

## Abstracts of Papers Presented at The Regional Meeting of ASEA at Mazvikadeyi Conference Centre, Zimbabwe – April 2006.

### **Testicular Torsion: A Review of Clinical Experiences**

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**Background:** Torsion of the testis was described in 1840 by Delasiauve but it has taken a long time to get into the general awareness of doctors and be accepted as a relatively common and serious surgical emergency. The aim of this study was review the clinical features of testicular torsion, determine the pattern of pre-torsion activity, the prevalence of testicular loss according to the referral pattern and the relationship between delay in management and testicular loss.

Setting: Parirenyatwa Central Hospital, Harare in Zimbabwe

**Methods:** A descriptive retrospective study of medical records of patients with a clinical diagnosis of testicular torsion that were seen in casualty and subsequently admitted in the period January 2001 to December 2003.

**Results:** A total of 103 patients were included. The mean age was 20 +/- 5 years. There were no patients older than 40 years. The highest number of cases was recorded in the month of May. Two patients had torsion of the testicular appendage and 8 had epididymitis. In those patients where pre-torsion activity was recorded (n=35), the majority developed torsion at night while sleeping. Scrotal pain was present in 94% of the patients. Urinary symptoms were present in 8%. A history of previous scrotal pain was noted in 9%. Physical signs elicited included scrotal swelling (97%), testicular retraction (38%), erythema (36%), horizontal lie (1%), fever (17%) and tenderness (84%). Radiological investigations were not used in the acute management of testicular torsion. The patients from private health facilities had the worst outcome with a rate of testicular loss of 80%, while 38% of peripheral hospital patients lost their testis

and patients referred from family practitioners had 76% of their testis removed. The relationship between delay and outcome was demonstrated by a 25% testicular loss in those operated within 6 hours compared to 82% in

those operated after 48 hours of onset of torsion. The overall salvage rate was 38%.

**Conclusion:** The mean age was 20 years and the main symptoms were scrotal pain, nausea and vomiting. The physical signs were scrotal mass, tenderness and testicular retraction. Most patients developed torsion while sleeping. Testicular loss depends on the referral pattern. Delay in surgical exploration is directly related to testicular loss.

### **The Cost-Effectiveness of Normal Saline and Betadine on the Closure of Deep Experimental Wounds in Guinea Pigs.**

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**Background:** Normal saline and betadine are generally used in surgical practice either individually or together to clean deep wounds. Comparison of the costs and effects of normal saline and/or betadine on deep wound healing have not been done.

**Objectives:** The main objectives of this study were to compare the cost-effectiveness of the use of normal saline and/or betadine on the healing of deep experimental animal wounds.

**Materials and Methods:** Twenty guinea pigs were randomly assigned to one of four groups so that there were five animals in each group. Group A was the control, group B – normal saline, group C – betadine and group D – normal saline and betadine. Wounds measuring 2.5cm x 2.5cm were inflicted on the thoracic regions of all the guinea pigs under Ketamine 7.5mg/kg ± ether and Pethidine 1mg/kg. Animals in groups B, C and D were treated for 20 days with 1ml per day per animal of normal saline, betadine, normal saline and betadine respectively. Distilled water was applied to the wounds of animals in group A. The wound areas were measured daily by tracing them on transparent paper and counting the squares using a graph paper grid. Histology of the wounds was done on day 21 of the experiment. Market prices for the costs of normal saline and betadine were obtained and used to calculate the total costs of the solutions.

**Results:** The rate of wounds in group A was slower than in groups B, C and D [p < 0.001].

Wounds in groups B and D healed faster than those in group C ( $p < 0.001$ ). Histology supported these observations. The total cost of normal saline per wound treated for 20 days was Z\$35.00 while that for betadine was Z\$160.00 and that for normal saline and betadine was \$97.50. All five wounds in group B closed, only one closed in group C, three closed in group D and none closed in group A. The cost-effectiveness ratios for groups B, C and D were Z\$7, 00 [USD 0.008], Z\$32.50 [USD 0.0391] and Z\$160, 00 [USD 0.193] per wound closed respectively.

**Conclusion:** Normal saline alone is very cost-effective in causing rapid deep experimental wound closure. It is also more cost-effective in treating these wounds than the mixture of normal saline and betadine or betadine alone. These findings have implications on the management of deep wounds in clinical practice.

