed genes and proteins between tumour and normal tissue samples of PDAC patients in the quest for potential biomarker discovery. Furthermore, we utilized multiple bioinformatics tools, to identify potential PDAC biomarkers. Real-time PCR and ELISA were also employed to validate our novel potential PDAC biomarker.

Results

We have identified novel potential transcriptomic and proteomic biomarkers of pancreatic cancer. Our identified transcriptomic biomarker has a sensitivity and specificity of 100% and 80% respectively. Furthermore, we observed novel genetic variants and dysregulated pathways occurring during pancreatic carcinogenesis.

Discussion

This study has identified novel potential biomarkers which can help in the diagnosis of PDAC. Going forward, the identified novel potential biomarkers need to be further validated in a larger sample number using easily accessible samples like blood.

PATHWAY ANALYSIS OF DIFFERENTIALLY EXPRESSED GENES/PROTEINS IN PDAC PATIENTS

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Background

Pancreatic cancer (PDAC) is a devastating cancer. It accounts for about 7% of cancer related deaths worldwide. During PDAC, several genes are altered. These alterations consequently lead to the progression of PDAC. Analysis of these alterations in the context of signalling pathways help in understanding the disease.

Aim

To identify important pathways dysregulated during PDAC.

Methods

18 Tissue (9 tumour, 9 normal) samples were obtained from Black South African stage I PDAC patients during the Whipple procedure. Utilizing pathway-focused arrays, antibody arrays, and RNA Sequencing differentially expressed genes/proteins in tumour tissues were identified. Additionally, using several bioinformatic tools we have identified dysregulated pathways and biological processes in PDAC.

Results

We observed several upregulated pathways occurring in pancreatic carcinogenesis such as IGF/MAPK, Integrin, and *Ras* signalling pathways. Additionally, downregulated pathways were also observed including the MHC II antigen presentation pathway.

Conclusion

Information obtained from enriched signalling pathways help in further understanding the biology of PDAC. The dysregulation of these pathways aid in the induction and enhancement of PDAC. Thus, they might serve as potential targets for PDAC management and treatment.

OUTCOME OF LIVER RESECTION FOR CARCINOID NEUROENDOCRINE METASTASES

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Background

Gastrointestinal carcinoid tumours, despite their low malignant potential, frequently metastasize to the liver. While liver resection improves survival and provides symptomatic relief, multifocal bilobar disease complicates surgical management.

Aim

This study evaluated outcomes in patients with carcinoid liver metastases who underwent liver resection at Groote Schuur Hospital.

Methods

All patients with carcinoid liver secondaries managed by resection from 1990–2015 were identified from a prospective departmental database. Demographic data, operative management, morbidity using the Accordion classification and mortality were analysed. Survival was assessed using the Kaplan-Meier method.

Results

Seventeen patients (9 women, 8 men, median age 55 years, range 31–76) underwent resection. Median number of

liver secondaries treated was 3 (range 1–20). Ten patients had major anatomical liver resections. Three patients had 5 segments resected, seven had 4 resected, and seven had ≤ 2 resected. Each patient had all identifiable liver secondaries resected or ablated. Two also had intraoperative tumour ablation. Nine patients (53%) had a concurrent bowel resection and lymphadenectomy. Median operating time was 255 minutes (range 150–720). Median blood-loss was 800 ml (range 200–10,000). Five patients required intraoperative blood transfusion. Intermittent portal inflow occlusion (56.5 minutes median, range 20–150 minutes) was used in 8 patients. Median postoperative hospital stay was 9 days (range 2–28). Thirteen complications occurred in seven patients. Accordion grade 1 complications were $n = 3$ (ileus, wound sepsis, confusion), grade 2 $n = 4$ (delayed gastric emptying, pleural effusion, wound sepsis), grade 3 $n = 3$ (bile leak, intra-abdominal collection, atelectasis), grade 4 $n = 2$ (intra-operative bleeding) and grade 6 $n = 1$ (cardiac failure). One patient required reoperation for bleeding and a bile leak. One patient died of a myocardial infarction 36 hours postoperatively. Sixteen (94%) patients had symptomatic improvement. Five-year actuarial survival-rate was 91% (median follow-up 36 months, range 14–86 months).

Discussion

Our data show that liver resection can be safely performed for carcinoid secondaries with a good 5-year survival. However, a substantial number of patients require a major liver resection and are best treated at a multidisciplinary referral centre.

THE ROLE OF IL17-A IN THE SECOND HIT OF ACUTE PANCREATITIS

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Background

Acute pancreatitis is characterised by distinct clinical phases. An initial systemic inflammation response syndrome (SIRS) and occasional subsequent ‘second hit’ usually initiated by systemic sepsis. The pro-inflammatory T-helper 17 pathway has been shown to be an initiator of early SIRS in AP; however, to date, interleukin-17A has not been evaluated as a marker of the septic second hit in severe acute pancreatitis (SAP).

Aim

To evaluate IL-17A as a marker of the second hit in SAP.

Methods

Twenty-five (aged 22–78) with mild ($n = 12$), moderate ($n = 5$) and severe ($n = 8$) acute pancreatitis were enrolled. Peripheral blood samples were drawn on days 7, 9, 11 and 13 of illness for routine clinical markers as well as cytokine analysis. Flow cytometry was performed using a Th1/Th2/Th17 Cytokine Bead Array (BD Biosciences). Statistical analysis was performed using a Fisher’s exact test and ANOVA, with a $p =$ value of < 0.05 considered significant.

Results

The mean concentration of IL-17A (pg/ml) on days 7, 9, 11 and 13 of illness in the mild/moderate group were 18.1, 12.9, 11.9, 18.9 and in the severe group 14.4, 12.9, 18.9, 12.8. There was no statistical significance between the groups. IL-10 was significantly higher in severe acute pancreatitis on days 7, 9, 11 and 13, but IL-6 and IL-2 were only significantly elevated in severe acute pancreatitis on days 9, 11 and 13. No differences were noted between the groups for IL-4, TNF and IFN-gamma. WCC, CRP and PCT were all significantly higher in severe acute pancreatitis over the study days.

Discussion

The IL-17A concentration in the study population could not statistically be attributed as the cause of the second hit in acute pancreatitis. Further studies to confirm this are underway.

LIVER FUNCTION TESTS IN PREDICTING CBD STONES IN ACUTE BILIARY PANCREATITIS

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Background

Acute biliary pancreatitis is a significant cause of pancreatitis. The role and timing of endoscopic retrograde cholangiopancreatography in the setting of acute biliary pancreatitis is still controversial. Persistent choledocholithiasis in acute biliary pancreatitis occurs and establishing which patients require an endoscopic retrograde cholangiopancreatography based on liver function tests only can be challenging.

Aim

The purpose of this publication is to review the outcomes of endoscopic retrograde cholangiopancreatography performed in acute biliary pancreatitis in relation to abnormal liver function tests.

Methods

Retrospective analysis of the Chris Hani Baragwanath Academic Hospital’s ERCP database was performed. All ERCPs performed in patients with acute biliary pancreatitis were identified and analysed.

Results

A total of 2830 ERCPs were performed during the study period. In total 99 (3%) were performed for suspected choledocholithiasis in acute biliary pancreatitis with abnormal liver function tests. Thirty (30%) of the ERCPs confirmed choledocholithiasis while the remaining 69 (70%) yielded no choledocholithiasis. A significantly higher proportion of patients with choledocholithiasis required a needle knife sphincterotomy for deep biliary cannulation. The incidence of immediate complications, such as bleeding, false tract formation and perforation were comparable between the two groups. Two models were developed to determine specific cut-off values for conjugated bilirubin, ALP, GGT, AST and

ALT. The calculated cut-off values yielded poor correlation between sensitivity and specificity.

Discussion

Determining persistent choledocholithiasis in acute biliary pancreatitis based on liver function test alone is not ideal. Using conjugated bilirubin, ALP, GGT, AST and ALT to guide one to perform an ERCP in acute biliary pancreatitis can be misleading.

IS HIV STATUS RELEVANT IN ACUTE PANCREATITIS

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Introduction

HIV positivity and antiretroviral (ARV) treatment have been described as significant causes of acute pancreatitis prevalence and predictors of poor outcomes. Most data are from the late 1990s and early 2000s, prior to widespread roll out of ARVs and newer agents. This study assessed if there is still a significant difference between HIV positive (HIV+) and negative(HIV-) patients in acute pancreatitis in the presentation and outcomes of acute pancreatitis.

Methods

A retrospective review of a prospectively collected database of patient admission data. The data was collected by an interviewer-administered questionnaire. All patients presenting to Chris Hani Baragwanath Academic Hospital with acute pancreatitis were eligible for inclusion.

Results

Of 148 patients, 56 (37.8%) were HIV+ and 92 (62.2%) HIV-. Median age at presentation was 40.5 (18–77); HIV+ 37 (18–61), HIV- 41.5 (19–77)($p = 0.14$). Men comprised the majority (58.1%); HIV+ and HIV- (53.6% vs. 60.9%), ($p = 0.40$). Median BMI on presentation was 23.6 (16.4–41.4), no significant difference between HIV+ (23.3 [16.4–38.4]) and HIV-(24.3 [16.7–41.4]) ($p = 0.65$). Smoking was equal, HIV+ (51.1%) and HIV- (57.1%) ($p = 0.59$). Alcohol use was not significantly different, HIV+ (88.2%), HIV- (77.3%) ($p = 0.20$).

The predominant aetiology was alcohol, HIV+ (63.6%) and HIV- (58.2%); followed by gallstones, HIV+ (23.6%) and HIV- (27.5%), ($p = 0.26$). Contrary to prior studies ARVs were not significant (3.6%).

The revised Atlanta severity score was severe in 45.3%, HIV+ (46.4%) and HIV- (44.6%) ($p = 0.8$). The median admission CRP was 49 (< 1 –447) in HIV+ and 27 (< 1 –406) in HIV- ($p = 0.44$). Length of stay did not differ significantly, all patients stayed a median of 9 days (0–731), HIV+ 6 days (1–601) and HIV- 12.5 days (0–731), ($p = 0.39$).

CD4 counts were available on 36 of the HIV+ patients and viral load on 19. The range of CD4 levels was 3 to 911

(median 259), and viral loads 0–3 160 000 (median 48). 37 patients were on ARVs and their CD4 ranged 14–681, those not on treatment ranged 3–911.

Discussion

In the present era of ARV regimens and universal roll-out, there is no significant difference between HIV+ and HIV- patients in the presentation, aetiology and outcomes of acute pancreatitis.

INCIDENTAL GALLBLADDER CANCER - THE FIRST REPORT FROM SUB-SAHARAN AFRICA

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Background

Incidental gallbladder cancer (iGBC) is found in 0.3-1.5% of cholecystectomy specimens. GBC is uncommon with significant variation amongst geographical regions and ethnic groups. Less than 100 GBC's have been reported in sub Saharan Africa, hence the need for this national audit in South Africa.

Methods

National data was obtained from the South African NHLS for 2003–2015. 34 294 cholecystectomy specimens were included of which 239 were GBCs; 135 were iGBC.

Results

iGBC incidence was 0.42% with a male:female ratio of 1:4.6. Mean age was 62.2 (range 20-88; male 64.83 and female 61.67). Indications for surgery were acute cholecystitis in 49% & biliary colic in 44%. GBC T stages were Tis 12.6%, T1a 4.4%, T1b 8.8%, T2 37.8%, T3 13.3% and Tx 22%. Lymph nodes were found in 10 patients, of which 5 were N1. R1 resection occurred in 32.6% of the cohort. Univariate analysis found female sex, chronic inflammation and the presence of dysplasia to be associated with iGBC. No association was found with surgical indication, presence of gallstones or other histological findings (polyps, xanthogranulomatous inflammation, calcification & RAS). Only female gender was associated with iGBCa after multivariate analysis.

Discussion

This large series demonstrates a similar incidence of iGBC in an African cohort to those reported from more developed nations, with female gender being the most significant risk factor. Delay in presentation may explain the more advanced stage (T2 and T3) and a resultant high rate of R1 resection.

NEEDLE KNIFE SPHINCTEROTOMY - THE CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL EXPERIENCE

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Background

Deep biliary cannulation is essential in performing a therapeutic ERCP. Cannulation can be enhanced through the utilization of a pre-cut by means of a needle knife sphincterotomy.

Aim

This study is to assess the application of the needle knife sphincterotomy in a cohort of patients, both at initial ERCP and repeat ERCP.

Methods

Retrospective analysis of the Chris Hani Baragwanath

Academic Hospital's ERCP database was performed. All ERCPs performed with the aid of a needle knife were identified and analysed for successful and unsuccessful deep biliary cannulation.

