Treatment of Hydrocephalus

When I first started to work in Harare, Hydrocephalus was a virtually unknown disorder and it was a while before I started to see my first cases. However, it was not long before increasing numbers of patients began to make their appearance. In those days we only had rubber tubes for shunting and the results of surgery using that material was abysmal. They were so bad in fact that Sir Wylie McKissock, who was at that time the premier neurosurgeon in the United Kingdom refused to give them any treatment. However that attitude had one advantage for us, it gave us an opportunity to set the standard for untreated hydrocephalus, at least in the northern hemisphere.

A study by Laurence showed that untreated nearly 50% would die by the age of 18/12 but that 44% seemed to stabilize between the ages of 9/12 & 2yrs.and that a small group (9% of all patients) were able to struggle on to the between the ages of 5 – 15. He claimed that 41% of these survivors showed normal intelligence, and 32% were educable. I calculate that this means that about 7% of the original patients were normal or educable.

The introduction of “Silastic” or siliconised rubber as it is frequently called, sparked a revolution in the treatment of this condition. Immediately it was possible to put something into the body, even into the vascular system, without provoking an adverse reaction from the immune system. This resulted in the introduction of the Spitz-Holter and Pudenz valves both of which are very familiar to us. They allowed treatment of the condition but as we all know I am sure, frequent revision is required in a large number of cases, and this can gobble up theatre time as well as the hospital’s finances.

As far as we in the third world are concerned, the introduction of these shunts was only partly a boon – the price of this equipment was well beyond the range of all of us and it was necessary to develop our own shunt. In Harare we managed to do this. We manufacture these and sell them on a “cost only” basis at £25 sterling. We have sold several thousand of these in Zimbabwe and the countries around. I do not know whether they work as well as those from the northern hemisphere but I do know that when they are inserted into infants from the more educated and better off homes they work well. There is no doubt that social factors as well as the pure mechanics of the shunt have a strong bearing on the success or failure of this equipment. So now is the time that we took a look at the results - we have a shunt which appears to work, what are we achieving in terms of quality of life and life itself?

We studied the results of 450 patients whom we examined between the years 1987 and 1992. We did our best to follow them up over the next few years. We wanted to know – how effective is the equipment? – How well did the patients do? Unfortunately 27% have been lost to follow-up and we must presume them dead, 6% died but the date of death is not known but we have made an effort to account for both of those.

The patients were divided into two groups:
   i. Those rejected for surgery (85)
   ii. Those subjected to shunting (365).

The latter were also subdivided into two groups, those above three years of age, and those below it. This was done because the pathology of those over three is different from those below three years. The latter were by far the biggest group and problem.

Rejected For Surgery. (85 Cases):
Above 3 yrs – 9 cases, 3 stabilized – attending school but retarded

**Under 3 yrs – 76 cases.**
- 37 stabilizing (29 alive, incl. 16 retarded)
- 28 technically futile (20 died, 8 lost to Follow-up
- 7 active meningitis – 6 died
- 3 no reason given

Needless to say those who were stabilizing had a better prognosis than the unstablised

**Patients Shunted (365 Cases):**
1. Patients were classified by the number of operations they had.
2. Survival was calculated from the date of insertion of first shunt.
3. Any death occurring in 3/12 was classified as a hospital death.
4. Special attention was paid to those infected.
5. Shunt removals were not classified as a surgical procedure.

**Above 3 Years (106 Patients).**
- 45 Post fossa tumours – 39 sent for further surgery.
- 22 Supra-tentorial tumours –
- 22 Meningitis 4 known alive
- 2 Cysticercosis 1 alive
- 14 Unknown cause.
- 1 Aq Stenosis

**Under 3 years (259 cases).**
- 145 had 1 procedure.
- 60 had two procedures
- 34 had three procedures
- 10 had four procedures
- 7 had five procedures
- 1 had six procedures
- 1 had seven procedures
- 1 had eight procedures

Total operations performed on 259 patients were 463 (1.8 per patient)

Short term results (did the shunt work at all?). Estimated failure rate in 3 months of between 31 and 49.8% for 1st operation. 30 and 47% for subsequent operations. Forty three patients had their shunts removed or revised for infection with a mortality of 25% (most but not all - soon after insertion, two after many months). Short term survival in 3 months was between 37.4% and 48%. Long term survival (over 2 years) between 33% and 47%

What are the patients like – what have we achieved? On review of 98 living patients, the findings were:
- Well no mental state observation - 32%
- Very retarded - 21%
- Retarded - 25%
- Normal - 11%
- Physical Disability - 8%

How did this compare with findings of other people? Fernell had mental retardation in 38% of his cases and cerebral palsy in 25%. Other series vary between 40 & 63% normal.

We have to ask ourselves what we are achieving. We have a long term survival of over 2 years of between 33 and 47% of whom at least 46% were to be retarded (if not 88%) and we only have 11% who appear unequivocally normal. This is a little better than Laurence’s figures but only just and emphasizes the need for very careful selection if we are not to waste expensive resources. Putting shunts into every hydrocephalic child is just not justifiable by the results.

**Summary**

The insertion of shunts into hydrocephalic patients has become a common operation all over the world. In the third world we have had difficulties in affording shunts made overseas and had to produce our own. This has now been achieved. Now is the time to look at the results to see what we are achieving.
A total of 450 patients with hydrocephalus were reviewed, 85 were too damaged to warrant surgery; 365 were operated upon of whom 259 were below the age of 3yrs. These 259 had an average of 1.8 surgical procedures each, between 30 and 50% failed in 3 months and required revision and between 33 and 47% survived 2 years. Of those who survived two years 46% were certainly retarded and possibly another 32% more were similarly affected. We have to look very seriously at every hydrocephalic infant presenting at hospital before subjecting it to shunting and using up valuable resources.

**Treating Spina Bifida In The Developing World: Modifications And Adaptations**

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Spina bifida (SB) is a vanishing condition in the Western World, because of folic acid fortification and abortion. In developing countries however it remains a serious and frequent pathology, which with challenges surgeons and physicians alike. With the decreasing Western expertise with SB, there is a need for establishing appropriate management guidelines for resource-poor settings for this disease.

BethanyKids has diagnosed, treated and followed up over 700 children with SB over the past 8 years. Out of this large number of cases several guidelines for management and modifications to standard protocols have emerged. These modifications and adaptations designed for the African setting will be presented, in the areas of approach to treatment, diagnosis, pre-op, intra-op and post-op care, shunting for hydrocephalus, urological management, treatment of complications, long-term follow-up, psychosocial support, and prevention. It is hoped that these adaptations will be found useful by other surgeons working in resource poor areas in providing quality effective care to children with SB.

**Gastroschisis and the Abdominal Compartment Syndrome: a New Appropriate Surgical Technique for babies with Gastroschisis.**

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**Objective:** To evaluate a newly developed surgical technique used for the treatment of Gastroschisis.

**Methods:** The new technique for the abdominal wall repair in babies born with Gastroschisis is described and illustrated. This technique was introduced in 2004 and has been exclusively applied to all cases treated since then.

The outcome of patients treated for this condition over the last 5 years is reviewed and compared to the outcome of those born with an exomphalos.

**Results:** From 2001 to 2005 42 cases of Gastroschisis were treated by the Paediatric Surgical unit at the Queen Elizabeth Central Hospital in Blantyre, Malawi. In the same time period we treated 35 babies born with an exomphalos. The two groups were compared. Male to female ratio was equal (1:1) in the gastroschisis group and 1:2 in the exomphalos group. Average gestational age was the same in both groups: 37-38 weeks. Overall mortality was markedly different: 16 out of 42 gastroschisis babies died (38%) and only 1 of 35 exomphalos patients (2.9%).

In the years 2001, 2002 and 2003 the gastroschisis mortality was around 50%. However since the new technique was introduced this has dropped to 25% in 2004 and 11% in 2005.

**Discussion:** Our impression that the new technique is appropriate and applicable in the context of the deteriorating facilities in our health service is born out by the attendant fall in mortality of the patient group. The significant improvement of survival is despite the total lack of ventilatory and nutritional support. It is interesting to note that exomphalos, which is treated entirely conservatively, has a low
mortality and does not seem to show the expected associated abnormalities.

How to improve the dismal outcome of Wilms' tumours treated in a developing country

W. Lamèris, J.C.H. Wilde, E. van Hasselt, E. Molyneux, H.A. Hey, E.S. Borgstein

Objective: To assess the results of W.T. patients in a tertiary referral hospital in a developing country and to find ways of improving long-term survival.

Methods: between January 1998 to May 2004, 40 patients with a W.T. were admitted to Queen Elizabeth Central Hospital (QECH) in Blantyre, Malawi. Their files were reviewed and general condition, preoperative investigations, management and outcome were assessed.