### Factors Associated with Mortality among Neonate's Presenting with Gastroschisis

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**Background:** Gastroschisis is a common major surgical emergency seen at Harare Central Hospital's (HCH) Paediatric Surgical Unit. A previous study from 1990 to 1995 showed an operative survival of 42%, which contrasts with rates as high as 97% in developed countries. This difference shows that there is potential for improvement, and the aim of the study was to identify the presenting factors associated with mortality among neonates with Gastroschisis.

**Methods:** An 8 year retrospective analytical study was carried out. Case files of neonate's with Gastroschisis presenting to the Unit during the period January 1996 to December 2003 were analysed. Statistical analysis included a univariate analysis using Chi-squared ( $\chi^2$ ), Fishers exact test, and the Students *t*-test. Stratification and analysis by Mantel-Haenszel  $\chi^2$  was done within certain homogeneous categories to describe how associations were modified. Tests of association between certain variables were also carried out. A Multivariate analysis on variables found to be statistically significant ( $p < 0.05$ ), were subjected to a multiple logistic regression analysis, giving the

odds ratio providing an estimate of relative risk, thus evaluating for the predictors of mortality.

**Results:** A total of 140 cases of Gastroschisis were analysed. **1) Overall survival:** was 35%. **2) Demographics:** On univariate analysis, delivery at H.C.H was significantly associated with a better outcome ( $p=0.049$ , OR=0.35), than at a peripheral hospital, home or clinic. After multivariate analysis, only time from birth to admission remained significant ( $p=0.026$ , OR=1.08). **3) Obstetric and neonatal:** No prenatal diagnoses were made. There was no association with mortality for the age of mother, parity, mode of delivery, Apgar, sex, estimated gestational age and birth weights. **4) Presenting condition, complications and investigations:** There was a significant univariate analysis for dehydration ( $p=0.041$ , OR=2.26), respiratory distress ( $p=0.015$ , OR=3.19), and gangrenous bowel ( $p=0.011$ , OR=5.79). Hypothermia, perforated bowel, bowel atresia, large bowel involvement, eviscerated organs, and abnormal blood parameters were non significant. Abnormal fibrin grade became significant after controlling for gangrene ( $p=0.031$ , OR=3.34). After multivariate analysis, presenting with respiratory distress ( $p=0.042$ , OR=2.82), and an abnormal fibrin grade ( $p=0.029$ , OR=3.77) remained significant. **5) Final Multivariate analysis of those variables significant in the subcategories:** Presenting with respiratory distress ( $p=0.044$ , OR=2.81), and time between birth and admission ( $p=0.002$ , OR=1.083) were found to be independent predictors of mortality.

**Conclusion:** Survival remains poor. Presenting with respiratory distress, and a longer time from birth to admission were found to be independent predictors of mortality. For every hour delay, there is an 8% estimated increase in risk of mortality, therefore the risk of mortality doubles every 12 hours. It is concluded that cases of Gastroschisis diagnosed prenatally should be delivered at HCH, and that the transfer of neonate's with Gastroschisis be immediate, and direct to HCH's Paediatric Surgical Unit.

### Arterial Pseudoaneurysms as the Initial Clinical Manifestation of HIV Infection

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**Background:** As the typical causes of morbidity and mortality in HIV/AIDS patients have been more or less controlled, new complications are

becoming evident. The unique vascular disorders such as true and false aneurysms have been increasingly reported in connection with the HIV infection. The presentation aims to summarize the available data on causal relationship of HIV infection and aneurysm formation, to discuss possible pathophysiologic mechanisms of their development, and to share personal experience in the field. **Methods and results:** Publications review shows that the following mechanisms could be implicated in pathogenesis of HIV related arterial lesions:

- 1) Direct impact of HIV to the arterial wall components;
- 2) acceleration of atherosclerotic changes;
- 3) increased vulnerability of the arterial wall to trauma;
- 4) immune mediated injury (type III cryoglobulinemia, autoimmune reactions against arterial wall components);
- 5) "mycotic" aneurysms in association with the wide range of opportunistic fungal, bacterial, viral and parasitic organisms.

The association between the CD-4 count/viral load and the complexity of pathology/surgical outcome has not been clearly established. It is not yet known whether the identical processes are involved in the development of a true and false arterial aneurysm, or what part of the arterial wall is affected initially. So far true and false HIV associated aneurysms were described in intracranial arteries (true fusiform, usually multiple), carotid, common and superficial femoral, popliteal, common iliac, superior mesenteric, renal and coronary arteries, thoracic and abdominal aorta, and in the pre-existing venous bypass.