Results

2830 ERCPs were performed during the study period. 369 (13%) required needle knife sphincterotomies and successful deep biliary cannulation was achieved in 229 (62%) of these patients. Repeat ERCPs were performed on 125 (34%) patients. 61 (49%) of the repeat ERCPs were performed because of previously failed cannulation. 34 (56%) of these repeat ERCPs resulted in successful deep biliary cannulation at re-attempt. 99% of successful cannulations at repeat ERCP had had a needle knife sphincterotomy at the first ERCP.

Discussion

Needle knife sphincterotomy improves deep biliary cannulation at initial ERCP and subsequent ERCPs with low incidences of complications.

GASTROINTESTINAL

PREVALENCE OF ADENOCARCINOMA OF THE OESOPHAGUS IN TWO TEACHING HOSPITALS IN GAUTENG PROVINCE, SOUTH AFRICA

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Background

Oesophageal carcinoma is the eighth most common cancer worldwide and sixth most common cause of cancer related mortality. The incidence of oesophageal adenocarcinoma has rapidly risen over the past decades; however squamous cell carcinoma of the oesophagus remains the most common worldwide. The prevalence of oesophageal carcinoma is high in South Africa and contributes significantly to the burden of disease. The prevalence of squamous cell carcinoma is greater than that of adenocarcinoma of the oesophagus but no recent local data is available. This study is Aimed at evaluating the cases of oesophageal carcinoma currently presenting to our institutions.

Aim

To a) examine the demography and prevalence of adenocarcinoma of the oesophagus in patients presenting to academic hospitals of the University of Witwatersrand; b) compare the number of patients with adenocarcinoma of the oesophagus (ACC) and squamous cell carcinoma.

Methods

This was a retrospective study of all the cases of oesophageal malignancy recorded on the NHLS database at CMJAH and CHBAH from 01 January 2001–31 December 2013. Demographic variables including age, gender and population group where noted were recorded.

Results

The prevalence of oesophageal carcinoma in our two teaching hospitals was on a downward trend. There was a significant decrease noted in the SCC subtype. The AC subtype prevalence was on an upward trend. The change of prevalence of AC was determined using chi square analysis and showed a strong level of significance with $p < 0.01$.

Discussion

This study shows trends in the prevalence of oesophageal carcinoma in keeping with that of western populations. Further reduction in the incidence of oesophageal carcinoma in South Africa will necessitate education and screening programs similar to those in western populations.

AN EVALUATION OF EPIDEMIOLOGICAL DIFFERENCES IN COLORECTAL CANCER PATIENTS OVER AND UNDER THE AGE OF 50 PRESENTING TO ACADEMIC CENTERS IN JOHANNESBURG

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Background

As in other developing countries, the nations of Sub-Saharan Africa have seen an increase in the incidence of colorectal cancer. Repeatedly, the indigenous populations have shown a skewing of incidence in favour of patients below the age of 50. As part of a larger study, and through funding from the Medical research Council of South Africa, the Wits MRC Oncology group has set out to identify the epidemiological characteristics and disease progression of patients under the age of 50 presenting with colorectal cancer.

Aim

Our study group has initiated a broad prospective longitudinal study of patients with colorectal cancer presenting to academic hospitals affiliated to the Witwatersrand University. From this recently initiated database, 185 patients have been assessed. Epidemiological differences between patients under 50 and those over 50 have been evaluated.

Methods

Data was collected from the clinical experience of patients with colorectal cancer seen in four Wits academic hospitals (CMJAH, CHBH, WDGMC and Edenvale Hospital), through collection of clinical notes, interviews with patients and clinicians. This was achieved through a research nurse and the information was put into a REDCap database for further analysis.

Results

On assessment of the data, there was a weak association between those below the age of 50 and black ethnicity and a weak association between those under 50 and male gender. In assessment of the other variables, similarly, association was demonstrated between those over the age of 50 and an abnormal waist circumference. A trend toward a greater BMI amongst the over 50 and lower BMI amongst the under 50 years of age at presentation also appears to be emerging.

Discussion

The difference in risk profiling and epidemiology of young verses old patients may indicate a binary predisposition to colorectal cancer. These Results, however, need to be interpreted with caution, numbers accrued in this study are small and the assessments as a result are underpowered.

LOWER GI

PPH: WHERE DID IT GO WRONG?

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Background

The stapled haemorrhoidopexy has been used for 20 years. A rare but serious complication is stenosis, occurring in 1–2% of cases. The mechanism for this stenosis has never been described.

Aim

To demonstrate the origin of the stenosis by deliberately misplacing the purse-string suture or anvil prior to firing the stapler.

Methods

The cadavers of five pigs previously euthanised underwent the procedure for prolapse and haemorrhoids (PPH). Four deliberate mistakes were tested: 1) doubling the circular suture back on itself for part of the circumference at the same depth; 2) placing the circular suture at varying depths; 3) placing one bite of the suture deeper and on the opposite wall of the rectum; and 4) firing the stapler with the anvil positioned proximal to the circular suture but with the suture secured tightly to the shaft of the device.

Results

Placing the circular suture and doubling the stitch back on itself did not cause stenosis. Placing the circular suture at varying depths resulted in a fold in the rectal mucosa. Placing one bite of the suture deeper and opposite resulted in a large flap of rectal mucosa folded into the staple line. Firing of the stapler outside of the suture produced a complete occlusion of the rectal lumen.

Discussion

We have demonstrated reproducible mistakes that consistently result in one of the most serious complications, viz. complete occlusion, and propose that healing of the loose flap may contribute to subsequent partial stenosis.

SURVEILLANCE COLONOSCOPY FOR LYNCH SYNDROME IN THE NORTHERN CAPE: DOES DIRECT CONTACT IMPROVE COMPLIANCE?

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Background

The Annual Northern Cape Colonoscopy Outreach program provides surveillance colonoscopy to known Lynch Syndrome individuals in the Northern Cape Province of South Africa. Annual endoscopy is preceded by a preparation visit Aimed

at improving attendance by directly imparting information to individuals requiring surveillance. During the preparation trip an attempt is made to reach all individuals scheduled, however due to the vastness of the Northern Cape inevitably every year some areas are not visited. Over the past few years fewer than 25% of participants obtained 100% adherence.

Aim

The primary objective of this study was to determine if direct interaction with patients prior to surveillance colonoscopy significantly impacts attendance.

Methods

A randomised controlled crossover trial was developed to take place over two years of endoscopic surveillance. Included participants were randomised to a control group (A) that was not seen prior to colonoscopy, and a test group (B) that was visited by a team from Cape Town preceding surveillance. In the second year of study, the intervention on these groups was reversed. Compliance and understanding of information given was measured in terms of attendance at surveillance in September of each year of study.

Results

78 participants (Group A = 38; Group B = 40) were enrolled. In September 2014, thirty-six (46.2%) participants presented, 19 (50%) from the control group (Group A) and 17 (42.5%) from Group B. In 2015, there was 53% (n = 41) attendance; 21 (55%) from directly contacted Group A, and 20 (50%) from Group B. Direct interaction was found not to significantly impact attendance (p-value = 0.853). Improved attendance was noted in individuals with prior compliance to surveillance (p-value = 0.001).

Discussion

Direct interaction with Lynch Syndrome individuals prior to annual surveillance colonoscopy has not shown to positively impact attendance. Interaction and counselling should focus on individuals identified to be defaulting surveillance.

UNUSUAL HISTOPATHOLOGIES OF THE APPENDIX

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Background

Acute appendicitis is a very common surgical emergency. Most commonly, the histopathological findings of the appendix reflect the normal pathophysiology of appendicitis that starts with the luminal obstruction and culminates in florid suppurative, gangrenous or perforated appendix. The treatment is usually straightforward and consists of surgery and antibiotics. Uncommonly, unusual pathologies are identified and require specific management. The literature is scanty about the unusual findings. In a worldwide review of 128 articles, Sami Akbulut has established 1.7% incidence of unusual histopathology led by *Enterobius vermicularis*

(28.4%) followed by carcinoid (21.9%) and schistosomiasis (12.7%).

Aim

To establish the incidence and type of unusual histopathologies of the appendix in three academic hospitals (Chris Hani Baragwanath Academic Hospital, Charlotte Maxeke Johannesburg Academic Hospital and Helen Joseph Hospital) of Johannesburg, South Africa.

Methods

A retrospective review of histopathological reports of appendix specimens obtained during appendectomies done between January 2012 and December 2014 in the three academic hospitals of Johannesburg (CHBAH, CMJAH, HJH). All specimens were examined by the National Health Laboratory Services (NHLS).

Results

A total of 2408 histopathologies were obtained from the national health laboratory system. 164 specimens were excluded because they were part of colonic resection for conditions unrelated to the appendicitis. From the 2244 specimens analysed, 8.1%, 52.7% and 30.1% were due to normal appendix, acute appendicitis and complicated appendicitis respectively, and the incidence of unusual histopathological findings was 5.3% (119/2244). Of the 2244 specimens analysed the mean age was 25.6 years (2–88yrs) and the gender distribution was 61.9 % males and 38.1% females. The most common unusual causes were parasites (37%) led by schistosomiasis (24.3%), followed by neoplasm (20%) and fibrous obliteration (14.2%).

Discussion

Although uncommon (5.3%), the unusual causes of appendicitis may result in an adverse patient outcome and/or require specific treatment that may be overlooked if histopathology reports are not checked routinely.

OUTCOME OF APPENDICITIS IN THE ELDERLY IN UNIVERSITAS AND PELONOMI HOSPITALS

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Background

In the elderly population, appendicitis still poses a high mortality and morbidity. Morbidity rates of 28–60% and mortality rates of 5–10% have been reported. The mortality rate is even higher in the presence of perforated appendicitis. Various factors have been pointed out to contribute to this trend.

Aim

Our Aim was to establish the mortality and morbidity rates of elderly patients who had appendectomies in our institutions over the past ten years, what the contributing factors were, how these compare to other institutions and how it could be improved on.

Methods

A retrospective analytical study on all patients over the age of 60 years who had appendectomies at Universitas or Pelonomi

Hospital between 01 January 2004 and 31 December 2014 was done. Data of all appendectomy specimens received at Anatomical Pathology was collected and the hospital numbers were retrieved. The patients' clinical records were then scrutinised and the data transferred to an Excel spread sheet. The data was analysed using the Fisher two-tailed test and a p-value of < 0.05 was considered significant. Ethic clearance was obtained from the Health Research Ethics Committee of the Faculty of Health Sciences (ECUFS 57/2015).

Results

Sixty-eight elderly patients aged 60 years and older were identified over a period of 10 years. Only 47 patients met the inclusion criteria. Mean age was 67.2 years with male:female ratio of 1:1.2. The average delay to presentation was 3 days. The correct diagnosis was made in 26 (53%) patients. Preoperative imaging was done in four patients (8.5%). Forty-two patients (89.4%) had a simple appendectomy, while 5 (10.6%) had a right-hemicolectomy. Average length of stay (LOS) was six days, while the LOS for perforated appendicitis was 17 days. Ten patients died in hospital, resulting in an in-hospital mortality rate of 21%. Eight of these had perforated appendicitis. Twenty-three patients (51.1%) had perforation, 22 (48.9%) did not, while in two this finding was not recorded. Twenty-five patients (53.2%) had complications. Re-look laparotomies happened in 12 (25.5%) patients.

Discussion

Morbidity and mortality are indeed still high in the elderly population. The incidence of re-look laparotomy is high in our institution and this is associated with a higher mortality. If the LOS is corrected, our figures are on par with other institutions. Late presentation and wrong initial diagnosis remain a stumbling block in the management of the elderly patient with appendicitis.

ILEOSIGMOID KNOTTING: A ZIMBABWEAN CASE SERIES

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Background

Ileosigmoid knotting is a rare cause of intestinal obstruction with a rapidly progressive course, for which expedient surgical intervention is required to avoid mortality.

Aim

To determine the (i) demographic characteristics, (ii) presenting features, (iii) preoperative diagnostic precision, (iv) management patterns, and (v) morbidity and mortality associated with the management of ileosigmoid knotting at Parirenyatwa Group of Hospitals (PGH).

Methods

A combined retrospective and prospective analysis was performed on 16 patients operated on at PGH with an operative diagnosis of ileosigmoid knotting between February 2011 and April 2016. Data inclusive of demographics, time to presentation and surgery, preoperative diagnostic accuracy, incidence of septic shock and mortality was collected.

Results

The average age was 37.1 years (range 20–59 years) with a 4.3:1 male to female ratio. Two of the three females were pregnant. Thirteen patients (81.3%) experienced acute onset abdominal pain while asleep. The mean duration of symptoms prior to arrival at PGH was 10.8 hours (range 1–23 hours). At admission, four patients (25%) were hypotensive (three more developing hypotension by the time of anaesthetic induction). Nine patients (56%) had leukocytosis and nine patients (56%) had deranged biochemical parameters. The most common preoperative diagnosis was sigmoid volvulus (50%), with no patients having a pre-operative diagnosis of ileosigmoid knotting. All patients had small bowel and sigmoid colon resection and Hartmann's procedure performed due to the presence of gangrene. Six patients (40%) required inotropic support for septic shock, while 57% of patients required transfusion. There was one perioperative death.