Results: The mean age was 4.2 years with an equal distribution between the sexes. The mean B.M.I. was 14.92 kg/m² and more than 80% of the patients were either mildly (PCV <33%) or severely anaemic (PCV <24%). One patient was HIV positive. All patients presented with abdominal distension. Half of them had additional complaints including abdominal pain, haematuria, dyspnoea, oedema and or weight loss. Thirty nine patients received preoperative chemotherapy. Three patients absconded prior to surgery and one patient was deemed inoperable. Thirty two patients underwent a nephrectomy. One case had a partial nephrectomy and 3 had unresectable tumours. There were no intra-operative, tumour ruptures. Postoperative survival was impossible to assess accurately because of follow-up problems. The 1-year survival rate varies between 20% and 50%. Fifteen of the 32 patients operated had a recurrence. Seventeen were lost to follow-up

Discussion: The patients presented in an advanced stage of the disease. The survival is disappointing and recurrence rate high. Improvement in outcome can be expected with the implementation of treatment protocols. These must include protocols on pre- and post-operative chemotherapy but also on intra- and post-operative staging.

Adherence to these protocols is a must. A pro-active follow-up is essential to measure outcome.

Audit of the Management and Outcome of Wilms Tumor in Patients Admitted to Queen Elizabeth Central Hospital, Malawi


Introduction: Wilms tumor is a common congenital malignant pediatric solid tumor worldwide. In Malawi it is the commonest renal tumor seen in children. At Queen Elizabeth Central Hospital its prevalence is surpassed by Burkitt’s lymphoma and Kaposi sarcoma. Success in the treatment depends on early diagnosis and management and a good multi-disciplinary collaboration between surgeons, pathologists, oncologists, pediatricians, and social workers.

Objective: The main objective was to audit the presentation and outcome from the management protocol of Wilms tumor.

Methodology: This was a prospective study based on data collected in all patients in whom a diagnosis of Wilms tumor was made in the pediatric department at Queen Elizabeth Central hospital between 1st May 2004 and 31st August 2006. Only patients with histologically proven tumors were included in the study.

Results: A total of 32 patients were recruited, 22 males and 10 females. The average age at presentation was 38 months ranging from 3 to 96 months. Thirteen (45%) had tumor of the right kidney, 12 (41%) of the left kidney and 4 (14%) had bilateral kidney involvement. Nineteen (60%) patients had clinical signs of relapse at the time of last follow-up and

Audit of the Management and Outcome of Wilms Tumor in Patients Admitted to Queen Elizabeth Central Hospital, Malawi
one of the two (8%) deaths occurred due to relapse.

Conclusion: Although this was a small study group, the results show that we were dealing with very advanced tumors such that there is need to reconsider the length of chemotherapy and the combination of drugs to be used prior to resection.

Congenital Diaphragmatic Hernia Presenting After 28 Days

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Objectives: To review the clinical presentation and management of patients with congenital diaphragmatic hernia who present beyond the neonatal period.

Patients: Demographic data, clinical presentation, radiologic findings, operative findings and outcome were recorded.

Results: Forty two patients out of 84 with CDH met the inclusion criteria. The median age at presentation was 10.4 months and 29 were males. 30 presented as emergencies. Respiratory signs alone were the commonest presenting feature (25 patients) and combined with gastrointestinal complaints in a further 7 patients. 7 patients presented with gastrointestinal complaints only and 2 were asymptomatic. Associated anomalies were present in 10 patients. The diagnosis was made in all with a chest x-ray. 10 patients also had a contrast meal. In 24 patients the hernia was a left sided defect, right sided in 9 and bilateral in 2. 3 patients had Morgagni hernias, 3 paraoesophageal and 1 a Pentalogy of Cantrell. Repair with prosthetic material was required in 7 patients only (primary tissue repair in 32, and 3 refused surgery). 8 patients required ventilation and there were 5 significant complications (pneumonia in 3, jejunal perforation in 1 and adhesive obstruction 6 years later in 1). There were 2 deaths.

Conclusion: Patients with CDH who present late usually present as emergencies with respiratory complaints and gastrointestinal problems. Early surgical repair is advised.

A Retrospective Analysis Of All Pediatric Patients

M Derbew

A retrospective analysis of all pediatric patients, who had surgery at the TAUH over a five-year period, was done to assess the pattern and extent of pediatric surgical problems. A total of 6070 surgical procedures were done, accounting for 31% of all operations and 33% of all pediatric admissions to the hospital. The patients were predominantly male (M:F ratio of 2:1) with a mean age of 68 months. Congenital anomalies, trauma and inflammation cause most of the diseases 37%, 17.1% and 16.8% respectively. The gastrointestinal system was most commonly affected (41.8%) followed by the musculoskeletal system (23%). The study demonstrates the presence of a wide range of pediatric surgical conditions that may cause significant health problems among children. Acute appendicitis was the commonest surgical condition, seen in 729 children (12.0%) and foreign body aspiration or swallowing in 331 cases (5.5%). Several diagnoses were related with poor surgical care like: post burn contracture (177), post circumcision phimosis (71) and chronic osteomyelitis (71). Improving management of such conditions significantly reduces morbidity and mortality.

The Role of the Surgery in Africa Reading Course in International Surgical Education

Brian Ostrow MD, FRCS(C)
Co-editor, Surgery in Africa Reading Course

Surgical education, as does its practice, requires access to the international scientific literature. However, this literature needs to be critically appraised and its relevance to the clinical context assessed. Surgeons and surgical trainees in Africa, as in other resource-poor conditions, face barriers in attempting to access the medical literature. The Ptolemy project and its related Surgery in Africa Reading Course are internet based knowledge projects which can assist in overcoming these obstacles. The paper will examine the first 16 months of Surgery in Africa Reading Course are internet based providing reviews on surgical topics relevant to African surgeons and
surgical trainees. The significance, challenges and future perspectives of this type of educational initiative will be discussed.

How Surgeons Make Decisions; Authority and Evidence
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Introduction: “A surgeon is a doctor who is able to operate, but knows when not to” (Roux). Decision-making is the most difficult part of surgery and an ability that continues to develop long after operating skills have been achieved. Teaching surgery therefore means: teaching how to make decisions. The way surgeons make decisions varies, both between surgeons but also in the same individual. The latest article read influences the opinion, but also the last patient with a serious complication brings a different view. Not only knowledge and experience, but also personality, circumstances and many other factors play a role.

Ideally, all our surgical decisions should be based on a combination of best available evidence and the specific characteristics of the patient at hand. In reality, we often rely upon the lessons of our teachers and opinion leaders in the field.

Evidence Based Medicine: Since more than 20 years, Evidence Based Medicine (EBM) has been developed. David Sackett has been one of the initiators, stating that “The answer to a clinical problem cannot be found in a textbook or at the feet of authoritative teacher”. This approach is based on evidence, obtained from Randomized Controlled Trials (RCT), and analyzed in Systematic Reviews (SR). The evidence is translated into Guidelines, with an expiry date that is evaluated at regular intervals to make sure that the most up-to-date evidence is incorporated. Implementation of these Guidelines is an aspect that requires special attention and expertise.

Evidence Based Surgery (EBS): Surgeons have been relatively slow to introduce this method into their practice. Evidence in surgery is usually of a low level. Randomized controlled trials in surgery are still the exception. Explanations: operations are not drugs, double blind operations are not advisable, placebo surgery is not considered ethical, surgeons operate in different ways, patients and surgeons have preferences that impede randomization, and certain surgical conditions are not frequent enough to allow inclusion of sufficient numbers of patients to reach statistical significance.

Is EBS also applicable in Africa? There is no reason why EBS should not be incorporated into surgery in Africa. The basic method has universal applicability, but the evidence has to be considered for the specific circumstances of the region. Patient’s characteristics, but also ‘external’ factors like referral patterns, the available technology, and professional expertise play a role. Therefore, evidence has to be collected in Africa, by setting up prospective trials, analyzing the results and developing appropriate guidelines.

Competency-based Residency Training: Is it the next advance in Graduate Medical Education?
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The goal of all graduate medical education is to ensure that the graduating physician is competent to practice in his or her chosen field of medicine. The evaluation of a resident's competency to practice, however, has never been clearly defined, nor has the fixed period of time given for residency training in each specialty been shown to be the right amount of time for each individual resident to achieve competency. To better ensure that new physicians have the competencies they need, the author proposes the replacement of the current approach to residents’ education, which specifies a fixed number of years of training, with competency-based training, in which each resident remains in training until he or she
has been shown to have the required knowledge and skills and can apply them independently. Such programs, in addition to tailoring the training time to each individual, would make it possible to devise and test individual, would make it possible to devise and test schemes to evaluate competency more surely than is now possible.