*Pathological changes* in the arterial wall were represented by intimal fibroplasias, granulomas formation, destruction of the elastic lamina, and leukocyte infiltration with the presence of the insulting opportunistic agent. We did not observe true HIV related aneurysms. Our patients presented with pseudoaneurysms originating in subjected to the turbulent blood flow or susceptible to trauma locations like proximal portions of common carotid (2), subclavian (2), common iliac (1), common (1)

and superficial (2) femoral, popliteal (1), superior gluteal (1) arteries and infrarenal aorta (1). One patient with CD-4 count of 730 cells/ml had multiple (seven) asymptomatic thoracic and abdominal aortic and a single huge left common iliac artery false aneurysms. All patients have undergone surgery for symptomatic aneurysms. In most cases small single or multiple defects in the arterial wall were detected. They were sutured or closed with the autovenous patch. In four patients with extensive lesions the synthetic or autovenous graft interposition or bypasses were used. Only in one patient (29 years old) the resection of the diseased arterial segment was possible.

*Histopathological examination* showed evidence of atherosclerosis. However, tissues adjacent to the focal lesion were relatively spared: the gross examination did not reveal changes characteristically found in ruptured true atherosclerotic aneurysms. In contrast, in most cases the intima surrounding the defect appeared smooth with no signs of dissection and thrombosis. The openings were well centered and with thickened edges resembling the gross appearance of defects in pseudoaneurysms from penetrating vascular injuries.

**Conclusion:** So far no single mechanism can be implicated in the pathogenesis of HIV related arterial aneurysms: their nature is multifactorial with local hemodynamic conditions possibly responsible for the particular location. The direct seeding of the infectious agent initiating focal degeneration and necrosis in the atherosclerotic arterial wall and subsequent pseudoaneurysm formation is the most suitable explanation of the gross pathology observed in our patients. Other factors like trauma, local inflammatory and immune reactions may also be contributable.

### **Colonic Pseudo-Obstruction (Ogilvie'S Syndrome ): A Case Report :**

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**Background:** Colonic pseudo-obstruction , which nearly always occurs in hospitalized patients and characterized by marked colonic dilation and apparent obstruction , may appear , on physical examination and plain abdominal x-

ray evaluation , indistinguishable from mechanical obstruction .The diagnosis of Ogilvie`s Syndrome is one of exclusion and the penalty of misdiagnosis in pseudo-obstruction is an unnecessary in a poor risk patient , as evidenced in the following case report .

**Case report :** A 49-year old male , admitted a week earlier by physicians for treatment of severe gastroenteritis , was referred to the general surgeons on 12\02\05 , for suspected mechanical intestinal obstruction . History and physical evaluation revealed a middle –aged man with a history of hypertension , ischaemic heart disease , and an incomplete right-sided hemiplegia following a CVA 12 months earlier , whose vital parameters were within normal range .His abdomen was grossly distended , questionably tender with sparse bowel sounds and an empty rectum . The only abnormal blood result was a significant hypokalaemia of 2,1 mmol/L , which was corrected pre Op . Exploratory laparotomy on the following day could not demonstrate any mechanical obstruction, but moderately distended small bowel and markedly distended large bowel. Retrospectively, a diagnosis of colonic pseudo-obstruction was made , after recurrence of the apparent obstruction 4 days post-operatively.

#### Discussion and Conclusion

The exact aetiology of this condition are unknown , but autonomic dysfunction caused by sympathetic overactivity or parasympathetic interruption seem to be a common occurrence in most factors which predispose to its development .

Use of narcotic analgesics , tricyclic antidepressants , and several other pharmacologic agents , the post operative state (e.g post hip replacement) and medical conditions like CCF , diabetes mellitus and malignancies , in hospitalized patients , are conditions associated with Ogilvie`s syndrome . Patients often present with obstipation , constipation and abdominal distension . Nausea and vomiting may occur so as , paradoxically , diarrhoea .Abdominal tenderness is variably present , usually late as a harbinger of ischaemia and/or gangrene .

Plain abdominal x-rays may suggest the diagnosis and laboratory evaluation may reveal electrolyte imbalances which should be corrected before any interventions .Water soluble contrast enema or colonoscopy to rule

out mechanical obstruction may be both diagnostic and therapeutic .