Discussion

The diagnosis of ileosigmoid knotting needs to be considered in the young male or pregnant female patient with acute nocturnal onset abdominal pain and a rapidly deteriorating clinical course, and with radiological features suggestive of sigmoid volvulus.

A RETROSPECTIVE ANALYSIS OF ACUTE APPENDICITIS, RUPTURED APPENDICITIS AND THE LEVEL OF LEUKOCYTOSIS IN PAEDIATRIC SURGICAL PATIENTS OF NELSON MANDELA CENTRAL HOSPITAL

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Background

Appendectomy is the most commonly performed operation worldwide. The diagnosis is predominantly based on clinical findings. Some patients will clinically be unclear if ruptured or acute inflamed appendicitis; the level of white cell count has been used as the predictor for ruptured appendicitis.

Aim

To determine if the level of total leukocyte count is a predictor for a ruptured appendicitis in paediatric patients age range between 3 to 12 years who are admitted at Nelson Mandela Central Hospital.

Methods

This was a retrospective chart review of paediatric surgical patients admitted at Nelson Mandela Central Hospital, Mthatha South Africa.

Results

A total of 214 patients with a diagnosis of acute appendicitis. Overall, the ruptured appendicitis was 62% and 38% were inflamed appendicitis. Nature of the acute appendicitis: White cell count, Inflamed, Ruptured, Total p-value <9.9 21 30 51 0.075, 10-14.9 28 54 82 0.0, 15-19.9 17 29 46 0.012, 20-29.9 5 26 31 0.0 >30 0 4 4.

Discussion

This study has demonstrated that in patients who are diagnosed with acute appendicitis clinically, the normal white cell count does not necessarily rule out ruptured acute appendicitis. But the risks of ruptured acute appendicitis increase with the increase level of white cell count.

COLORECTAL CANCER: IS THERE AN ASSOCIATION BETWEEN HIV INFECTION AND THE CLINICOPATHOLOGICAL PICTURE?

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Background

The link between colorectal cancer (CRC) and HIV has not been extensively studied.

Aim

This study Aims to establish the existence of a link between colorectal cancer and HIV.

Methods

Study setting: Colorectal unit at a tertiary institution. Study population: HIV negative and positive patients with colorectal cancer over 12 years (2005-2016). Study design: This is an analysis of prospectively collected data from a colorectal cancer database archived in the Gastrointestinal Cancer Research Centre, University of KwaZulu-Natal. Demographic details, HIV status, anatomical site, stage, treatment and follow-up were documented. Data was entered into Microsoft Excel® and analysed. The study endpoints were clinicopathological pattern, disease distribution, staging and treatment outcomes.

Results

Voluntary counselling and testing were performed on 381 out of 1543 CRC. Three hundred and eight patients [M:F 1.6:1] tested negative and 73 [M:F 1:2] tested positive. Mean age was 44.6 + 13.7 and 55 + 14.9 years among HIV positive and negative patients respectively (p < 0.001). Proximal: distal colon ratio was 1.3:1 among HIV positive patients and 1:1.2 for HIV negative patients. Rectal disease occurred with equal frequency in both groups. Stage IV disease occurred 51% and 40% in HIV positive and negative patients respectively. Resection rate was 38% and 56% for HIV positive and HIV negative patients respectively. Follow-up was 5.9 + 4.5 months for HIV positive and 17 + 15.6 months for HIV negative patients. Thirty-one patients (42.5%) have been confirmed dead in HIV positive, and 92 (39%) among HIV negative. Recurrence rate was 1% and 6% for HIV positive and HIV negative patients respectively.

Discussion

HIV positive patients tend to present at a younger age with more proximal disease, at an advanced stage. Resection rate was lower among HIV positive individuals. Follow-up was shorter for HIV positive patients and recurrence rate was higher for HIV negative patients. There were more deaths in the HIV positive group during follow-up.

COLORECTAL CANCER IN A SOUTH AFRICA URBAN SETTING - A PRELIMINARY ANALYSIS

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Background

Colorectal cancer (CRC) is the second most common cancer in the world, with an estimated incidence in South Africa of 4–5% of all cancers. Studies show that whites account for the majority of South African patients but blacks for the majority of patients under the age of 50.

Aim

This study describes a population of CRC patients in Johannesburg, South Africa.

Methods

This was a preliminary analysis of the first 113 patients enrolled in a prospective longitudinal study. All CRC patients presenting to the teaching hospitals of the Department of Surgery, University of the Witwatersrand were eligible for inclusion. Data was collected by an interviewer-administered questionnaire and entered into the CRC database. Statistical analysis was performed using SAS version 9.4 for Windows.

Results

Patients presented to the three major centres in equal proportions with 68.2% in the public sector and 31.9% in the private sector. The mean age at presentation was 56 years (range 19–84, SD = 13.8), while 53.1% of the patients were male and 56.5% were black African. The mean age at presentation for black patients (53.7 years, range 19–78, SD = 14.3) was significantly younger than for white patients (63.4 years, range 43–84, SD = 12.6) ($p = 0.0017$). 83.2% of patients had at least some high school education and the majority (56.6%) lived in their own homes with access to indoor running water (92%) and sanitation (96.5%). All patients had access to electricity. 49.0% reported a family history of cancer, with mother (35%), sibling (33%), and father (25%) most frequently affected. The most common cancer in relatives was CRC (25%). There was a history of smoking in 36.7% of patients. BMI was normal in 45.7% of patients, while 44.8% were overweight. The three most common presenting complaints were weight loss (68.1%), per rectal bleeding (61.1%) and constipation (61.1%). There was no prior GIT diagnosis in 70.9% ($n = 110$). The most common finding on clinical examination was anaemia (20.0%). The majority of tumours were located in the rectum (49.1%), then the left (29.2%) and right colon (16.8%).

Discussion

The major findings were a tendency to younger age at presentation in black South Africans, and a predominance of tumours in the left colon and rectum. This is in line with previously published data showing a difference in age at

presentation and site of tumour according to ethnicity. Risk factors such as smoking and obesity remain noteworthy even in a low-middle income country.

LAPAROSCOPIC LAVAGE VERSUS SUCTION ONLY IN COMPLICATED ACUTE APPENDICITIS: A PROSPECTIVE RANDOMISED CONTROL STUDY

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Background

The role of laparoscopy in complicated appendicitis is increasing. It is unclear in the adult population whether lavage of the pus versus suction only impacts in decreasing postoperative collections. In children there appears to be no difference whether the pus is lavaged or suctioned only. This study will be the first of its kind in the adult population.

Aim

To determine if lavage versus suction only in complicated appendicitis during laparoscopic surgery influences postoperative complications.

Methods

A prospective single blinded randomised control trial was conducted. Ethics clearance was obtained from the review board. Registered on research registry UIN 1718. Patients with suspected acute appendicitis were consented to be enrolled in the study. Those found to have complicated appendicitis (perforation, localised pus or four quadrant pus) at laparoscopy were randomised according to computer generated allotment to either lavage or suction only. Patients who did not have the appendix removed or who were converted to laparotomy were excluded. Lavage consisted of a strict protocol of three litres of lavage with normal saline. Operative time was documented. All patients had an 8 mm pencil drain placed. Postoperatively a minimum of five days of intravenous Coamoxiclav. Complications (relook, percutaneous drain), hospital stay and return of bowel function were recorded.

Results

A total of 43 patients were assessed of which 10 were excluded – seven were converted to laparotomies. Also, three had abscesses but appendix was not removed. The remaining 33 patients were analysed. The mean age was 26 years (14–74). Fifteen (45%) patients were lavaged and 18 (55%) were suctioned. Four quadrant pus was present in 4 (26%) of the lavage group versus in 6 (33%) of suction group. Complications developed in seven patients (46.7%) who were lavaged compared to five patients (27.8%) who received suction only. The absolute risk increase is 20% with lavage giving a number needed to harm of 5. The difference did not reach significance due to sample size ($p = 0.301$). Operative time was longer in the lavage group by 30 minutes ($p = 0.086$). If a complication developed then the hospital stay was significantly prolonged 13.5 days versus 5 days ($p < 0.001$). The study was stopped by the ethics review board due to the higher rate of complications in the lavage group.

Discussion

This pilot study of lavage versus suction only in complicated appendicitis revealed a higher rate of complications in those randomised to lavage. There was also a trend toward longer operating time in those who were lavaged. If a patient develops a complication, then the hospital stay was significantly prolonged.

ABDOMINOPERINEAL RESECTION IN THE PRONE POSITION: EARLY OUTCOMES AT A TERTIARY INSTITUTION IN THE WESTERN CAPE, SOUTH AFRICA

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Background

Abdominoperineal resection (APR) in the prone position is a new technique in the developing world, where colorectal cancer incidence is rising fast and the patient population is different from those in the developed world. Literature is lacking on the outcomes of this technique under these conditions.

Aim

Analysis of early outcomes after prone abdominoperineal resection for rectal cancer at a tertiary institution in the Western Cape, South Africa.

Methods

All patients who underwent APR in the prone position for rectal adenocarcinoma from February 2011 to February 2017 were reviewed. Main endpoints were stage at presentation, neoadjuvant treatment, circumferential resection margin involvement, perineal wound complications, length of intensive care unit (ICU) stay and days discharged after surgery.

Results

Fifty-four patients were included in the study. The average age of patients was 57 years (range 29–79yrs). Neoadjuvant (NA) chemoradiation was given in 54% while 14% of patients only received NA chemotherapy and 10% short course neoadjuvant radiotherapy. The average stage at presentation for rectal cancer was stage 3B. The circumferential resection margin (CRM) was involved in 14.8% (8/54) of patients. Perineal wound infection was identified in 25% (14/54) of patients and perineal wound dehiscence in 14%. Average length of ICU stay was 4.9 days and patients were discharged on average 10.7 days post operatively.

Discussion

Patients in the developing world present with more advanced stage rectal cancer. Complete resection rates for rectal cancer after APR in the prone position compare to those achieved in developed countries. A high perineal wound complication rate was seen in this series. The high percentage of patients with locally advanced disease necessitating neoadjuvant radiotherapy possibly contributed towards this finding.

THE HISTOPATHOLOGICAL FINDINGS OF MACROSCOPICALLY NORMAL APPENDIXES REMOVED AT LAPAROSCOPY AT DR. GEORGE MUKHARI ACADEMIC HOSPITAL

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Background

The question of whether or not to remove a macroscopically normal appendix at surgery has long been debated among surgeons. During the open surgery era, when a ‘McBurney’ incision was made, the appendix was routinely removed even if it looked macroscopically normal to remove future diagnostic uncertainties. In the modern era, the laparoscopic approach is now favoured, and the question of whether or not a macroscopically normal appendix should be removed is again debated.

Aim

To report on the histopathological findings of the macroscopically normal looking appendix found at laparoscopy and to determine if the removal of the normal appendix in the absence of other intra-abdominal pathology is justified.

Methods

A retrospective, descriptive study of the histopathological findings of macroscopically normal looking appendix removed during laparoscopy between July 2015 and December 2016.

Results

During the study period a total of twenty seven macroscopically normal appendixes were removed laparoscopically. All showed histological pathology. The most common histological feature was acute appendicitis in 17 cases (63%). In 8 cases (29%) there was lymphoid hyperplasia only. Other pathologies noted included parasitic infestation in one patient and obstructed lumen in 2 patients.

Discussion

Laparoscopic appendectomy is justifiable in the setting of a macroscopically normal looking appendix and no other demonstrable pathology to account for patients’ symptoms.

TRAUMA

THE USE OF LAPAROSCOPY IN MANAGING PENETRATING THORACOABDOMINAL INJURIES IN AFRICA: 83 CASES REVIEWED

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Background

The use of laparoscopy in managing haemodynamically stable patients with penetrating thoracoabdominal injuries in developed countries is widely practised, but in Africa the use of laparoscopy is still in its infancy stage.

Aim

Review a single centre experience in using laparoscopy in Africa for management of patients with both isolated diaphragmatic injuries as well as diaphragmatic injuries associated with intra-abdominal injuries requiring intervention.

Methods

A retrospective analysis of prospectively collected data of patients presenting with penetrating thoracoabdominal injuries was done. All patients offered laparoscopic exploration and repair from January 2012 to December 2015 at Dr George Mukhari Academic Hospital were analysed. Means (\pm SD) were presented for continuous variables and frequencies (%) were presented for categorical variables. All analyses were performed using SAS version 9.3 (SAS Institute, Cary, NC).