The author reviews the basis of traditional residency training and the problems with the current training approach, both its fixed amount of time for training and the uncertainty of the methods of evaluation used. Explanation of competence-based residency education, notes further that, it is possible, indeed probable, that some trainees will become competent considerably sooner than they would in the current required years of training, quotes a study in which this was the case, and explains the implications. He describes the John Hopkins encouraging experience of the neurosurgery department, which has used competency-based training for its residents since 1994. Discussion of issues of demonstrating competency in procedural and nonprocedural fields, as well as the evaluation of competency-based training, emphasizing that the latter approach is made.

HANDS ON

Michael King

Surgery, from the Greek, Hand Work, Manual dexterity and clinical judgment are required whether working with stone tools or Minimal Access Robotics. These take time to acquire. In 30 years of working in Malawi, the health services have become increasingly overworked and understaffed, due largely to the doubling of the population. Other ASEA countries have similar problems.

Training doctors benefits mainly the cities, not the rural areas. Last year there were fewer Government District Hospitals with doctors than when I arrived. Thirty years ago the doctors used to operate, rarely today. The surgery is done by Clinical Officers. Recently the only experienced referral government surgeon in the Northern Region (2 million people) for several months was a Clinical Officer. COs are the admirable people I have worked with for the past twelve years as a Volunteer. Much of my work is gynaecology but I remain a very General Surgeon. The time for surgical sub-specialities in the poorer part of the world has not yet come, but has been promoted by the richer world.

So I would say Hands Off to the rich world on this, and on recruiting health staff, especially nurses although more are lost to AIDS. Hands Off to imposed Donor Policies on HIV-testing developed in their very different disease, cultural, and economic environments.

We are in a crisis situation. The Malawi Government with donors have allocated precious funds for training many more health staff. To ensure the best use of these valuable, life saving funds, only HIV-negative trainees should be recruited. (Health staff already HIV-positive or converting later should have priority for ARVs.) Such a policy for any higher training would have the added advantage of encouraging the youth to avoid risky behaviour.

It will always be difficult to attract doctors to work in rural hospitals and the surgery will be done by Clinical Officers. Their career structure should be built up to degree level. Postgraduate extra training for Clinical Officers in several areas should be developed: (a) General Surgery including Gynaecology and Orthopaedics etc, (b) Medicine and Paediatrics, Community Health and Medicine

We must avoid Training for Export or Incapacity Building, and strive to produce more Hands On health workers in Surgery.

Attendance at a Basic Surgical Skills Course: Co-operation between COSEC CSA and Ethicon

Denis Robson, General Manager, Johnson & Johnson Professional Export Prof Jimmy James, Asst Sec General, COSEC SA

Attendance at a Basic Surgical Skills (BSS) course has been a statutory requirement of all MRCS trainees in the UK since 1996.
Ethicon has supported these courses, supplying much of the equipment and sutures, since its inception. The course has led to the establishment of Surgical Skills laboratories at the Royal Surgical Colleges where the courses are mainly held. With the establishment of the COSECSA MCS course, the BSS was adopted as part of the training course and, for the past two years, courses have been held in Nakuru, Kenya & Lusaka, Zambia with the assistance of UK surgeons from the Association of Surgeons of GB&I. Ethicon has now presented COSECSA with the equipment & consumables for Eight BSS laboratories which will allow each COSECSA country to run BSS courses independently.

A short description of the content of the 2 day BSS course will be presented followed by a discussion as to how regular holding of the course might lead to the establishment of Surgical Skills laboratories in each country.

Surgical skills training, Why not in sub-Saharan Africa
Miliard Derbew
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Traditionally, surgical trainers learn and practice surgical skills under the supervision of attending surgeons in the operating room. How ever, this Halstedian apprenticeship model may no longer be optimal, as it is increasingly difficult for the operating room to be the predominant venue for the acquisition of surgical skills. As a result, there is an increase need to develop supplementary approach for teaching surgical skills outside the operating room. Teaching technical skill in laboratory cuts back in the operating time, decrease stress of learning, avoids ethical and medico legal issues, allows and tolerates mistakes and correct performance errors and gives the opportunity to explore the limits of each techniques. Concurrent and summary feedback is widely practiced.

Rapid improvement in computer technology allows considering the use of computer assisted learning for teaching technical skills in surgical training. Studies has shown that computer based video instruction can make efficient use of faculty time and serve as a useful pedagogical adjunct for basic skills training and feedback. Knowledge building can as well be assisted by computer and communication technology as using educational CD, web based education and others.

Experience of practicing countries has shown that the technical training can be established on simple, inexpensive and portable models which are widely available.

Application of surgical skill training will help developing countries which are suffering from serious shortage of surgeons to produce more qualified surgeons in relatively less expenses. The skills lab can be established and run from resources which are readily available.

A National Survey of Surgical Activities At The District Hospital In Malawi
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Objectives: To document surgical activities at the district hospital in Malawi in relation to human and material resources available.

Setting: All district hospitals in Malawi

Materials and Methods: Twenty-one district hospitals were visited by two surgical registrars (trainees). Using a structured questionnaire data were collected regarding surgical facilities at the district hospital after interviewing key officers (district health officer, medical officer, matron or clinical officer). The operating theatre logbooks were reviewed and all recorded surgical activities for the calendar year 2003 were analyzed.

Results: All district hospitals had functioning operating theatres. None of the hospitals had a resident trained surgeon. Most district hospitals are manned by a single general doctor (medical officer) and two or more paramedical officers (clinical officer / medical assistant). In 2003 a total of 28594 surgical procedures were performed in the district hospitals. 12506 (44%) were obstetric or gynaecological procedures. Only 821 (3%) were general surgical cases.

Conclusions and Recommendations: It appears district clinicians are happy to manage emergency obstetric and
gynaecological cases but tend to refer emergency general surgical cases. Delay in operating on abdominal emergencies increases morbidity and mortality, thus there is a strong case for improving surgical manpower and skills at the district hospital so that these cases can be performed at the district hospital. To have a surgeon at every district hospital is a distant goal, however training of existing medical and clinical officers at the district hospital in management of common acute life threatening abdominal emergencies is a realistic first step.

“On the job” Surgical Training for Clinical Officers in Mission and District Hospitals in the Southern Region of Malawi.

P.W. Jiskoot, surgeon, project manager Clinical Officer training in Malawi

Although Malawi has recently (1991) started a Medical College to train medical doctors, it faces a great shortage of medical staff. The doctor patient ratio is 1 to 50,000 people. Due to the lack of Medical Doctors, the Clinical Officers are the backbone of healthcare in Malawi. Most of the peripheral hospitals are at present still managed by Clinical Officers and this situation is unlikely to change for many years to come. Many patients who present to District and Mission hospitals require treatment for elective surgical abnormalities, as well as treatment for trauma, obstetric, abdominal or orthopaedic emergencies. Often surgery cannot be safely postponed to allow their transfer to a secondary or tertiary level (central) hospital, but many District and Mission hospitals in developing countries, as in Malawi, have no specialist surgical teams and are staffed by paramedical personnel, like the Clinical Officers, who have to perform a wide range of surgical procedures, often with inadequate training.

One sustainable solution to this problem is to upgrade the surgical knowledge and skills of Clinical Officers in District and Mission (CHAM) hospitals. To upgrade their skills could mean more surgical procedures could be performed in the peripheral hospitals. The patient then can stay in his own area, does not have to travel long distances, can be treated faster and does not sustain extra costs from his already very limited financial resources. Moreover the Central Hospitals then can focus on the treatment of the more complicated diseases and on teaching the medical students. As hospitals faces shortage of Clinical Officers we offer a **on the job training**. The surgical specialist visits the 17 hospitals 1 day every 3 to 4 weeks and organizes attachment weeks for skills- and hands on training in Blantyre.

Emergency Management of Severe Burns. (A course for providers and instructors, under the auspices of the Australian and New Zealand Burn Association)

E J van Hasselt

Burns are a common problem in the region and pose a difficult challenge. Apart from the serious nature of the injury there are the discomfort of the patient, the distress of the relatives, the loss of income and compromise of their future employment and the uncertainty of their future. In addition the well known maxim that the trauma patient who is seen, assessed and managed early and competently by skilled personnel heals more quickly then the patient whose treatment is delayed is as true for the burn victim as it is for any other trauma victim.

The EMSB course is based on the principle that timely emergency assessment, resuscitation and transfer provide the best chance of recovery. The aim is to provide sufficient factual information regarding the presentation, diagnosis and initial management of patients with severe burns, to enable health workers to deal competently with this urgent and often life threatening condition. The course is appropriate for health care workers at all levels, working in the field of burn care, from members in burn units to health workers in isolated areas. An outline of the course will be presented and the contents will be discussed briefly. To set up this
course in our region the following steps have to be taken:

- 1 doctor and 2 nurses should participate in the provider’s and instructor’s/coordinator course in Australia OR New Zealand
- The ANZBA faculty then will come to the AGM of ASEA and run a provider and instructor/coordinator course
- This will be followed by a provider course run by a regional (COSECSA) faculty with the ANZBA faculty in attendance
- Finally a contract between ASEA/COSECSA and ANZBA will be entered after which both provider’s and instructor’s course may be held by the regional faculty.