Hospitalised patients may present with acute colonic pseudo-obstruction for a variety of reasons . Most of these patients can be managed successfully nonoperatively once the diagnosis is confirmed by water soluble contrast enema or colonoscopy . Successful management usually requires treatment of the underlying medical condition.

Colonoscopy remains the most reliable therapy for acute colonic decompression . However , neostigmine is effective and should be employed in patients without cardiac contraindications . Operative management is reserved for those patients refractory to medical therapy and those with peritonitis or perforation.

#### Bilateral Breast Malignancy

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**Background:** Bilateral breast carcinoma is an entity whose management has been controversial for a long time. Bilateral cancer occurs in 5 to 10 per cent of all patients with breast cancer. Historically bilateral carcinoma was regarded as little more than a curiosity, but it became recognised that the incidence was significant and that some of these cases were familial and carried a devastating prognosis. Other suggested predictors of increased risk of bilateral breast cancer are age and presence of lobular carcinoma. Risk factors for contralateral breast cancer may indicate a benefit for contralateral prophylactic mastectomy at the time of unilateral mastectomy for breast cancer. However, others advocate for random or mirror image biopsy of the opposite breast at the time of mastectomy while follow up examinations and mammography have their own proponents. Thus the issue of bilaterality in breast carcinoma has remained controversial and therefore I describe here a case of bilateral breast cancer.

**Method:** A 34 year old black female who was admitted to Parirenyatwa Hospital with bilateral breast carcinoma. The study follows up the patient from admission to discharge. It describes the history and examination findings on admission, the investigations and operations done, and the complications that arose. The patient was followed up after discharge and adjuvant therapy given is detailed.

**Results:** The patient was admitted with bilateral T4, N2 MO cancer with histology of Infiltrating Ductal Carcinoma. The case had bilateral mastectomy (toilet and simple) done with an interval of two weeks between the operations. Wound sepsis was noted as the main complication. Tamoxifen was started on admission. Radiotherapy was started two weeks after discharge. Chemotherapy with Cyclophosphamide, Vincristine and 5-Fluorouracil was only started after three months when the patient could afford it. She developed pleural effusion and jaundice after 6 months. She died on chemotherapy after seven months from admission.

### **Antithrombotic Therapy In Surgery – Evidence Based Approach.**

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Venous Thromboembolism (VTE) due to deep vein thrombosis or pulmonary embolism is a major international health problem. PE can be fatal while DVT can lead to post-thrombotic venous insufficiency and ulceration leading to poor Quality of Life and increased health costs. Most VTEs are not detected due to difficult and elusive diagnosis.

Although VTE should be an appealing target for maximal preventive effort, consensus on its prevention has been difficult because of differences in attitudes towards prophylaxis, definition of high-risk groups and prophylaxis methods chosen. VTE is rated as the 3<sup>rd</sup> most common vascular disease in the USA and PE is a leading preventable cause of death. There are reported 200,000 cases of PE annually in USA.

In France there are reported 50,000 fatal cases of PE annually. There are several anticoagulants available in the market today. Unfractionated Heparin (UFH) has been used for many years but has several limitations such as narrow therapeutic window, highly variable dose/response rate, thrombocytopenia, osteoporosis and bleeding tendencies. The new agents such as Low Molecular weight Heparins (LMWH) have been demonstrated to be safer with less bleeding tendencies, higher bioavailability, less recurrence of PE, less Heparin induced thrombocytopenia and osteoporosis and easier administration and cost effectiveness. They also allow outpatient treatment of DVT. The choice of which LMWH should be based on available clinical data from various trials for the individual molecule. In this era of Evidence Based Medicine, the American College of Chest Physicians (ACCP) has given clear guidelines in the use Antithrombotics and Thrombolytics based on Clinical evidence. The FDA states that “LMWHs cannot be used interchangeably, unit for unit, with UFH nor can one individual LMWH be used interchangeably with another.” The ACCP also states that “Properties associated with one LMWH CANNOT be extrapolated to a different LMWH. Findings of clinical trials apply only to the particular LMWH evaluated and should not be generalized to the LMWH at large. Some of these LMWHs are prepared by different methods of depolymerization and differ to some extent in their pharmacokinetic properties and a/coagulant profile, they may not be clinically interchangeable.” Enoxaparin (Clexane), the leading LMWH, has been widely studied in Surgical patients, Medical patients and in Acute Coronary Syndrome patients. Its safety has been demonstrated for more than 15 years and it has been used to treat over 130 million patients in over 96 countries worldwide.