Results

A total of 83 stable patients with penetrating thoracoabdominal injuries managed with laparoscopy met the inclusion criteria and were included in the study. The Injury Severity Score ranged from 8 to 24, with a median of 18. The incidence of diaphragmatic injuries was 54%. The majority (46.8%) of patients had Grade 3 (2–10 cm defect) diaphragmatic injury. Associated intra-abdominal injuries requiring intervention were encountered in 28 (62%) patients. At least 93.3% of the patients were treated exclusively with laparoscopy. The morbidity was encountered in 7(16%) patients; the most common cause was a clotted haemothorax Clavien-Dindo III-a but only one patient required a decortication. There was one non-procedure related mortality.

Discussion

A success rate of 93% in using laparoscopy exclusively was documented, with an overall 82% uneventful outcome. The positive outcomes found in this study when laparoscopy was used in stable patients with thoracoabdominal injuries support similar work done in other trauma centres. However, in addition this study seems to suggest that the presence of peritonitis in stable patients is not a contra-indication to laparoscopy and that thoracoscopy may be useful especially in right side diaphragmatic injury where the liver precludes adequate visualization of the entire diaphragm and to thoroughly clean the chest cavity and prevent future complication such as residual clotted haemothorax.

THE ROLE OF LAPAROSCOPY IN BLUNT ABDOMINAL TRAUMA: DIAGNOSTIC, THERAPEUTIC OR BOTH?

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Background

The use of laparoscopy in blunt abdominal trauma is gaining popularity as a useful diagnostic tool to avoid unnecessary laparotomies where there is diagnostic dilemma. But the feasibility of using laparoscopy for therapeutic intervention in these patients has been debated. Even though recent case reports seem to suggest that these patients can be managed using laparoscopy, the practice is not yet widely adopted.

Aim

The purpose of this descriptive analytical study was to describe the role of laparoscopy in stable blunt abdominal trauma patients.

Methods

A retrospective analysis of a prospectively collected data was done. All adult patients who presented with abdominal trauma and were offered laparoscopic surgery at Dr George Mukhari Academic Hospital (DGMAH) from 2012 to 2015 were reviewed. Data was retrieved from our departmental database and analysed using descriptive statistics.

Results

A total of 318 patients were reviewed and 35 patients had blunt abdominal trauma and were included in the study. All the patients were offered laparoscopy. The median age was 30, with 91% of our patients males. The highest injury severity score calculated was 38. At least 77% of the patients were managed using laparoscopy. This includes 43% who had both diagnostic and therapeutic intervention and 34% who had only diagnostic laparoscopy. Eight patients were converted to open surgery mainly due to active bleeding and complex injuries. We did not have any non-therapeutic laparotomies. There was no documented procedure-related morbidity and mortality.

Discussion

The positive outcomes seen from the study suggest that laparoscopy can be safe and feasible in both diagnostic and therapeutic interventions in carefully selected blunt abdominal trauma patients. A conversion to open surgery should not be regarded as a failure but rather as a sign of mature and sound clinical judgement acknowledging the limitations of laparoscopy and/or the surgeon.

THE USE OF COMPUTED TOMOGRAPHIC ANGIOGRAPHY IN THE EVALUATION OF UPPER DIGESTIVE TRACT INJURIES IN PENETRATING NECK TRAUMA

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Background

Patients who present with penetrating neck injuries undergo both a computed tomographic angiogram (CTA) of the neck

to diagnose vascular injuries and a contrasted swallow to diagnose aerodigestive tract injuries. In a resource constrained setting this algorithm is questionable.

Aim

We performed an audit to assess whether single modality imaging with CT angiography would be sufficient to also diagnose upper digestive tract injuries.

Methods

A chart review was performed of all patients who presented to Tygerberg Hospital's trauma unit with penetrating neck injury between 1 January 2013 and 1 January 2016. All unstable patients taken directly to theatre were excluded. The haemodynamically stable patients underwent both a CTA and contrasted swallow. All the CTAs were performed prior to contrast swallow.

Results

Of 906 patients, 825 (91%) had stab and 81 (9%) gunshot wounds. Thirty-three (3.6%) patients were diagnosed with upper digestive tract injuries on contrasted swallow. 24 patients had pharyngeal injuries and 9 patients had oesophageal injuries. CTA was suspicious of injury in 16 patients and diagnostic of injury in 4 patients. In 12 CTA scans performed there was no mention of upper digestive tract evaluation. One CTA was falsely negative for injury when compared to contrast swallow.

Discussion

CTA reporting does not consistently evaluate the upper digestive tract for injuries. This might be due to reliance on contrasted swallows for diagnosis. There needs to be implementation of standardised reporting on the upper digestive tract when evaluating CTAs for penetrating neck injuries. Further evaluation of the diagnostic accuracy of CTA is needed before contrasted swallows can be omitted in the absence of upper digestive tract injury suggested by CTA.

ACCESS TO TERTIARY TRAUMA CARE: CHALLENGES WITHIN A DEVELOPING HEALTH CARE SYSTEM

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Background

Trauma is a leading cause of mortality the world over, with an increasing impact in low and middle income countries. One of the key challenges in tackling the morbidity and mortality associated with the growing trauma epidemic includes the ability to provide timely access to appropriate trauma care.

Aim

To define the logistical and temporal challenges associated with accessing tertiary trauma care in a developing country.

Methods

A prospective cross-sectional study of 385 consecutive trauma patients admitted at Parirenyatwa Group of Hospitals (PGH) following injury. Data inclusive of demographics, Methods of transfer, time to care and referral patterns was analysed.

Results

Over half of all casualties, (54%) were referrals from satellite hospitals. One hundred and twenty-one casualties (31.68%) received pre-hospital care by medical personnel. The most common means of transfer of casualties from injury scene was by private vehicle (53%), followed by ambulance (32%) and public transport (8%), but geographical variances were observed. The average transit time from injury was 10.64 hours (SD 23.61) for those injured within Harare. For direct transfers to PGH from within Harare, mean transit times were comparable between use of private vehicles (3.34 hours) and ambulances (3.31 hours). There was correlation between time of injury and method of transfer. There was no correlation between degree of injury according to ISS and transit time ($p = 0.24$).

Discussion

Significant challenges remain in ensuring timely and appropriate transfer of trauma casualties to tertiary care facilities.

SPECTRUM OF INTENTIONAL INJURIES IN THE JUVENILE POPULATION TREATED AT A LEVEL ONE TRAUMA CENTRE: A SOUTH AFRICAN PERSPECTIVE

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Background

South Africa has one of the most violent societies worldwide. The national homicide rate is 34 per 100 000; young males form the majority of this cohort. Comprehensive injury surveillance in low and middle-income countries is limited and there is paucity of data describing the epidemiology and outcomes of intentional injuries within the juvenile population.

Aim

The Aim of this study is to describe and analyse the pattern of intentional injuries seen in juvenile patients presenting to a level one trauma centre in South Africa.

Methods

Ethical approval was obtained for this study. The Electronic Trauma Health Registry (eTHR) Application of the Trauma Centre at Groote Schuur Hospital in Cape Town was interrogated over an 18-month period (April 2014 – December 2016) for all patients (aged 12–19 years) treated for non-accidental trauma. The data was then analysed using descriptive statistics.

Results

Over the study period, 2903 juvenile patients were admitted to the trauma centre. Intentional injuries (= 1387; 47.8%) accounted for nearly half of the study cohort. Complete datasets were available for 1295 patients. Within this cohort 210 (16.2%) patients were victims of gang-related violence. Penetrating injuries were seen in 878 (67.8%) patients, of whom 401 (45.7%) sustained knife injuries and 329 patients

(37.5%) sustained gunshot wounds. The most affected body region was the head (n= 388; 30%), followed by the thorax (n= 311; 24%). Permanent disability resulting directly from injury was seen in 5.2% (n = 66) of the patients who survived (n= 1266) and the overall mortality was 2.2% (n = 29).

Discussion

Intentional injuries are common within the juvenile population group in Cape Town. Penetrating injuries and gang-related activities account for a large subset of these patients. Whilst the overall mortality is only 2.2%, the permanent disability rate is 5.2% and is likely to have significant public health and economic ramifications for the South African health care system in the future.

CIVILIAN GUNSHOT WOUNDS TO THE CHEST: A CLINICOPATHOLOGICAL ANALYSIS OF AN ANNUAL CASELOAD AT A LEVEL 1 TRAUMA CENTRE

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Background

Gunshot wounds (GSW) to the chest are common presentations to trauma centres both in South Africa and internationally. The clinical management and outcome of GSW to the chest are significantly altered by missile trajectory and the associated anatomical structures injured making them challenging injuries to treat. Currently, the management of GSW chest is based on scant evidence and treatment is typically according to algorithms based largely on the anecdotal experience of high volume institutions and experienced clinicians.

Aim

Utilise an established prospective database of one of the world's largest Level 1 Trauma Centres to analyse the clinicopathological aspects of all patients with GSW to the chest. This work will strengthen the body of knowledge pertaining to the treatment of GSW to the chest and may then contribute to an evidence-based management algorithm for such injuries.

Methods

Ethical approval was obtained for this study. The Electronic Trauma Health Registry (eTHR) Application of the Trauma Centre at Groote Schuur Hospital in Cape Town was interrogated for the year 2015 for all patients with GSW chest. The data was then analysed using descriptive statistics.

Results

A total of 141 patients with GSW to the chest were admitted to the Trauma Centre with a median age of 26 years. More than half of the patients, 53.2% (n = 75), sustained an isolated GSW to the chest. Overall, 29.1% (n = 41) patients sustained thoraco-abdominal injury, which accounts for a significant higher number of emergency surgeries compared to patients with non thoraco-abdominal injury (54% vs 15%, $p < 0.01$). 9.2% (n = 13) of all patients required an emergency

thoracotomy or emergency chest surgery (resp. 3.5% and 5.7%) of which 5 patients survived. Overall mortality was 7.1% (n = 10) of which 5 patients died from a thoracic cause.

Discussion

Civilian GSW to the chest are common injuries seen in Cape Town, often with concomitant injuries leading to increased morbidity. Significantly more emergency surgeries were done in patients with thoraco-abdominal injury. Overall few patients needed chest-related emergency operative intervention (9.2%) with a survival rate of 38.5%. Overall mortality of patients with GSW chest who reached the hospital was 7.1% of whom 50% died from a thoracic cause.

EVALUATION OF THORACOSCOPY IN THE DIAGNOSIS OF DIAPHRAGMATIC INJURIES IN PENETRATING THORACOABDOMINAL TRAUMA WITHOUT LUNG DEFLATION AT DR GEORGE MUKHARI ACADEMIC HOSPITAL

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Background

With a mortality estimated at 25% when missed, diaphragmatic injuries due to penetrating thoracoabdominal trauma present a diagnostic challenge for both the radiologist and the surgeon. In the current literature, chest x-ray has a sensitivity of 27–60% for left-sided injuries and only 17% for right-sided injuries while, CT scan has a sensitivity of 14–61% and a specificity of 76–99%. Thoracoscopy using a single lung ventilation is one of the modalities of choice for the diagnosis of these injuries with a specificity of 100% and a sensitivity of 87.5%.

Aim

To assess the value of thoracoscopy without single lung ventilation as a diagnostic tool for diaphragmatic injuries in stable patients with penetrating thoracoabdominal trauma.

Methods

This was a prospective study; all stable trauma patients with penetrating thoracoabdominal injury aged 18 years and above admitted to the trauma unit at Dr George Mukhari Academic Hospital during the period of the study were included. All patients with penetrating thoracoabdominal trauma who were unstable, or necessitating prompt management and all paediatric patients were excluded from the study. In theatre, under general anaesthesia, we first performed thoracoscopy without single lung ventilation followed by laparoscopy as control on each patient. Data was collected using a standard proforma by the attending surgeon and was analysed by a statistician using IBM SPSS 22 software.

Results

A total of 32 patients met the inclusion criteria of which 4 were female (12.5%) and 28 male (87.5%) with the median age of 29 years. Of the 32 patients, 27 had thoracoabdominal stab wounds (84.3%) and 5 had gunshot wounds (15.6%). Fourteen patients (43.75%) had left sided injury and

18 patients (56.25%) had injury to the right side. The incidence of diaphragmatic injury was 37.5% (n = 12). No injuries were missed on thoracoscopy; there was no mortality or morbidity.

Discussion

Thoracoscopy without single lung ventilation is safe and comparable to thoracoscopy with single lung ventilation as a diagnostic tool for diaphragmatic injuries in stable patients with penetrating thoracoabdominal trauma.

ACCIDENTAL AND NON-ACCIDENTAL INJURY RELATED ADMISSIONS TO THE PAEDIATRIC INTENSIVE CARE UNIT AT CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL, JOHANNESBURG

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Background

Paediatric trauma is a major cause of morbidity and mortality in low and middle income countries. Data from these regions describing the extent and severity of this problem is scant. Local data is vital to understanding and responding to the problem of childhood injury.