Laparoscopic Surgery. Hints and Pitfalls
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Laparoscopic surgery has been practiced for 17 years in the developed world with an increasing portfolio of procedures. As a young consultant in 1989 I was in the first vanguard of Consultants having to set up a laparoscopic service and learn the new techniques without the normal apprenticeship and mentored training. The transition was not without considerable morbidity and mortality in some hands. Structured training and mentorship is essential.

This presentation covers areas of clinical benefit of laparoscopic surgery, costs of setting up a service and maintenance of equipment. Skills’ training of all the team involved with the equipment is emphasized. Potential savings of laparoscopic surgery compared with conventional investigation and surgery are discussed and pitfalls highlighted.

It has often been thought that there is little place for Plastic/Reconstructive Surgery in sub Saharan Africa. Our experience over the years has proved this to be untrue. In Eastern Africa which is as big as the whole Western Europe more than 200 million people live. It is believed that about two million people in this region are disabled as a consequence of physical impairment. Parts of these disabilities are congenital malformations such as cleft lip/palates, hand deformities etc. Others develop due to complications of infectious diseases, such as polio and leprosy, or as a consequence of injuries e.g. burns, work place trauma and road traffic accidents. Diseases that have long been a rarity in Europe are still common in Africa. Cancrum oris is an example. Other problems such as keloids afflict our dark skin. Chronic leg ulcers, often because of inadequate care, are seen frequently and these represent the commonest surgical problems seen in the rural settings. Reconstructive surgery corrects most of these disabilities mentioned above. The reconstructive surgery services that are available in the region today are few which greatly limit the number of beneficiaries. Those who could have been made productive become life time dependents.

In the whole region there is no single postgraduate training program in reconstructive surgery and the total number of plastic/reconstructive surgeons practising is less than 20.

Reconstructive surgical pathologies which are prevalent in our region which I have a fair amount of personal experience and the challenges will be discussed during the session. Similarities and major differences in Reconstructive surgery as seen and practised in the developed countries and as seen and practised in developing countries will be discussed.

Plastic Surgery in Sub Saharan Africa
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Prospective Follow Up For Post Oesophagectomy Patients And Variables

Likely To Influence Follow Up At The Kenyatta National Hospital, Nairobi.
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Though the operative mortality for resection of oesophageal malignancy has fallen significantly over time, the overall postoperative survival has remained fairly constant irrespective of surgical techniques; preoperative disease spread being the main independent prognostic indicator of survival.

This was a five year prospective review, 2001 to 2006, of the follow up of post oesophagectomy patients in Nairobi, evaluating follow up and variables associated with this.

Materials and Methods:
All patients with oesophageal cancer, discharged post oesophagectomy, from the cardiothoracic unit were included into the study. Preoperative data and post discharge data were recorded; data analysis reviewed the follow up pattern and the relationship of follow up to selected preoperative variables.

Results:
One hundred and seven patients were included into the study. The one, three and five year follow up rates were 30%, 15% and 5% respectively with a trend of shorter follow up noted for the presence of preoperative overweight, (<25Kg/m²), postoperative anastomotic leak and signs of nodal spread of disease. These trends were however not statistically significant. Only the presences of low preoperative serum protein and albumin levels were associated with a shortened follow up reaching statistical significance. Seven patient in this series developed recurrent signs of malignant disease.

Discussion:
The trends of association of preoperative variables and postoperative survival observed in this study were similar to the international literature, disease spread having an influence on the postoperative survival pattern. Similar to reports in the literature, providing no nodal spread has occurred, patients having transthoracic oesophageal resection in this study showed no long term survival advantage over trans-hiatal resection. Even though this study failed to achieve statistical significance associating disease spread with reduced survival, the author concludes that improved preoperative staging remains an important goal for better postoperative survival in this region as a whole for patients post oesophagectomy.

Sterilized Mosquito Net versus Commercial Mesh for Hernia Repair – An Experimental Study in Goats in Mbarara/Uganda
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Background: In industrialized countries alloplastic meshes are routinely used for hernia repair. However, in developing countries commercial alloplastic meshes are rarely available or affordable. The objective of this study was to compare textile properties and tissue response between commercial polypropylene mesh and sterilized nylon mosquito net.

Methods: Textile properties were examined using standardized laboratory techniques. In an animal model one mosquito net and one commercial mesh (each 5.5 x 8cm) were implanted onto the posterior layer of the rectus sheath in twelve goats. Wound healing was clinically assessed. Animals were sacrificed after four or 16 weeks and
histological analysis of the tissue response was performed.

Results: On textile analysis mosquito net was thinner and lighter, but far weaker than commercial mesh. All wounds in both groups underwent primary wound healing without relevant complications. Foreign body granulomas in the mosquito net group contained a higher proportion of inflammatory tissue (32.7% versus 22.1% partial volume after 16 weeks) and more giant cells (3.1 versus 1.7/10 granulomas after 16 weeks) with a significantly lower partial volume of foreign body (23.2% versus 36.9% after 16 weeks). Partial volume of fibrotic tissue was similar. Sterilized nylon mesh was approx. 1000-fold cheaper than commercial polypropylene mesh.

Conclusions: Commercial polypropylene mesh was superior concerning strength and extent of persisting inflammatory response. However, the findings indicate that sterilized nylon mosquito net might potentially serve as a cheap substitute if an alloplastic mesh is needed, but no commercial one is available. The main advantages of mosquito net for resource-poor countries (price and availability) justify further clinical studies of which we present initial results.

PHS HERNIA MESH REPAIR
Raymond A. Dieter, Jr., M.D.

Introduction: Inguinal hernia occurrence continues to be a frequent surgical consideration. Operative timing and type of procedure can also engender a great deal of discussion.

Methods: In 2000, the author became familiar with the PHS (Prolene Hernia System) double-layer mesh. Since that time the majority of his outpatient remote surgicenter open inguinal repairs have been performed utilizing the PHS mesh. A review of 235 hernia patients receiving the PHS mesh has now been performed.

Results: All patients operated on at two non-hospital remote Surgicenter were reviewed. Considerations including age, sex, side, primary or recurrent, surgical time, hernia size, direct or indirect hernias were tabulated. Postoperatively, ecchymosis and swelling were frequent but subsided rapidly. During the follow-up period, no recurrences have been noted.

Conclusions: The PHS mesh hernia repair represents an excellent technique with little chance of recurrence.

The promise of laparoscopic colonic resections
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Laparoscopic surgery is rapidly growing in industrialized countries. Advocates claim that it is less invasive, causes a lower morbidity, and is even cost-effective due to shorter hospital stay. However, a recent randomized single-blinded trial in Denmark has proven that with the help of the multi-interventional concept of "fast-track surgery" recovery after conventional colonic resections is as rapid as after laparoscopic surgery. There may still exist additional advantages; amongst these cosmetic appearance, less long-term morbidity (incisional hernias, intraabdominal adhesions etc.), even cost-savings due to less wound infections are worth mentioning. Nevertheless, these still remain to be proven in well designed prospective trials. The author presents some technical hints as well as a critical appraisal of the pros and cons for laparoscopic colonic resections. The promise of laparoscopic colonic resections is still unfulfilled but the author is optimistic that we will see progress in the future. However, the question of cost-efficiency of laparoscopic colonic resections in different countries and health care systems around the world will depend to a high degree on the relative costs of labour force versus the costs of imported materials.

Laparoscopic Surgery At Beira Central Hospital
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Beira Central Hospital

Background: This study gives an overview of the operations performed by minimal access surgery at Beira Central Hospital during the period August 2005 to August 2006.

Methods: Data was collected from the registration books of the operation theatre and patient’s files.

Results: There were 47 female and 12 male. The peak incidence was between 41 and 60 years. 59 operations were done. Cholecystectomy was the most common operation done with a total of 39 cases, 4 of them as acute cholecystitis. The other operations done were: Appendectomies (4) lysis of adhesions (3), excision of ovarian cyst (3), liver biopsy for cirrhosis (4), tube ligation (1), ruptured ectopic pregnancy (1), removal of foreign body, (2), abdominal tumour biopsy (2). Laparoscopic surgery reduced blood loss and pain, and result in faster return of bowel function and earlier resumption of normal diet. Hospital stay was up to 24 hours. None of the laparoscopic procedures were converted to open.

Conclusions: Laparoscopic surgery takes sometimes longer than open surgery but offers several short-term benefits.

Prospective results following surgical repair of obstetric fistulas in East-African women.
T.J.I.P. Raassen, E.C.G. Verdaasdonk, M.E. Vierhout

Objectives: To evaluate social background, causes, complications and results of surgical repair of obstetric fistulas (OF) in women in East Africa.

Study Design: Prospective collected data of women operated on for the first time between January 2001 and August 2003.