Aim

To describe the demographic profile, injury profile, treatment modality and outcome of all children admitted to the paediatric ICU (PICU) at Chris Hani Baragwanath Academic Hospital (CHBAH) with accidental or non-accidental injury.

Methods

A retrospective record review of all trauma cases admitted to the PICU at CHBAH from 1 January 2011 to 31 December 2013 was performed. Descriptive statistics were generated using MS Excel. Students' t test was used for analytic statistics. Ethics clearance was obtained prior to data collection. All children aged 0–16 years were included.

Results

A total of 185/919 (20.1%) of all admissions to the PICU were due to childhood trauma. Complete records were found on 66.5% of patients. 57.7% of all admissions were male. Timing of admissions was split almost equally between weekends (49.5%) and weekdays (50.5%). Road traffic injuries (RTI) (65.8%) and toxin ingestion (TI) (17.1%) accounted for the majority of admissions. Children aged 0–4 years accounted for 44.7%, 5–9 years 39.0%, and 10–15 years 16.3% of admissions. The mortality rate was 8.9%. RTI accounted for 63.6% of all mortalities. 64% of mortalities occurred in the 0–4 year cohort, and 36% in the 5–9 year cohort. Mean age of survivors (5.8 years) was significantly higher than non-survivors (3.3 years) ($p < 0.05$). No significant difference was found in mean length of stay of survivors (6.5 days) and non-survivors (10.9 days) ($p = 0.05$). 89.4% of all children required invasive ventilation on PICU admission. Mean length

of ventilation in non-survivors (10.2 days) was significantly longer than survivors (4.5 days). 83.9% (516/615 days) of total days of ventilation were due to RTI and toxin ingestion.

Discussion

Preventable injury imposes a significant burden on the health care system, society, families and affected individuals. Local data is vital to recognition of the burden of disease caused by preventable injury and formulating appropriate intervention strategies. Road traffic injuries accounted for the majority of trauma admissions to our PICU. Multi-sectoral sustained action is required to decrease morbidity and mortality associated with preventable childhood injury.

THE ROLE OF CT SCAN IN PENETRATING ABDOMINAL TRAUMA

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Background

Penetrating abdominal trauma contributes significantly to the burden of disease in South Africa. The role of imaging, particularly CT scan in this subset of patients has yet to be established. A correlation between imaging and intraoperative findings could assist with providing a framework for non-operative management of patients with penetrating abdominal trauma. The role of imaging in blunt abdominal trauma has been established particularly in the patient who is haemodynamically stable. Historically, penetrating trauma to the abdomen has been managed with surgical intervention that achieved the dual purpose of providing a diagnostic as well as therapeutic value.

Aim

The Aim of this retrospective study is to compare the role of imaging in penetrating abdominal trauma to the intraoperative findings at Dr George Mukhari Academic Hospital over the period of one and a half years, June 2015 to December 2016.

Methods

A retrospective review of all haemodynamically stable patients who sustained penetrating abdominal trauma and were admitted to a tertiary institution, Dr George Mukhari Academic Hospital situated in Pretoria, South Africa. The time period under review was between June 2015 and December 2016. The source of data was a combination of the database, original patient records and records from radiology. The parameters that were reviewed included CT scan findings and intraoperative findings.

Results

A total of 131 patients were enrolled for this study. 74% of patients were found to have a negative CT scan as well as negative intraoperative findings. A total of 25% had positive intraoperative findings despite having a negative CT Scan.

Discussion

CT Scan correlates poorly with intraoperative findings.

FOLEY-CATHETER BALLOON TAMPONADE (FCBT) FOR PENETRATING NECK INJURIES (PNI) AT GROOTE SCHUUR HOSPITAL: AN UPDATE

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Background

A previous study from Groote Schuur Hospital (GSH) highlighted the success of FCBT (PNI).

Aim

This study is an update highlighting the management trends and outcomes.

Methods

The records of all patients with PNI requiring FCBT for a neck injury presenting to GSH within an 11-month study period were reviewed. Prospectively captured data on the Electronic Trauma Health Record Application (eTHRApp), was retrospectively analysed. Analysed data included demographics, clinical signs on admission, imaging, management and major outcomes.

Results

Over the 11-month study period, 311 patients with PNI were seen, of which 47 patients (15.1%) required FCBT. All were male; mean age of 28.6 years (range 18–48). Most injuries were caused by stab wounds (91.5%) while 4 patients (8.5%) suffered gunshot wounds. The majority of catheters (85.1%) were inserted by the referral institution. A total of 14 arterial injuries were identified, of which only one had ongoing active bleeding with haemodynamic compromise requiring immediate surgical intervention without prior imaging. The remaining 46 patients were imaged with computerised tomography angiography (CTA). A total of 8 major arterial injuries were found, of which six were surgically repaired; and one carotid injury was stented. A further 6 minor arterial injuries were identified and managed expectantly. A further 4 patients required surgery for their neck injuries: 2 had major venous injuries ligated and 2 required surgery for aerodigestive injuries. The remaining patients had their catheter successfully removed at 48–72 hours. There was no significant bleeding observed in any of these patients. There was one mortality caused by a large cerebral infarct from a common carotid artery injury.

Discussion

This series shows an increasing use of FCBT for PNI. Major differences from the previous series include the increased use of CT angiography and less reliance on formal angiography for diagnostic purposes. FCBT remains a simple, easy-to-use, yet effective technique.

SCREENING FOR AN OCCULT PENETRATING CARDIAC INJURY USING TRANSOESOPHAGEAL ECHOCARDIOGRAPHY (TOE): A PROSPECTIVE STUDY

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Background

30% of patients with a cardiac injury will present with a penetrating chest wound and be haemodynamically stable, the so-called “occult cardiac injury”. Current international practice is to screen for occult cardiac injuries using ultrasound (US) of the pericardial sac. If the US confirms the presence of fluid, then the patient undergoes a subxiphoid pericardial window (SPW) under general anaesthetic. In our experience, US Results in a large number of false positives and unnecessary operations.

Aim

To determine the accuracy of US for screening and whether transoesophageal echocardiography (TOE) may aid in the diagnosis and prevent unnecessary SPW.

Methods

Prospective study on all haemodynamically stable patients over 28-months with stab wound to the chest in the cardiac zone. Routine work-up comprised a CXR, ECG and an ultrasound. All patients with a positive US underwent a TOE prior to the performance of a SPW. The SPW was considered to be positive if there was blood in the pericardial sac.

Results

142 patients underwent a SPW over a period of 28 months with a median age of 29 (range 18–59) years. The sensitivity of US for detecting a haemopericardium was 95% but there were 96 false positives. A total of 51 patients had a TOE prior to the SPW; TOE had a sensitivity of 93%, specificity of 43%, and a positive predictive value of 38% for detecting a haemopericardium. There were 21 false positives and one false negative with TOE.

Discussion

TOE has a very high sensitivity for identifying a haemopericardium, but as with US, there is a problem with false positives and in this series a single false negative. SPW remains the screening tool of choice in detecting an occult cardiac injury.

CIVILIAN GUNSHOT WOUNDS TO THE CHEST: A CLINICOPATHOLOGICAL ANALYSIS OF AN ANNUAL CASELOAD AT A LEVEL 1 TRAUMA CENTRE

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Background

Gunshot wounds (GSW) to the chest are common presentations to trauma centres in South Africa. The clinical management and outcome of GSW to the chest are significantly altered by missile trajectory and the associated anatomical structures injured making them challenging injuries to treat. Currently, the management of GSW chest is based on scant evidence and treatment is typically according to algorithms based largely

on the anecdotal experience of high volume institutions and experienced clinicians.

Aim

To utilise an established prospective database of one of world's busiest Trauma Centres to analyse the clinicopathological aspects of all patients with GSW to the chest. This work may strengthen the body of knowledge pertaining to the treatment of GSW to the chest and may then contribute to an evidence-based management algorithm for such injuries.

Methods

Ethical approval was obtained for this study. The Electronic Trauma Health Registry (eTHR) Application of the Trauma Centre at Groote Schuur Hospital in Cape Town was interrogated for the year 2015 for all patients with GSW chest. The data was then analysed using descriptive statistics.

Results

A total of 141 patients with GSW to the chest were admitted to the Trauma Centre with a median age of 26 years. More than half of the patients, 53.2% (n = 75) sustained an isolated GSW to the chest. Overall, 29.1% (n = 41) patients sustained a thoracoabdominal injury, which accounts for a significant higher amount of emergency surgeries compared to patients with non thoracoabdominal injuries (54% vs 15%, $p < 0.01$). 9.2% (n = 13) of all patients required an emergency thoracotomy or emergency chest surgery of which 5 patients survived. Overall mortality was 7.1% (n = 10) of which 5 patients died from a thoracic cause.

Discussion

Civilian GSW to the chest are common injuries seen in Cape Town, often with concomitant injuries leading to increased morbidity. Significantly more emergency surgeries were done in patients with thoracoabdominal injury. Overall few patients needed chest-related emergency operative intervention (9.2%) with a survival rate of 38.5%. Overall mortality of patients with GSW chest who reached the hospital was 7.1% of whom 50% died from a thoracic cause.

OUTCOMES OF FAILURE OF SELECTIVE NONOPERATIVE MANAGEMENT OF PENETRATING ABDOMINAL TRAUMA

[HREC/REF: 679/2013]

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Background

Selective nonoperative management (NOM) of penetrating abdominal trauma is routinely managed in our trauma center.

Aim

The purpose of this retrospective observational study is to examine the outcomes of patients who have failed NOM.

Methods

All patients for the period 01 May 2015–15 June 2016 who presented with a penetrating abdominal injury were prospectively entered into an ethics approved database, Ethrapp, and retrospectively reviewed. The patients were categorised into 3 groups: immediate laparotomy, successful NOM and failed NOM. Outcomes included: postoperative complications, mortality and length of hospital stay.

Results

A total of 485 patients with penetrating abdominal trauma were managed over the 13-month period. Of these, 219 (45%) were initially selected for NOM and the remaining 266 (55%) patients underwent immediate laparotomy. Twenty-six (26; 12%) failed abdominal observation. Increasing abdominal tenderness and radiological study Results were the primary factors used to determine the need for laparotomy in the NOM group. The median delay to laparotomy was 44.5 hours (27–68). Seven hollow viscus, 13 solid organ and 6 diaphragm injuries were found at laparotomy. There were 22 therapeutic, 2 negative and one non-therapeutic laparotomy. 90% of the immediate group underwent a therapeutic laparotomy. There was no mortality in the NOM group. Complications showed no significant difference.

Discussion

The delayed diagnosis and treatment of failed NOM for penetrating abdominal trauma result in morbidity, mortality and hospital stay comparable with those who undergo immediate laparotomy.

HEALTH SYSTEMS

AN ANALYSIS OF THE INEQUALITIES BETWEEN THE PUBLIC AND PRIVATE SECTOR IN SOUTH AFRICA

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Background

The full extent of the global burden of surgical disease is largely unknown; however, the scope of the problem is thought to be large. Despite the substantial burden of surgical disease, surgical services are inaccessible to many of those who need them most. There are disparities between public and private sectors in South Africa, which compounds inequitable access to surgical care.

Aim

The Aim was to perform a comparison between the surgical resources in the public and private sectors in order to assess inequalities between them.

Methods

This study involved a descriptive analysis of surgical resources and included the total number of hospitals, hospital beds, surgical beds, general surgeons (specialist and non-specialist), and the number of functional operating theatres in South Africa. A comparison was performed between the public sector resources per uninsured population and private sector resources per insured population. Hospitals were contacted during the period 01 October 2014 to 31 December 2014.

Results

Surgical resources were concentrated in metropolitan areas of urban provinces. There were striking differences between sectors when a comparison was made between patients with and without health insurance. Private resources were comparable to those available in high income countries (HICs) and were accessible to only 16% of South Africans.

Discussion

Improving access to surgical services in lower middle income countries (LMICs) requires addressing gaps between the public and private sector regarding infrastructure, personnel, as well as equipment. South Africa is unique in that although it is classified as an upper middle income country (UMIC), it comprises of two sectors; a public sector which has resources similar to other LMICs, and a private sector which has resources similar to HICs. These data identified disparities between geographic regions which may be contributing to ongoing inequity in South Africa, and by doing so allows for evidence-based planning towards improving surgical infrastructure and workforce.

GLOBAL SURGERY – A REVIEW OF THE PAEDIATRIC SURGICAL WORKFORCE IN SOUTH AFRICA

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Background

Surgical conditions lead to premature death and disability resulting in a massive economic burden. Contributing to this global crisis is the lack of data on the limited surgical workforce in many low and middle income countries (LMICs).

Aim

This study involved a descriptive analysis of the paediatric surgeons in South Africa and included the number of training as well as qualified paediatric surgeons.

Methods

All paediatric surgeons were contacted during the period 1–28 February 2017 via email as well as during a congress which was held at Red Cross War Memorial Children's Hospital, and a database was compiled. An international comparison of South Africa's paediatric surgical workforce was then performed with several countries.

Results

The Results showed 5.55 paediatric surgeons per one million population under 14 years. More than half (55%) were male and the average age was 39.5 years. The majority of the paediatric surgical workforce was found in Gauteng (40.0%), followed by the Western Cape (27.7%) and Kwa-Zulu Natal (21.1%). The majority of qualified specialists reportedly worked in the public sector (n = 24), followed by dual practice (n = 21) and lastly in the private sector (n = 8). These numbers fell far below developed countries such as the United Kingdom (UK) and United States of America (USA), but compared favourably with Canada, China and Ireland.

Discussion

Strengthening surgical systems, which includes mapping surgical workforce, will reduce the surgical burden of disease and improve health outcomes globally. This description of the paediatric surgical workforce provided insight into the surgical capacity of South Africa. Furthermore, it provided a comparison between South Africa and the rest of the world.

FACTORS CONTRIBUTING TO ELECTIVE THEATRE CANCELLATIONS IN THE DEPARTMENT OF SURGERY AT CHBAH

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Background

Elective theatre cancellations is a common experience the world over that impacts on theatre efficiency with undesirable consequences on the health care system, the patients and their families. It increases costs of running theatres, is a financial burden and emotional strain on patients and their families.

Aim

To 1) Determine the reasons for and rates of cancellations in the Department of Surgery; 2) Classify the reasons for cancellations as Patient, Administrative or Medical related

and judge the reason to be either Avoidable or Unavoidable; 3) Determine the ASA scores of patients cancelled in relevance to medical reasons for cancellations and determine the need for preoperative evaluation clinics.

Methods

A retrospective study where 300 cancellations in the Department of Surgery were randomly selected and analysed from the Morbidity and Mortality meetings held at Chris Hani Baragwanath Academic Hospital from November 2015.

Results

Of the 1554 elective cases booked during the period under review, there were 294 cancellations resulting in a cancellation rate of 18.9%. Laparoscopic Cholecystectomy was the most common procedure (31.8%) cancelled. The most common reason for cancellation (50%) was time constraints. Administrative related reasons for cancellation were the most common (85%) encountered. The majority of cancellations were judged to be the event of an Unavoidable reason. The majority of the patients cancelled were ASA II and ASA III (77%). The ASA score had no significance on medical related cancellations.

Discussion

We reported a comparatively high cancellation rate. Further prospective studies need to be conducted to critically evaluate the reasons behind lack of operative time as the majority of the reasons for cancellation could be potentially avoidable.

SURGICAL INFECTIONS AT A REGIONAL HOSPITAL IN GAUTENG: REASONS FOR DELAY TO CARE AND PROFILE OF PATHOLOGY

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Background

Infection is a common cause for the admission of surgical patients who were initially seen and managed at the primary health care level. Delay to care significantly increases the health care burden of surgical sepsis on affected individuals, the health system and society.

Aim

To describe the demographic profile, disease profile and reasons for delay to care of patients presenting with surgical sepsis to Edenvale General Hospital (EGH).

Methods

A prospective descriptive study was performed by means of a confidential questionnaire presented to qualifying patients between February 2014 and October 2016. No minors were included in the study. Descriptive statistics were generated utilising MS Excel. Analytic statistics were facilitated using the t-test, Chi Squared test, Fischer's Exact Test and logistic regression.

Results

A total of 89 patients agreed to participate. Abscesses (23/89, 25.8%), diabetic foot (20/89, 22.4%), cellulitis (14/89, 15.7%)

and septic burns (10/89, 11.2%) were the most common categories of infection requiring admission. The majority of patients admitted were Black African males (39/89, 43.8%), with no medical aid (88/89, 98.8%), no formal employment (52/89, 58.4%), inhabiting some form of formal housing (80/89, 89.8%), from poor households (defined as annual income < R60 000/year) (66/89, 74.1%), were in charge of decisions regarding personal health (71/89, 79.7%), and first sought help at the primary health care level (local clinic or private physician) (63/89, 70.7%). In total 68.5% (61/89) of patients admitted had a significant delay of > 48 hours from onset of symptoms to presentation to a health care worker. Furthermore, 46.1% (41/89) of patients experienced a significant delay of > 24 hours from presentation to health care worker to admission. The most common reason for delay to care in both groups (50/61, 81.9% and 25/41, 60.1%, respectively) was patients' belief that the problem would resolve itself.

Discussion

Urban populations are different to rural populations in terms of barriers to access to health care. Utilisation of primary health care services (private and public) as a first point of contact with the health care system is high. Patients' perception of their own health is an important determinant of their health seeking behaviour.

A THIRD OF PATIENTS TREATED AT A TERTIARY LEVEL SURGICAL SERVICE COULD BE TREATED AT A SECONDARY LEVEL FACILITY

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Background

South Africa has an overburdened public healthcare system. Some admissions to Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) may not require tertiary care. The numbers and details thereof are uncertain. Clinical research is limited by skills and access to data.

Aim

To determine the proportion, and length of stay, for secondary, tertiary and quaternary level patients discharged from the Department of Surgery at CMJAH over one year.

Methods

A retrospective analysis of Electronic Discharge (ED) summaries from the Department of Surgery at CMJAH between 01 April 2015 and 01 April 2016. An SQL-query of the database generated a .csv file of all discharges with the fields database reference number, length of stay and level of care. The details and level of care of each record were verified by MBBCh 5 medical students using a defined level of care template with review of the full discharge summary. The data was reviewed by a senior clinician.

Results

There were 3007 discharge summaries, 97 were not classifiable, two were test records and one was a duplicate. These 100 records were excluded. There were no primary level records. Secondary level patients represented 29% (854) of patients discharged and 19% of total bed days. Tertiary and quaternary together represented 71% of the total patients and 81% of bed days. The average length of stay was 4.31 days for secondary, 6.98 days for tertiary and 9.77 days for quaternary level of care allocation.

Discussion

Almost a third (29%) of patients discharged from CMJAH Department of Surgery were deemed suitable for secondary level care. These admissions have a shorter length of stay and comprise 19% of total bed days. Students and electronic databases are useful research resources.

FACTORS LEADING TO DELAYED PRESENTATION OF PATIENTS WITH DIABETIC FOOT SEPSIS AT REGIONAL HOSPITALS IN THE EKURHULENI METROPOLITAN MUNICIPALITY OF GAUTENG PROVINCE

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Background

Nearly 50% of all diabetes-related admissions are due to diabetic foot problems and diabetes mellitus is the commonest cause for non-traumatic amputation of the lower limb.

Aim

To determine factors which contribute to delayed presentation in patients presenting with diabetic foot sepsis.

Methods

A prospective longitudinal observational study of all patients 18 years and older was conducted. Data collected included demographics, diabetic history and treatment type, co-morbidities, prior treatment, clinical findings, treatment method and overall outcome. Data was entered into an Excel spreadsheet for analysis, and categorical data was expressed in percentages whereas continuous data in mean and 95% confidence interval. Incident risk ratio was calculated. Chi-square and Student t-test were used when appropriate. Permission to conduct the study was received from HREC at Wits (M160759).

Results

68 patients were studied of which 61.8% (42/68) were males. The average age for males and females was 58.9 and 63.9 years respectively. 90.5% of males and 96.2% of females were known diabetic and 51.5% were on oral hypoglycaemics. 47.1% had prior diabetic education, 36.8% had home haemoglucotest and compliance was good in 39.7%. 71.4% of males and 80.8% of females presented more than two weeks after onset of foot sepsis. Prior use of herbal medication was reported by 16.7% of males compared to 26.9% in females. 69.1% were seen at a clinic and 71.4% were treated with antibiotics before referral. 53.8% of females and 59.5% of males were amputated and mortality was 15.4% and 4.8% for females and male, respectively.

Discussion

Majority of patients presenting with diabetic foot sepsis are known with diabetes and are on oral hypoglycaemics. Trial of antibiotic and herbal therapy is attempted for most patients before they are referred. More than 50% end with amputation and mortality is three times higher in females.

SURGICAL EDUCATION

REGISTRAR PERCEPTIONS ON GENERAL SURGICAL TRAINING IN SOUTH AFRICA: A REPORT BY THE SOUTH AFRICAN SOCIETY OF SURGEONS IN TRAINING (SASSIT)

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Background

Surgical training varies significantly even amongst universities within the same country. This trend is reflected in South Africa and provides an opportunity for innovation to improve the quality of general surgical training.

Aim

To assess the perceptions of South African general surgery registrars regarding surgical training.

Methods

A prospective descriptive study was performed by means of a confidential questionnaire distributed to general surgical registrars at all 8 training centres in South Africa. Participants were asked to give comments regarding adequacy of formal academic teaching, level of supervision during surgical procedures, exposure to and training in minimally invasive surgery (MIS), and preparation for examinations. Descriptive statistics were generated with Microsoft Excel. Ethics clearance was obtained from the University of Witwatersrand Human Research Ethics Committee.

Results

Of 200 questionnaires distributed, 105 (52.5%) were returned. In total 44% (105/241) of all registrars from 6 training institutions participated. The majority (89.5%; 94/105) of respondents reported that they attended less than 6 hours of formal academic teaching per week and 71.4% (75/105) indicated that their institution offered less than 6 hours of formal academic teaching per week. Furthermore, 76.2% (80/105) of respondents regarded lack of protected academic time as the greatest hindrance to their surgical training and 95.2% (99/105) reported that clinical responsibilities prevented them from attending formal academic teaching regularly. Overall, only 31.4% (33/105), 41.9% (44/105) and 37.1% (39/105) were satisfied with the amount of formal academic teaching, level of supervision during theatre procedures and exposure to MIS, respectively. Lack of resources and lack of appropriate skills were identified as a hindrance to MIS training by 47.6% (50/105) and 28.6% (30/105) of respondents, respectively.

Discussion

Surgical registrars are dissatisfied with the amount of formal academic teaching and protected academic time,

level of supervision in theatre and their exposure to MIS. These challenges compromise trainees' ability to practise independently on qualification. Numerous interventions are necessary and possible to address these challenges.

SOUTH AFRICAN SURGICAL REGISTRAR PERCEPTIONS OF THE RESEARCH PROJECT COMPONENT OF TRAINING: HOPE FOR THE FUTURE?

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Background

The Health Professions Council of South Africa requires that a research project be submitted and passed before registration as a specialist.

Aim

To describe surgical registrars' perceptions of the compulsory research project.

Methods

Ethics clearance was received before commencing the study. A questionnaire was developed to collect feedback from surgical registrars throughout South Africa (SA). Completed questionnaires underwent descriptive analysis using MS Excel. Fisher's exact test and the χ^2 test were used to compare perceptions of the research-experienced and research-naïve groups.

Results

All medical schools in SA were sampled, and 51.5% (124/241) of surgical registrars completed the questionnaire. Challenges facing registrars included insufficient time (109/124), inadequate training in the research process (40/124), inadequate supervision (31/124), inadequate financial resources (25/124) and lack of research continuity (11/124). Of the registrars sampled, 67.7% (84/124) believed research to be a valuable component of training. An overwhelming percentage (93.5%, 116/124) proposed a dedicated research block of time as a potential solution to overcoming the challenges encountered. Further proposals included attending a course in research methodology (79/124), supervision by a faculty member with an MMed or higher postgraduate degree (73/124), and greater research exposure as an undergraduate (56/124). No statistically significant differences were found between the perceptions of the research experienced and research-naïve groups.

Discussion

Challenges facing surgical registrars in their efforts to complete their research projects were identified and solutions to these problems proposed. It is heartening that respondents have suggested solutions to the problems they encounter, and view research as an important component of their careers.

DOES GENDER IMPACT ON FEMALE DOCTORS' EXPERIENCES IN THE TRAINING AND PRACTICE OF SURGERY?

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Background

Surgery has been a male-dominated speciality both in South Africa and abroad.

Aim

This study was conducted to explore how gender differences impacted on the training and practice of surgery.

Methods

This mixed methodology case study collected data from a purposive sample of female surgical registrars enrolled at one institution in South Africa. A self-administered questionnaire was used to explore whether or not female doctors perceived any benefits of being in a male-dominated specialty. It explored problems encountered due to gender, the participants' perceptions of the influence of gender on their surgical training, practice and challenges.