Results: In 639 women 581 (90,0%) had an OF. Mean age was 27 years; 70% was ≤ 150 cm; 45,1% was primigravida; 30,8% had some form of primary education and 40,6% lived separate of their husband. Mean duration of leakage was 36,4 months and the perinatal survival was 11,5%. Overall closure rate was 93,8%. Women operated ≤ 3 months after injury had a better outcome for the closure rate (93,9% versus 87,0%, p= 0.043) and more of these women lived with their partner (67% versus 55%, p = 0.037)

Conclusion: East-African women with OF share features with the rest of the continent. Early treatment (< 3 months) improves surgical results and the social status of the woman.

The Difficulties in improving Urology In Iraqi Kurdistan
Christine Evans, retired urologist North Wales, UK. Committee member of Urolink [BAUS] christinemaryevans@hotmail.com

I first visited Kurdistan in 2002, before the present Gulf war. I assessed the needs of the urologists that were there at that time, 7 in number, in three universities. They were not equipped to do endoscopic surgery; there were resectoscopes, but not used and no video teaching aids. Urethral strictures were dealt with purely by dilatation, mostly without anaesthetic. The open surgery however was and is excellent. Since that time I have visited in 2004 and 2005 taking PCNL equipment and endoscopes including optical urethrotomes and ureteroscopes, numerous bits of endoscopic equipment like baskets and double J stents, kindly donated by various equipment firms and 2 Swiss lithoclasts. The expertise has markedly improved due to much improved funding, double the number of trained urologists and a general increased ability of the Kurdish urologist to travel overseas. The standards may have improved but the maintenance of equipment is still poor and the radiologists are unwilling to help with the interventional radiology and the radiology equipment in theatre has much to be desired.

This presentation will tell of the trials and tribulations of getting equipment over borders, the pleasure of working with surgeons and trainees so willing to learn and how to deal with the Turkish army at the border posts.
Determining A Predictor Of The Outcome Of Severe Head Injury Patients At Kenyatta National Hospital
L.K Mbau, N.G. Obonyo, S.O. Kwamboka, S.W. Gitome

Background: Severe Head injury is a significant cause of morbidity and mortality in a developing country like Kenya. Past studies have provided evidence to support the use of Intracranial Pressure (ICP) monitoring as a central part of critical care management for the severely brain-injured patient and indeed this has been associated with a substantial lowering in mortality. Currently, the trend is toward maintaining an adequate Cerebral Perfusion Pressure (CPP) as according to recent studies, ICP measurement per se has not been conclusively shown to alter outcome in the victims of severe head injury. Nevertheless, ICP measurement is still necessary to accurately determine the CPP and this can be derived from the formula:

\[ CPP = MAP - ICP \]

Where, CPP-Cerebral Perfusion Pressure
MAP-Mean Arterial Pressure
ICP-Intracranial Pressure

It is thus imperative that the severely head-injured patient be managed in an Intensive Care Unit (ICU) or High Dependency Unit (HDU) set-up where the ICP can be closely monitored and controlled round-the-clock

Setting: The study took place at the ICU/HDU of Kenyatta National Hospital (KNH), Nairobi, Kenya. We chose KNH because of proximity and time effectiveness since it is the hospital where we are currently based for our undergraduate studies. We also focused on ICU/HDU because all patients admitted there with SHI have a Glasgow coma score of <8/15 which is in keeping with our inclusion criteria alluded to below.

However there was a substantial number of patients with a GCS <8/15 admitted with severe head injury to the surgical wards due to lack of beds at the ICU/HDU but were beyond the scope of this study as they may not have all the relevant data required.

Scope Of Study: This study focused on patients admitted to KNH HDU and ICU with Severe Head Injury (SHI) between January 2000 and December 2002. Patients from all age groups, both male and female who were alive or dead were considered.

Justification: Patients admitted with Severe Head Injury (SHI) constitute a large proportion of patients in both the surgical wards and the ICU/HDU of KNH. Monitoring of ICP is critical in the management of patients with SHI and it influences the outcome. However KNH lacks the resources required to set up an ICP monitoring system and this hinders effective management of these patients. The results of this study will be used to establish if there is a correlation between MAP and outcome of patients with SHI. This may form a basis for effective monitoring and probable prediction of outcome of these patients in the absence of a proper ICP monitoring system in a resource-poor setting.

Inclusion criteria: All patients admitted to KNH-ICU/HDU with GCS less than 8/15 with recordings of Blood Pressure (BP), Respiratory Rate and GCS at admission between 1st January 2000 and 31st December 2002, where we were able to work out the MAP and Revised Trauma Score(RTS).

Exclusion criteria
- All patients admitted with SHI to wards other than KNH-ICU/HDU regardless of the GCS.
- All patients with SHI seen at KNH-ICU without recordings of BP and GCS at admission between 1st January 2000 and 31st December 2002.

Broad Objective: To determine the correlation between the MAP and the outcome of patients with SHI.

Specific Objectives were:
1. To determine the initial systolic and diastolic BP in patients with SHI at admission in order to calculate the initial MAP in these patients.
2. To determine how MAP affects Glasgow Coma Score (GCS).
3. To determine the Glasgow Outcome Score (GOS) in patients with SHI.
4. To determine the correlation between Revised Trauma Score (RTS) and patient outcome.

**Study Design:** A three year descriptive retrospective study was carried out at KNH between January 1st 2000 and December 31st 2002. The files of patients presenting consecutively with SHI, admitted to KNH ICU and HDU were reviewed and relevant data was extracted.

**Data Analysis And Management:** Data was analyzed by Microsoft Windows Excel and Spread Sheet, SPSS computer software. Ratios (percentages) were used to summarize discrete statistics; means (central tendency) and standard deviation (spread) were used for continuous variables. Data was presented using graphs and charts.

**Spinal Meningioma: Review of Surgical Management And Outcome**

*N C Mkandawire*

Spinal Meningioma: represent 25 to 46% of all tumours of the spine. They are typically located in the intradural, extramedullary space. The thoracic spine is most commonly involved. There lesions mostly occur in middle aged women. Case reports of spinal meningioma patients treated at the Queen Elizabeth Central Hospital is presented to discuss mode of presentation, tumour characteristics, surgical technique, complications, functional outcome and rates of recurrence after excision.

**Development and initial testing of an economical vacuum dressing for use in Malawi**

*Karl Alsey, Steve J Mannion*

The use of vacuum dressings for the treatment of wounds has been pioneered by the global medical technology company Kinetic Concepts Inc. (KCI). Their V.A.C. (Vacuum Assisted Closure) Therapy system has proven successful in stimulating healing in a wide range of wounds. Unfortunately the cost of their system prohibits its use in a setting such as Malawi, where high levels of trauma result in large numbers of wounds which could potentially benefit from vacuum dressing therapy.

We set out to develop an economical alternative to the KCI V.A.C. Therapy system. A working prototype was produced which has the principle functional attributes of the V.A.C. system but a fraction of the cost. We went on to test the prototype on an infected ischial sore in conjunction with a mixed sugar dressing. The results were encouraging, with significant granulation and reduction in wound size in just a few days.

**A system for radiological classification of childhood haematogenous chronic osteomyelitis**

*Henry Wynn Jones, Jim Harrison*

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Haematogenous chronic osteomyelitis in children continues to be a significant cause of morbidity in the developing world. The classification system of Cierny is widely used for the classification of chronic osteomyelitis in adults, but there is currently no system for use in children. We have developed a classification system based on a retrospective review of 67 consecutive cases of haematogenous chronic osteomyelitis treated at BCH. The classification is performed using over penetrated plain radiographs of the affected bone. The classification divides the types of osteomyelitis into three main categories: Sequestrum/Involucrum, Sclerotic and Brodies abscesses.

The sequestrum/involucrum category is subdivided into subtypes in order if increasing difficulty of management: Cortical sequestrum, Sequestrum with structural involucrum, Sequestrum with sclerotic involucrum, Sequestrum without structural involucrum, Metaphyseal/Physeal (any with extensive metaphyseal involvement and physeal damage). Classification using the radiographs is aided by the use of a specifically design flow chart.

We plan to evaluate the inter- and intra-observer reliability of the classification.
system. Once this has been performed then we propose to undertake a prospective study of the management of childhood chronic osteomyelitis, with treatment guided by a management protocol directed by the classification system.

A joint replacement register for Africa: an update on the Malawi National Joint Registry Project

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In developed countries there are a number of joint replacement registries. These registries, have led to a wealth of evidence to guide best practice. In Africa, the volume of joint replacement surgery is increasing. However, the indications for surgery and the age of patient are considerably different to those in the developed world, as is the demand placed upon the prosthesis (e.g. toileting). It is therefore vital that we aim towards a hip registry for Africa.

In Malawi, we started a pioneer registry in 2005 and it includes all joint replacements that have been performed in the country. Data gathered includes: age, sex, indication, type of prosthesis, surgical approach, bone graft requirements, cement types, pressurizing systems, Harris hip score and thromboprophylaxis. Unique to the Malawi National Joint Register, all patients are counseled and encouraged to test for HIV, allowing analysis of the effect of HIV on successful joint replacement. Currently, the joint register has 7 knee replacements and 46 hip replacements. The hip replacements were performed by 4 different surgeons. The indications for hip surgery were avascular necrosis (22/46, 48% ), osteoarthritis (13/46, 28%) and other (11/46, 24%) including one case of TB hip, one of Giant cell tumour of the hip and one very young patient with sickle cell disease.

We report an update of the data from the Malawi joint replacement experience, and report the process for setting up a national joint registry for other African countries performing joint replacement to utilise. We have recently set up a special follow-up clinic where all the patients who have had joint replacement are being followed up. Were other countries to follow suit, a united African registry may become a reality.

The SIGN nail, a prospective series of 34 cases

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The gold standard treatment for most femur and some tibia shaft fractures is locked intramedullary nailing. Locked nailing allows control of length and rotation, and early return to weight bearing and joint movement, when compared with conservative method of treatment. For some complex comminuted fractures in particular it can be difficult to maintain length and alignment with conservative treatment. Non union is also well treated with reamed intramedullary nailing. In our environment the majority of lower limb fractures are treated conservatively on traction or in POP casts. Lack of equipment and expertise contribute to this choice of treatment. The SIGN nail is a useful method of locked intramedullary fixation in this restricted setting and the same nail can be used for both the femur and the tibia. A prospective series of 34 SIGN nails in 34 patients is presented. There were 19 cases of non-union, 4 of malunion and 11 fresh fractures. Thirteen nails were for tibia fractures and 21 for femur fractures. There were 4 deep wound infections, 3 occurred in patients who had had previous treatment with an external fixator for several months.
and one in an elderly man who had had an infected skeletal traction pin previously. Knee stiffness and limb shortening was a significant problem particularly for the non union femur cases. There have been no implant breakages. The SIGN nail is a useful implant in our environment particularly for more complex cases which cannot be treated conservatively.

Long Term Outcome Of Elastic Stable Intramedullary Fixation Of Femoral Fractures In Children.
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Background
Elastic Stable Intramedullary Fixation (ESIF) of fractures of long bones in children has been practiced in our centres since 1993. Traditionally, some degree of shortening was aimed for in the closed treatment of fractures of the femur in children in view of compensatory growth. Concern about the growth after anatomic reduction of the fracture prompted long term follow-up with special attention to leg length discrepancy (LLD) in these children.

Patients and methods
Between 1993 and 2003, 71 children (43 boys, aged 3 to 16 years), with femoral fractures were treated with ESIF. Twenty-four had multiple injuries, five had an open fracture. Data about mechanism of injury, post-operative complications, length of stay and the most recent data regarding leg length were analysed.

Results
Mean length of hospital admission was 9 days for children with isolated fractures and 12 days in case of multiple injuries. Complications were: superficial wound infection in two; pain around the distal end of the nails in seven. The ESIF-nails were removed six month after insertion. At that time, 10 patients (14%) had a LLD of more than 10 mm. Two years after the injury, seven children (10%) had LLD >10 mm. At an average of 12 years, this percentage had decreased to 7 (5 patients).

Conclusion:
ESIF is a reliable method for the treatment of femoral fractures in children, with a significant reduction in hospital stay, and a low complication rate. Although a second operation for removal of the nails is needed, this procedure can be performed in day care. Permanent leg length discrepancy was seen in about 5% of the cases.

Closed Reduction and Internal Fixation with Percutaneous Screws of Distal Femoral Epiphyseal Fractures Salter-Harris Typ 2.
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Introduction
The objectives of treatment of separation of the distal femoral epiphysis are to obtain and maintain satisfactory reduction with a minimal invasive simple technique.

Methods
Young adolescent patients with a typical triangular metaphyseal spike in the x-ray. Closed reduction under image intensifier. Temporary fixation with K-wire. and definitive reduction with percutaneous lag screw. Passive mobilisation after 10 days.

Results
In four adolescent patients with typical triangular shaped Salter-Harris 2 fractures closed reduction and internal fixation with percutaneous screws were performed. In all patient closed reduction was possible and with the percutaneous inserted lag screw the reduction was almost anatomically achieved. Postoperative early passive mobilisation.

Conclusion
If closed reduction is possible, internal fixation of the fracture is achieved with a relatively simple percutaneous approach. The study is in process and we will have soon larger numbers.

Surgical treatment of neck of femur fractures without the use of an image intensifier.
There are a variety of well established methods of surgical fixation of neck of femur fractures using an image intensifier. These include cannulated hip screws, a dynamic hip screw or one of a variety of other implants. In the absence of fluoroscopy open reduction of the fracture is required as well as a more extensive approach to ensure accurate insertion of screws into the femoral head. I present 14 cases of open reduction and internal fixation of neck of femur fracture, many after considerable delay from the time of injury. Four cases were a combined neck and shaft fracture. The implants used include cannulated screws (5), dynamic hip screw(5), reconstruction nail(3) and in one case a free fibula graft plus cannulated screw. In two cases revision surgery was required because of mal placement of one of the screws.

There were no post operative infections. Cases have been followed up for between 4 months and 2 ½ years. To date all fractures are uniting. One case has shown evidence of avascular necrosis and further cases may become apparent as follow up continues. The open technique was found to be technically demanding and extensive dissection of the femoral neck may be an added risk factor for AVN.

The dynamic hip screw is probably a preferable implant in cases that present late due to its greater strength combined with the likelihood of delayed union of the fracture.

Anterior Transfer of Tibialis Posterior through the Interosseous Membranes in Post Injection Drop Foot
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Post injection drop foot constitute 7.6% of paediatric orthopaedic pathology seen in our unit. It commonly results from intragluteal injection with quinine in the treatment of malaria. The patients present with equinus or equinovarus foot deformity. Because of abnormal weight bearing, the deformity usually worsened with age. Anterior transfer of the tibialis posterior to the dorsum of the foot through the interosseous membrane has been described before and good results reported. The tendon is either transfixed by tenodesis to the cuneiform or cuboids. In our series the latter method was used.

This is a follow up of 30 patients who had surgeries at least 18 months after the injection and muscles power of the tendon transferred ranged from 3 to 5. We used three incisions of approximately 4cm each instead of four. Postoperative plaster of Paris cast for 6 weeks and ankle foot orthosis were used. We evaluated for correction and ability of the transferred tendon to actively dorsiflex at the ankle joint. Nineteen patients had good results 8 fair and 3 poor there was no neurovascular deficit. The purpose of this paper is to outline our outcome and technique of anterior transfer of the tibialis posterior through the interosseous membrane.

Gluteal Fibrosis Cases Seen in Kumi Hospital, Uganda
John Ekure (Mmed Orth Mak)

Twenty eight patients with bilateral gluteal fibrosis seen in Kumi Hospital in Uganda from August 2004 to May 2006 are presented. In all cases, the severity of the condition depicted the clinical picture. All the patients with an exception of two had been previously treated with IM Quinine; one was treated with IM Penicillin and the other with Streptomycin.

One case had both gluteal fibrosis and paralytic drop foot. The treatment in all of them was incision of the fibrous tissue followed by squatting and sitting exercises. One of the cases was complicated by foot drop following sciatic nerve injury but
recovered after 6 months. Only 2 cases were complicated by sepsis. Gluteal fibrosis is a muscle disorder marked by intramuscular fibrous bands within the substance of the gluteal muscle. These bands lead to secondary contractures that affect the function of the hip joint(s).

**Therapeutic Applications of the Ilizarov Method**

*Kamau P. Njoroge, Neluheni E, Birkholtz Franz.*

The Ilizarov technique which employs the original Ilizarov apparatus and its improvements -the Ilizarov method provide a very versatile tool in reconstruction, not only of long bone defects axial skeleton deformities but also soft tissues. The most commonly employed uses are limb lengthening (distraction osteogenesis), bone deformity correction as seen in malunions, stabilizer frames in non unions, resistant or late presenting club foot as well as severe limb trauma. There are however many other indications including soft tissue contracture corrections involving joints, as skin expander, skull defect bridging, and maxillofacial surgery.

**Discussion:** It is a very useful tool in managing post trauma long term complications. There are however as expected complications and the surgeon needs to always practice vigilance and regular follow up preemting potential complications. We are presenting 4 case reports showing varied applications of the method and some expected difficulties and complications.

**Case 1**

Young lady with a 15 cm tibial defect post trauma. Treated with Ilizarov ring fixator with bifocal bone transport, later fibula transposition started with concomitant tibial gap distraction. Status; synostosis and fibula hypertrophy.

**Case 2**

Young male patient with severe post burn fixed flexion contractures of knee and equinus at ankle with mild rocker bottom foot deformity Sheffield ring fixator used, full knee extension achieved, ankle equinus corrected.