Results

Thirty-two female registrars participated in the study. The respondents were mainly South African (91%) and enrolled in seven surgical specialities. Twenty-seven (84%) respondents

were satisfied with their practical training and skills development as surgeons. Twenty-four (75%) respondents had identified a mentor from the department and all respondents indicated that the gender of their mentor did not impact on the quality of their training. Seventeen (53%) respondents perceived having received differential treatment due to their gender and 25 (78.2%) thought that the gender of their mentor did not impact on the quality of the guidance in surgery. Challenges included physical threats to them as females from patients and disrespect, emotional threats and defaming statements from male registrars. Other challenges included time-constraints for family and academic work, poor work-life balance and being treated differently due to their gender. Seventeen (53%) respondents would consider teaching in the Department of Surgery. Twenty-five respondents (78%) would recommended the specialty to young female students, as they were convinced that surgery had been the right choice for them. Seventeen respondents (53%) were also open to pursuing teaching posts in the Department of Surgery.

Discussion

Generally, females had positive perceptions of their training in Surgery. They expressed concern about finding a work-life balance. The gender of their mentor did not impact on the quality of the training but 'bullying' from male peers and selected supervisors occurred. Respondents will continue to recommend the specialty as a satisfying career to young female students.

MISCELLANEOUS

HISTOLOGICAL EVALUATION OF SMOOTH MUSCLE CELL IN THE PATENT PROCESSUS VAGINALIS

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Background

Inguinal hernia is a common pathology that necessitates surgical treatment during childhood. Most uncomplicated inguinal scrotal pathologies are considered to occur due to incomplete obliteration of the processus vaginalis (PV). The incomplete obliteration is proposed to be due to the persistence of smooth muscle cell (SMC) in the PV after birth. Immuno-histochemical studies have been published to evaluate the diversity and differentiation of SMC phenotypes in the PV resected in patients' inguinal hernia and hydrocele.

Aim

The Aim of this study is to validate SMC present in the PV.

Methods

Sixty-six specimens were collected from consecutive patients undergoing elective surgery for inguinal hernia, undescended testes and hydroceles over an 8-month period. Specimens were collected in standardised manner and sent for histological evaluation. The specimens were evaluated for the presence of SMC microscopically and via special staining.

Results

PV specimens in 15/19 female hernias, 11/22 male hernias, 2/6 hydrocele and 5/19 undescended testes contained SMC. The rest of the specimens did not contain SMC.

Discussion

There appears to be a strong presence of SMC in female patients, but a weak association of SMC in the PV of male hernia, hydroceles and undescended testes. We therefore conclude that the incomplete obliteration and SMC presence hypothesis does not hold true for male inguinal hernias. Further studies are underway to examine this more closely.

DIFFERENCES IN MICROBIOME IN RAT MODELS OF CARDIOVASCULAR DISEASE

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Background

Recent studies have underscored the important role the gut metagenome in various human diseases, including diabetes and obesity. Hypertension is a major risk factor for cardiovascular disease, stroke, and heart and kidney failure, and affects approximately 25% of the world's adult population. The cause of essential hypertension remains unknown. Patients given antibiotics show blood pressure changes and transfer of gut

bacteria from hypertensive to normal WKY rats resulted in the latter developing hypertension. Such studies implicate gut bacteria as having a possible causal role in the development of hypertension.

Aim

To compare the composition of gut flora in salt sensitive Dahl rats, both without (control) and with hypertension (SSR) and spontaneously hypertensive rats (SHR).

Methods

Stomach, intestinal and fecal samples were collected from SHR and salt sensitive rats, cultured and identified by matrix-assisted laser desorption ionization-time of flight mass spectrometry (MALDI-TOF) based biotyping and *16SrRNA* sequencing.

Results

Preliminary results show an abundance of *Escherichia coli*, *Bacillus cereus*, *Enterococcus faecalis*, *Lactobacillus murinus* and *Staphylococcus scouri* in SHR, SSR and control mice. SHR had the least diverse microbiota and had species including *Klebsiella pneumonia*, *Pediococcus acidilactici* and *Enterococcus gallinarum*. While SSR had slightly more diverse isolates as compared to SHR and included *Acinetobacter* sp, *Pseudomonas auriginosa*, *Corynebacterium ammoniagenes*, *Micrococcus luteus*, and *Staphylococcus cohnii*.

Discussion

Bacteria from the phyla *Bacteroidetes* and *Firmicutes* were prevalent in animal models of hypertension. Previous studies have shown that bacteria from these phyla play a role in development of hypertension. Understanding the role played by gut microbiota may provide a novel insight into the aetiology of hypertension.

A HISTOPATHOLOGICAL AUDIT OF HYPERPARATHYROIDISM IN THE SOUTH AFRICAN SETTING

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Background

Hyperparathyroidism is a common endocrine disorder. Parathyroidectomy is indicated for primary and tertiary hyperparathyroidism. Parathyroid adenoma is the cause in close to 85% of cases of primary hyperparathyroidism.

Aim

To determine the profile and histopathological findings of patients who had parathyroidectomy for hyperparathyroidism.

Methods

An audit based on histopathology records of patients who had parathyroidectomy from January 2011 to December 2015 in academic hospitals linked to Wits was conducted. Data collected included patients' demographics and histopathological findings. Categorical data was expressed in number and percentage whereas the mean or median if appropriate was used for continuous data. Chi-square test was

used for comparison and a p-value was set at less than 0.05 for significance. The study was partly done by GEMP 3 students and permission to conduct the study was received from HREC at Wits (M160477).

Results

A total of 69 records were found of which 67.6% (46/68) were females. Average age for females was 55.0 years (range 25–83) whereas for males was 60.0 years (25–80). Parathyroid adenoma was reported in 75.4% and 69.6% of specimen from females and males, respectively. In 1.5% (1/86) the resected parathyroid was reported to be normal. Concomitant thyroidectomy was done in 17.4% (8/46) of specimens from females and 8.7% (2/23) from males.

Discussion

Male patients with hyperparathyroidism present at younger age compared to females. Fewer than expected parathyroidectomies for primary hyperparathyroidism are being performed in the Wits circuit. The commonest findings following parathyroidectomy is parathyroid adenoma. No case of parathyroid cancer was reported. Concomitant thyroidectomy is likely in females.

MANAGEMENT OF FAILED MITRAL VALVE REPLACEMENT. THE DURBAN EXPERIENCE

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Background

Mitral valve replacement is the procedure of choice in patients with severe mitral valve disease. However, these patients are surviving longer and are thus at an increased risk of prosthesis failure or valve-related complications.

Aim

To document the experience with redo mitral valve replacement in the South African setting and to determine factors influencing failed mitral valve replacement.

Methods

Study setting: Inkosi Albert Luthuli Central Hospital, a tertiary referral Hospital in Durban. Study population: All patients undergoing redo mechanical mitral valve replacement surgery between January 2005 and December 2014. Study design: Retrospective analysis of patients undergoing redo mitral valve replacement. Patients were identified from theatre record books, their files were electronically accessed and pertinent information extracted onto a data capture sheet. Information documented included demographics, duration to failure, INR, Albumin, HIV status, clinical findings and outcome. The data was stored on an Excel datasheet.

Results

Fifty-eight patients were documented (mean age 32 ± 15.81 years; M:F 1:3). Ten patients (17%) were HIV positive (median CD4 count 478). Mean duration between first surgery and redo was 8.8 years. Thirty-five patients (60%) had no co-morbidities. Presenting features at redo surgery were congestive cardiac failure (27), chest pain (11) and

palpitations (17). Mean preoperative Ejection Fraction was 51.65 %. Twenty-nine patients (55%) had emergency redo surgery. Twenty-two patients (75%) had acute prosthetic valve thrombosis. Thirty-two patients had tricuspid regurgitation. Original pathology was documented in 23 patients (40%) as Rheumatic valve disease. Prosthetic valve thrombosis was documented in 31 patients (54%). The most commonly used valve was the On-X. Mean presenting INR was 1.96 ± 1.2 and mean presenting serum albumin was 36.7 ± 7.8 g/l. Forty-one patients (71%) were found to be compliant to Warfarin therapy prior to redo surgery. Mean ICU stay was 6 ± 9 days. Two patients died postoperatively. Mean follow-up was 32 ± 26.6 months. Twelve patients (20.7%) developed postoperative complications.

Discussion

Patients were younger than world literature suggests. Rheumatic heart disease was the common underlying pathology. Prosthetic valve thrombosis was common. More than half had emergency surgery. Mortality rate was negligible.

OUTCOMES OF HILAR PEDICLE CONTROL USING SUTURE LIGATION DURING LAPAROSCOPIC SPLENECTOMY

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Background

Laparoscopic splenectomy is a well described gold standard procedure for various indications. One of the key steps during laparoscopic splenectomy is the hilar pedicle vessels control, which can be challenging in most cases. Most centres around the world recommend the use Ligaclib or endovascular staplers as Methods of choice for hilar pedicle control but the issue is the cost and efficiency of the laparoscopic haemostatic devices.

Aim

To determine the outcomes in patients who had laparoscopic splenectomy using suture ligation of splenic hilar pedicle in DGMAH. Objectives: to document the outcomes of patients offered this technique; to document the complications of this technique; to describe the technique of hilar control in laparoscopic splenectomy.

Methods

A descriptive retrospective study of patients who had laparoscopic splenectomy from 2013 to present. Hilar splenic vessel control was done with suture ligation. We looked at outcomes of patients offered this technique, complications of this technique, and describing the technique of hilar control in laparoscopic splenectomy.

Results

Total of 27 patients had laparoscopic splenectomy with splenic hilar pedicle control with suture ligation. Mean operative time, mean blood volume loss, length of hospital stay, postoperative complications conversion to laparotomy.

Discussion

Laparoscopic hilar pedicle control with suture ligation is safe and effective for the patient in our hospital setting.

MANAGEMENT OF MYELOMENINGOCELE IN THE PROVINCE OF KWAZULU-NATAL, SOUTH AFRICA

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Background

Spina bifida is the most common of congenital anomalies of the central nervous system that are compatible with life. The most frequent form is myelomeningocele.

Aim

To investigate the clinical presentation, characteristics, surgical repair, management of hydrocephalus and factors contributing to the outcome for children with myelomeningocele treated at a single institution.

Methods

Setting: Neurosurgery Unit, Inkosi Albert Luthuli Central Hospital. *Patients:* Consecutive children with diagnosis myelomeningocele who were managed at from January 2006 to December 2014. *Design:* Retrospective analysis of children with myelomeningocele. Multiple logistic regression analysis identified clinical, demographic and surgical variables that were associated with outcome.

Results

There were 307 patients of whom 173 were male (57%). One hundred and thirty-five (44%) were delivered via C-section. MMC location was at lumbar [175, 57 %], sacral [21, 7%], thorax [17, 5.5%] and cervical 2 (0.7%). One hundred and fifty-six (51%) presented with CSF leak. One hundred and forty-one (48%) presented with complete paralysis of the lower limbs. The mean age at surgical repair was 4.7 ± 15.6 months. The dura was repaired primarily in all patients and 20 (7.9%) were operated in conjunction with plastic surgeons. Fifty-eight (21%) patients developed wound sepsis of those 35(60%) required surgical debridement, while chemical debridement was sufficient in the rest. The time to wound sepsis was 9.5 ± 3.6 days. Two hundred and eight (68%) children developed hydrocephalus requiring CSF diversion. In 143 (46%) children a VPS was used to treat HCP, while in 27 (9%) ETV was performed, 33 (23%) developed shunt malfunction due to infection [15, 45%]. The time to shunt infection was 176 ± 83.3 days. The in-hospital mortality was 27 (9.1%). Wound sepsis and meningitis were associated with death ($p < 0.002$). The average hospital stay was 20.4 ± 16.93 days, children with wound sepsis and/or meningitis had longer hospital stay, 38.1 ± 22.3 days and 40.5 ± 29.7 days respectively.

Discussion

Method of delivery, age at repair, CSF leak and hydrocephalus were not independently associated with infection. Infection was associated with adverse outcomes and yielded longer hospital stay.

RAT BITE INJURIES IN CHILDREN ADMITTED AT TEMBISA HOSPITAL

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Background

Rat bite injuries were observed as early as AD 1300. Up to date no literature exists that looks at the different clinical manifestations of rat bite injuries, and furthers a proposed management plan that is evidence based.

Aim

To describe the pathological pattern and natural history of rat bite injuries, and provide a classification system; to determine the common anatomical sites of injury, the severity thereof, and the respective associations with a child's age.

Methods

We studied 59 patients who sustained rat bite injuries from July 2010 to 2014. Injuries were classified based on the pattern and natural history. Epidemiological and clinical data were correlated with the grading system and management employed.

Results

The pattern of injury was described and classified into mild, moderate and severe. Children aged 1 year and younger sustained mild forms of injury while those older than 1 year had more moderate to severe injuries ($p = 0.0006$); that was the very same group that manifested a higher inflammatory response as evidenced by a temperature of $> 38^{\circ}\text{C}$ ($p = 0.0238$). There was no association between age and anatomical site of injury ($p = 0.8313$). The highest incidences were seen in Ivory Park (30.5%), which is the largest and most impoverished section in Tembisa.