**Case 3**

Young man with hypertrophic non union tibia with mal-alignment following severe open fracture. Gradual angular correction with Ilizarov frame. Successful union and straightening achieved.

**Case 4**

Middle aged lady with atrophic non union with overlying scarring and a bone defect, successful bone transport and union achieved.

**Permanent Civilian Musculoskeletal disability following injury-17 Year trends.**

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**Objective:** This study was aimed at determining the magnitude of civilian permanent musculo-skeletal disability from injuries and identifies trends observed in the proportions of major causes of the disability in the last two 'decades'.

Settings: Addis Ababa University, Medical Faculty, Department of Orthopedic Surgery, Tikur Anbessa Hospital

**Methods:** This was a retrospective analysis of Orthopedic Medical Board proceedings, Jan.1988-Jan.2005. Medical records and medical board proceeding decisions of 3,687 applications for assessment of permanent musculo-skeletal disability following injury were audited. Non- civilian applications, disabilities not from injury and other forms of disability were excluded from the study.

**Results**
Males accounted for 81% of cases. The majority (87.4%) were middle aged in the working age (20-60 years). The mean age was 28 year. Road traffic crushes were the commonest (47%) cause of injury followed by machine injury (18%) and fall injury (17.8%). The commonest sites injured were the hand (26%) and the leg (12%). Sixty percent of the applications were made within less than six months of the injury and 93% (450/484) of the reapplications were from this group. The board awarded whole-person disability percentage of less than 10% for 2,105 (57%) and of these 258 (7%) was awarded 'zero'. It also recommended resumption of the previous 'Normal' work in 2,655 (72%) of the applications. Over the decades, increasing trend in proportion of permanent musculo-skeletal disability applicants from road traffic accidents, machine injury and fall was observed. On the contrary, proportion of civilian applicants of permanent musculo-skeletal disability from explosives and assaults have shown a decreasing trend.

Conclusion
Number of applicants for disability assessment is increasing and most of the causes are preventable. Road traffic injuries, machine injury and falls (in a respected order) are commonest causes of permanent civilian musculo-skeletal disability applications. Trends in proportions of causes of permanent musculo-skeletal disability change over a period. Pre-screening may save the medical board's time and applicant's money.

Trauma, a new cause of death, disability and economic loss in Juba

Trauma: A New Cause of Death, Disability and Economic Loss.
Dario Kuron Lado
Juba South Sudan.

Juba is a capital of South Sudan, where the Government of South Sudan (GOSS) and the central Equatorial State (CES) are located. For the last 22 years, during the liberation struggle of people of South Sudan, Juba was reduced to a mere village and a prison, where entry or exit were extremely difficult to the indigenous people and a lot of people died as the direct result of the merciless war and indirectly from its effects e.g. hunger, loss of health care etc. In early 2003; i.e. before the Comprehensive Peace Agreement (CPA) was signed, the population of Juba was nearly 250,000 people compared to 1.5 million people in August 2006. The number of vehicles in Juba has increased so that road traffic accidents are much today. Other violence like gun shot injuries, civilian domestic violence etc are also common. These are the pressing concern and challenges to health authority, taxing so heavily on the limited resources for rendering health service in post war South Sudan. In this prospective hospital based study conducted in Juba Teaching Hospital in the period of eight (8) months (Jan. 2006- Aug. 2006), 652 patients all suffered trauma and sustained different patterns of injury were evaluated. Males were 58% (378) and Females 42% (274). Road Traffic Accidents (RTA) constituted the commonest mode of injury 60% (391) followed by gun shot 24% (157), domestic violence 10% (65) and other causes like falls from trees; accidents fall of elderly people etc. which constituted the rest 6% (39).

Of the patients who had RTA, 50% (235) sustained long bones fracture (Femur, Tibia, hummers, forearm bones etc), 8% (31) suffered pelvic fracture, 2% (8) had spinal fracture, whereas 12% (47) of the patients sustained severe head injury. Multiple ribs fracture was found in 6% (23) and 12% (47) had fracture of short bones of hands, feet, as well as the clavicle. Speedy driving was the cause of accident in 90% (352) of RTA victims and other factors were incriminated in 10% (39). Mortality rate was 12% (78) among the studied population, mostly due to severe head injury. With all these and the limited resources in the war torn Juba town: preventive measures have to be launched if the situation is to be salvaged.

Mirror Hand (Ulnar Dimelia)
Muteti EN; Carter LL.

Summary: This is a case report of ulnar
dimelia (mirror hand) and we intend to discuss classification systems of ulnar dimelia, variations, surgical techniques and the technique used in this patient.

Case Presentation
We are presenting N.C. a 1 year 4 months old baby girl seen at the AIC-CURE International Children's Hospital, Kenya, born with 8 digits in the left hand. Examination revealed a normal baby girl without any other congenital anomalies apart from the left upper extremity. There was duplication of 4 fingers on the radial aspect of the hand and no thumb. The wrist movements were normal. The left forearm was shorter than the right forearm. Flexion of the elbow was 0 to 45 degrees and 10 degrees of supination/pronation. Radiographs showed duplicated ulna, no radius and 8 fully developed fingers.

Treatment: The mother was concerned about the grotesque appearance of the hand and surgery was elected. It was noted that the web space between the ulnar index finger and duplicated radial index finger was wider than the others. The duplicated radial index finger was of adequate size, pronated about 35-45 degrees and with good flexion and extension; and suitable to be used for pollicization. Radial digits 1, 2 and 3 were to be deleted. The incision was made along the thenar crease and around the base of the radial index finger. The 3 radial digits were filleted out. Radial digital vessels to the ulnar index digit was divided and ligated to allow pollicization of the radial index finger. A shortening osteotomy of the radial index metacarpal was done through the base and at the distal physis. The radial index digit was rotated 140 degrees and the distal epiphysis was volar flexed and fixed to the base of the proximal phalanx. The flexor tendon of the radial digit 1 was transferred to the radial index digit 4 to become the abductor pollicis longus. The dorsal interosseous muscle was transferred to the proximal phalanx to become the abductor pollicis brevis and the volar interosseous became the adductor pollicis. Redundant skin was excised and incision closed around the base of the pollicized radial index in good thumb position.

Discussion: Mirror hand, also known as ulnar dimelia, is an extremely rare condition with reported incidence of 60 in 300 years. It is usually characterized by the presence of duplication of the ulna. There is no radius and almost symmetrical duplication of the ulna digits around a central digital axis producing seven or more digits. This patient had 8 digits in total.

Buck-Gramko recommends proximal resection of the radial ulna to improve elbow motion. This was not of immediate concern to the mother in our case. He also recommends pollicization of the radial long finger and deletion of the radial index finger. In this patient, the radial index digit was more functional and was therefore pollicized. The ulnar small finger was of good function and position and was therefore retained.

Variants have been reported with a radius and ulna; triplication of the hand among others.

Management of Anal Fistula. The Durban Experience.

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Introduction: Inappropriate management of complex anal fistulae leads to increased morbidity, poor quality of life and inevitable recurrence of fistula.

Patients and methods

This is an ongoing prospective study of all patients referred for the management of anal fistulae to the Colorectal Unit at the University of KwaZulu-Natal, Durban, starting from 2002. Patients were assessed and underwent surgery by one surgeon. Management of complex fistulae in Durban involves fistulectomy if no internal opening can be identified and insertion of a Seton if there is an internal opening.

Results
Thirty two patients (6 females) were referred for the management of fistulae; Median age was 40 years (range 30-64). Twenty three patients were found to have complex fistulae. The rest did not have complex fistulae but they were referred either inappropriately as complex fistulae or because the referring doctor could not decide complexity of the fistula (8 with simple fistulae and one with hidradenitis suppurativa).

Of the 23 patients with complex fistulae, 10 had insertion of Seton, 8 had fistulectomy, 2 patients had a combination of procedures (fistulotomy + Seton in one and fistulectomy + fistulotomy in one) and one patient with a fissure-fistula underwent fistulotomy. Two other patients underwent special procedures (one patient had exploration and drainage of a chronic abscess and another underwent mucosal advancement flap for a recto-cutaneous fistula. Healing time was 3-13 weeks. The eight patients with simple fistulae underwent fistulotomy; one patient with hidradenitis suppurativa underwent excision.

**Conclusion**

Identification of complex fistulae is still a problem among practicing medical personnel. They should be managed by experienced surgeons. The approach used in Durban is effective in the management of fistulae.

**Colorectal cancer in patients aged 40 years and younger at a tertiary hospital in Kenya, 1993-2005**

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Background: The onset of colorectal cancer appears to be in two to three decades earlier in developing countries in comparison with Western data. It remains debatable whether younger colorectal cancer patients have a worse prognosis than older patients. The aim of this study is to review our data on young patients treated for colorectal cancer to compare their clinical, pathological and outcome data with older individuals treated between 1993 – 2005.