Discussion

In this study, the data showed three distinctive patterns of injury: graded mild, moderate and severe. The mild injuries heal without consequences and may be managed as outpatients. Penicillin monotherapy is sufficient to prevent or treat secondary infection. The few patients who received anti-rabies treatment did not show clinical benefit, thus we do not recommend its routine use. However, in areas where there is rabies outbreak it may be prudent to prescribe it. Mortality due to rat bite injuries is rare, but disfigurement may be devastating.

EVALUATING KIDNEY FUNCTION IN LIVING DONORS IN SOUTH AFRICA

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Background

Measurement of glomerular filtration rate (GFR) is the best overall index of kidney function. Equations that estimate

GFR (eGFR) have been developed for clinical use such as Cockcroft and Gault (C+G), four variable Modification of Diet in Renal Disease (4-v MDRD) and Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI). Although widely used, they have not been validated in Sub-Saharan Africa.

Aim

To assess performance of eGFR equations against a gold standard radionuclear GFR measurement (mGFR) in adults evaluated for live kidney donation in South Africa.

Methods

Data on 350 adults evaluated for live kidney donation from 1996 to 2013 at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) and Wits Donald Gordon Medical Centre (WDGMC) was reviewed. Their eGFR was calculated using CG, 4-v MDRD and CKD-EPI equations. Plasma clearance of ⁵¹Cr-EDTA was used as a reference method for mGFR. The equations were also assessed by their sensitivity, specificity, and positive and negative predictive values for identification of subjects with mGFR < 80 mL/min/1.73m².

Results

The majority of potential donors were young Black females. Approximately half were unsuitable for donation mostly due to obesity and hypertension. On Bland Altman Comparisons of eGFR equations to mGFR, the 4-vMDRD equation (with/without adjustment for ethnicity) showed a negative bias that resulted in average eGFR values between 8 - 16mL/min/1.73m² lower than mGFR respectively (p < 0.0001). CKD-EPI resulted in eGFR values being on average 6.4mL/min/1.73m² lower than mGFR (p<0.0001). There was no significant bias with CG (p = 0.55). For all four equations, the bias decreased as mGFR and age increased and there was no gender effect. The 4-v MDRD and CKD-EPI equations demonstrated higher eGFR for black donors. All four prediction equations had a low sensitivity and poor PPV, with 4v-MDRD (without adjustment for ethnicity) being the most sensitive but least specific.

Discussion

For all four eGFR equations, the error statistics worsen as mGFR increases. Adjustment for ethnicity in 4-v MDRD reduced the bias slightly. Overall, the performance of CG was superior to CKD-EPI and 4-v MDRD equations. All four prediction equations had a low sensitivity. This study suggests mGFR should be the gold standard for evaluating living donors in SA.

A FOUR YEAR ACROSS SURGICAL DISCIPLINE PERIOPERATIVE AND INTRAOPERATIVE EXPERIENCE OF PATIENT MANAGEMENT IN A TERTIARY ACADEMIC HOSPITAL - A REVIEW

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Background

There has been a growing trend in the surgical literature to report mortality and morbidity after surgery with preoperative

risk adjustment to facilitate meaningful comparisons of surgical outcomes between different surgeons and hospitals. This is a review of the rate of injuries caused by surgeons unintentionally whilst performing procedures in the field of obstetrics and gynaecology, for example, caesarean sections and hysterectomies.

Aim

To review the incidence of surgical intervention post-iatrogenic injuries incurred during gynaecological procedures performed in particular caesarean sections and hysterectomies.

Methods

Data was collected retrospectively over the past four years at Dr George Mukhari Academic Hospital utilising the database and theatre records correlated with patient files.

Results

A total of 182 cases were collected spanning the four years reviewed. The injuries were grouped according to the type of injury sustained. Iatrogenic injury to the bladder was the highest at 28.6%. Injury to the right ureter (21.4%) was higher than injuries sustained to the left ureter (12.1%). A combination of bladder and uretric injury was 8.2%. Injuries to the small bowel (17.6%), large bowel (6.6%) and rectum (2.8%). Vascular injuries (2.2%).

Discussion

The incidence of gynaecological iatrogenic injury during caesarean section and hysterectomy is higher at Dr George Mukhari Academic Hospital than what is reportedly worldwide.

PAEDIATRIC SPLENECTOMY: THE JOHANNESBURG EXPERIENCE

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Background

Splenectomy is uncommon in children and data on splenectomies in the South African paediatric population is sparse. A deeper understanding of the demographics, indications, techniques, and postoperative management of patients requiring splenectomy may improve care.

Aim

To describe the profile, operative management and outcomes of children undergoing splenectomy.

Methods

Patient records for all splenectomies performed in children aged 0 to 16 years at Charlotte Maxeke Johannesburg Academic (CMJAH) and Chris Hani Baragwanath Academic Hospitals (CHBAH) between 2000 and 2015 were reviewed. Students' t- and Chi-squared tests were utilised for analytic statistics.

Results

Mean age at surgery was 9.9 years with a range of 3 to 16 years. Overall, 91% of splenectomies were performed for haematological disorders with the remaining 9% performed for malignancy or trauma. Two-thirds (67%) of splenectomies were performed open and 33% laparoscopically. Mean postoperative length of stay (LOS) was significantly shorter in the laparoscopic cohort compared to the open cohort (4.5 vs 7.1 days, respectively; $p < 0.05$). Surgical complications were more common in the laparoscopic group (27%) compared to the open group (9%), as well as in those children older than the mean age at time of surgery. No partial splenectomies were performed. No cases of overwhelming post-splenectomy infection (OPSI) were recorded. In total, 20 patients (61%) were still alive, 3 had died, and 10 had been lost to follow up at study completion.

Discussion

Local indications for splenectomy mirror those within international literature. Higher rates of postoperative complication in the open and laparoscopic groups in our series may be due to a learning curve in laparoscopic splenectomy, the low sample size, or the underlying state in which our patients present. Mean postoperative LOS was shorter in the laparoscopic than open group, but relatively longer for both groups than reported in the international literature. Laparoscopy is, as yet, not the preferred technique for splenectomy in our setting. All mortalities were due to progression of underlying disease and no cases of OPSI were recorded. The high rate of loss to follow up in this study is a significant barrier to accurate data collection and reporting.

CONTINUATION OF FEEDS IN THE UNSTABLE BURNS PATIENT

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Background

Early enteral nutrition (EEN) and the continuation of enteral nutrition (EN) are critical factors in burn patients, who typically have higher nutritional needs due to their post-injury hypercatabolic state and their additional need for nutrients to aid in the healing of wounds and skin grafts. In the critically ill patient, EN is the preferred mode of administration; however, controversy exists regarding the concomitant use of EN and intravenous vasopressor agents in the haemodynamically unstable patient. This is because vasoactive substances (e.g. adrenalin) contribute to gut hypoperfusion, thereby increasing the chances of tissue hypoxia and intestinal ischaemia [Wells, 2012]. Consensus is to withhold EN whilst the patient is receiving high dose intravenous vasopressor support. At the Chris Hani Baragwanath Academic Hospital (CHBAH) all patients admitted to the Adult Burns Unit (ABU) receive enteral feeds on admission, irrespective of whether they are receiving vasopressor support or not.

Aim

To determine if a) EN should be continued in the haemodynamically unstable burns patient on high dose intravenous vasopressor support; and b) to determine the safety and tolerability of EN in these patients.

Methods

A retrospective medical record review was conducted at the ABU of CHBAH and included all adult burn ICU patients receiving concomitant EN and vasopressor support for at least two hours or more. The patient register was used to identify the patients admitted to the ICU during the 5-year period from 01 September 2010 to 31 December 2015. The number of patients during this period totalled 1109, of which 475 were admitted to ICU. From this group, only 44 patients met the inclusion criteria (TBSA > 20%; and/or inhalation injury; mechanical ventilation) in addition to receiving concomitant EN and intravenous vasopressor support (i.e. adrenalin).

Results

Twenty-five percent of patients (11/44) experienced GIT upset and concomitant high aspirates (> 200 ml/6 hrs) on high doses of adrenalin. Only 9% (4/44) experienced vomiting (V), while 21% (9/44) experienced diarrhoea (D). In only 3 of the 44 patients (7%) were the enteral feeds stopped (V and D in 1 patient; 1 had aspirates > 500 ml; 1 had high aspirates and D). None experienced thrombosis, ischaemia or bowel necrosis.

Discussion

In the majority of the haemodynamically unstable burns patients in ICU who received vasopressor support, EN was well tolerated. Even in the patients who experienced intolerance, there were no complications such as ischaemia or bowel necrosis. As such, it would appear that the administration of vasopressors in haemodynamically compromised burn patients is not a contraindication in carefully monitored EEN and ongoing EN. In this study, the concomitant use of EN and vasoactive substances did not place the patients at increased risk for ischaemia or NOBN. However, larger samples would need to be investigated to enable generalisation of the findings to the larger/general population of critically ill burns patients.

COMPARING OUTCOMES AFTER LAPAROSCOPIC TOTALLY EXTRAPERITONEAL REPAIR VERSUS OPEN (LICHTENSTEIN) REPAIR OF INGUINOSCROTAL HERNIA AT DR GEORGE MUKHARI ACADEMIC HOSPITAL

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Background

Inguinal hernia is a common surgical condition. Inguinal hernia can present with a wide variety of symptoms. It can even extend into the scrotum resulting in what is known as an inguinoscrotal hernia. At Dr George Mukhari Hospital, approximately 5–10% of patients with inguinal hernia present with inguinoscrotal hernia. There is paucity of data on the role of laparoscopy in the management of inguinoscrotal hernia.

At our institution some of the patients with inguinoscrotal hernia are offered open (Lichtenstein) repair whilst others are offered totally extraperitoneal (TEP) laparoscopic repair.

Aim

To compare the postoperative outcomes of open versus laparoscopically repaired inguinoscrotal hernias to determine whether the approach matters.

Methods

We retrospectively reviewed patients' charts to collect information on demographics, comorbidities, smoking history, type of repair, operative time and length of hospital stay from 2014 to 2017. Patients were followed up telephonically for up to 3 years. With the telephonic follow-up we collected data on the time taken to resume normal activities after hernia repair, chronic groin pain, recurrence and seroma formation.

Results

Seventeen patients were offered open repair and 13 were offered laparoscopic repair. Average age for patients offered laparoscopic repair was 48 years compared to 40 years in the open group. Operative time was longer with laparoscopic repair. In both groups, patients stayed one day in the hospital post repair. Time taken to return to normal activities was longer with open repair. Sixty-two percent of patients in the laparoscopic arm compared to 88% of patients in the open arm were treated without postoperative complications. Two patients had recurrence, two had chronic groin pain and one developed seroma in the laparoscopic group versus one who had recurrence, one had chronic groin pain and none had seroma in the open group. No mortality was observed in both groups.

Discussion

Through our study we were able to show that laparoscopic repair of inguinoscrotal hernia is safe and has comparable postoperative complications to open repair. More studies are still needed on the role of laparoscopy in repairing inguinoscrotal hernia.

THE ROLE OF PROCALCITONIN AS A DIAGNOSTIC MARKER OF BACTERIAL SEPSIS IN BURNS

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Background

Patients with burn wounds are at high risk of infection. Since sepsis contributes significantly to morbidity and mortality, early diagnosis is essential. Procalcitonin (PCT) is a biomarker released in response to inflammation and specifically bacterial infection. It may therefore be a useful biomarker for sepsis in burns.

Aim

To describe the demographics of public and private burns units in Johannesburg, to assess risk factors for bacterial infection and to correlate PCT with other septic markers to assess its value as a biomarker in sepsis.

Methods

All adult patients admitted to two Burns Intensive Care Units in Johannesburg were included in a retrospective data review. Data from the preceding three years related to demographics and sepsis were collated.

Results

Records of 178 patients were reviewed. Young black males are most commonly admitted with no significant difference between the public and private sector. The most significant risk factor for sepsis is percentage total body surface area burned ($p = 0.012$). Significantly more infections occurred in public-sector patients with the public sector treating a greater percentage of patients with more severe burns (92.9 vs. 57.9, $p = 0.001$). A rise in PCT is a significant biomarker for bacterial infection early after a burn ($p = 0.03$) but not after day eight. PCT shows correlation with CRP as a biomarker for sepsis ($p < 0.001$), but not with other biomarkers. Patients who were on inotropes also had a significantly increased PCT level ($p = 0.0001$).

Discussion

While there is some evidence to suggest that PCT may be useful as an adjunct biomarker of infection in burn patients, this evidence is limited and insufficient to change current clinical guidelines.