Method: Clinical charts of 70 patients aged 40 years and younger were reviewed to determine clinical and pathological patterns and treatment outcome. The data was compared with a larger group of older patients treated over the same period.

**Results:** Patients ≤ 40 years of age comprised 37% of all colorectal cancer cases treated over the 13 years period. There were 41 male (58.6%) and 29 female patients. The most common symptoms were abdominal pain (76.9%), change in bowel habit (71.4%) and rectal bleeding (54.3). The mean duration of symptoms was 24.6 ± 30 months. The rate of advanced colorectal disease (Duke C and D) was 73.5%. Mean follow-up times was 5.8 months with median survival of only 6.9 months. The Duke staging, histology, symptom duration, distribution of tumours, follow-up duration and the complication rate were similar for young and older patients. The early survival advantage for younger cohort was lost on follow up.

**Conclusion:** Younger patients form a significant proportion of colorectal cancer burden. They present with clinical and pathological features similar to older patients. Their survival also corresponds to older individuals. It is suggested that colorectal symptoms persisting in younger patients should also be aggressively evaluated including early endoscopy.

**Effects of Specialization on the Management, Surgical Outcome and Survival for Colorectal Cancer in Wessex, United Kingdom**

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**Background:** The Audit arose from the observation that survival rates for colorectal cancer differed significantly between Districts within Wessex. A retrospective study on patients from three Districts revealed that the difference was not due to either the age or stage at diagnosis, but probably to the treatment. The retrospective study was unable to identify the specific areas or types of treatment which could be influencing outcome. The aim was to undertake a whole population study with registrations from 1991 – 1994 and a five year follow up. To document the
then current practice in the treatment of colorectal cancer and to assess results against Standards set by the Working Party. Outcomes measured were surgical practice, post-operative complications, recurrence and survival.

**Patients and Methods:** A prospective study involving a 3.3 million population base with a 3 year data collection and 5 year follow-up. There were 11 treatment centres involving 5173 patients and 4562 operated cases. The mean age of the patients was 72 years; 67% with no serious health problems and 24% of patients with metastatic disease. 69% of operated cases were colonic and 31% rectal.

**Surgeon Specialization:** A specialist was defined as a Member of the Association of Coloproctology of Great Britain & Ireland with a commitment to and a special interest in coloproctology. A non-specialist was a general surgeon. There were 12 specialists who treated 46% of operated patients and 65 non-specialists who treated 54% of operated patients.

**Analysis of Results:** The Data were analysed for short and long term outcomes taking into account case-mix factors. They were assessed according to whether surgical management had been under the care of a colorectal specialist or a non-specialist. Analysis was completed using the statistical package SPSS. Survival was analysed using the Kaplan-Meier method and log rank tests. Case-mix was controlled for using logistic regression and Cox Proportional Hazards tests. Factors accounted for were: age, sex, stage, presence of health complications, site and elective/emergency procedures.

**Summary:** Specialists had a significantly higher volume of surgery, performed more total mesorectal excisions, raised more covering stomas for anterior resections, had lower post-operative mortality rates across the board, fewer major anastomotic leaks and a prolonged five year survival with a lower instance of local recurrence than non-specialists.

**Conclusions:** The benefits of specialisation are likely to arise from surgical training and expertise in pathology, radiology and nursing, adoption of protocols for oncological treatment and more effective organisation and delivery of the processes of care.

**Abdominal Compartment Syndrome (ACS) in Sigmoid Volvulus with Bowel Gangrene**

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**Introduction:** Abdominal Compartment Syndrome (ACS) is considered to be present when organ dysfunction occurs as a result of sustained elevations in intraabdominal pressure (IAP) above 20 mmHg.

**Case abstract**
A 35 year old man with the history of not passing stool since 5 days, abdominal distension and progradient pain, was admitted to the surgical ward. The patient presented with severe abdominal distension, a respiratory rate of 24/ min, Oxygen saturation of 84% without Oxygen. Blood pressure of 110/75mmHg and no urine output. After seen by the surgeon, with the diagnosis of ACS in bowel obstruction, the patient was brought into theatre without further investigations. Intraoperatively we found a sigmoid volvulus with bowel gangrene. Sigmoid resection with EEA was performed and the patient was send to ICU. Postoperatively the patient recovered with some complications.

**Discussion:** Late presentation of sigmoid volvulus often presents with bowel gangrene and ACS. Urgent decompression is the only definitive management.

**Audit of Gangrenous Sigmoid Volvulus in Blantyre, Malawi.**

**Kamalo PD, van Hasselt EJ,**

**Background and Aims:** Gangrenous sigmoid volvulus (GSV) is common in Malawi. This study evaluated the clinical picture and outcome of treatment in GSV.

**Study Design:** Retrospective audit.
Methods: In October 2006 we reviewed case records of all patients with GSV operated on at Queen Elizabeth Central Hospital during the period July 2001 to August 2006. We used a convenient sample. The primary outcome measures were mortality and length of stay (LOS) in hospital. We compared the clinical features and outcome measures between two groups: patients who had primary end-to-end anastomosis without intra-operative bowel preparation (PA) and those who had the traditional Hartman’s procedure (HP). SPSS statistical package was used for analysis.

Results: We found 20 case notes and all patients were male within the age range between 21 to 70 years (mean 45, SD +/- 15). Fourteen patients (75%) presented within 3 days of onset of symptoms. Four patients (20%) were in shock on admission while 60% had episodes of hypotension intra-operatively (mean arterial pressure < 70mmHg). At the time of operation 9 cases were found to have an ileo-sigmoid knot (ISK) with gangrenous small bowel. Half the patients (10/20) had the Hartman’s procedure while the other half had primary anastomosis. Three patients died (mortality 15%) two of whom were from the HP group. Mean LOS for HP patients was 11.8 days (SD +/-10.8) while for PA it was 7.4 days (SD +/- 2.8), but the difference was not statistically significant (t=1.24, df=18, P>.1) There was only one clinically diagnosed anastomotic leakage.

Conclusion: Although the number of patients is small the findings show that the outcome for primary and Hartman’s procedure is similar irrespective of haemodynamic instability provided the anastomosis is made without tension and both ends are well-vascularised.

Morsellised full thickness skin grafting: A solution for large wounds in the developing world
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Achieving closure of large open wounds is a frequent surgical challenge throughout the world. Split thickness skin grafting (SSG) is the current treatment of choice for wounds with a healthy bed but problems are not uncommon. The technique is technically demanding and requires specialized equipment, which is not always available.

Donor site morbidity is frequent with complications such as infection, delayed healing and keloid formation. In an attempt to avoid these problems we have used an alternative technique. An ellipse of full thickness skin is removed from a site close to the wound. The donor site is then closed primarily. The graft is morsellised and applied to the graft site piecemeal. Dressings are applied and the limb immobilized in plaster for 5 days. This technique has now been in use at Lilongwe Central Hospital, Malawi and initial results suggest that this is a valuable alternative to SSG in a developing world setting. There have been no postoperative complications and all donor sites have healed by primary intention.

Sugar Dressings in the Treatment of Malodorous Wounds
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Compared to European practice there is a huge burden of open, septic, malodorous wounds in Africa. Such wounds have a negative psychological and social impact on patients, with resulting low self esteem. Activated charcoal dressings are effective in reducing odour but are prohibitively expensive for the developing world. In contrast, granulated sugar is cheap and universally available throughout Africa. The high osmotic pressure exerted by granular sugar is bacteriocidal / bacteriostatic, but often sugar alone is eluted from the wounds by virtue of exudate. Combination of granular sugar with glycerine and Vaseline produces a paste which can be applied to
wounds and is persistent, being resistant to elution.

Fourteen patients with malodorous wounds had their wounds dressed with the combination paste. Wounds were then subjectively scored for odour and pain for up to 10 days. All patients gave an improvement in pain scores and only one patient failed to score an improvement in odour. We believe that this modified sugar dressing is a useful adjunct to the care of open wounds in a developing world setting and also is successful in reducing wound odour, a problem which hitherto has received little attention in the developing world hospitals.

Recurrent Ameloblastoma – Case Presentation and Review of 33 New Pathological Cases
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Ameloblastomas are rare tumours of odontogenic origin which pose significant challenges in their surgical management. A 16year-old girl with a recurrent ameloblastoma had a near-total mandibulectomy followed by a mandibular reconstruction with a Kirschner wire. Her excellent functional and cosmetic result supplemented with an emotional and spiritual support provided a complete healing. A large computerized pathology database from one single pathology laboratory was analyzed, revealing 33 unreported specimens of ameloblastoma over a period of 14 years. The clinical and anatomico-pathological features of these patients will be presented in detail, and related to the existing literature data.

Myositis (Fibrodyslasia) Ossificans Progressiva- A Case Report
Muteti EN; Mead TC.

History

We are presenting an 18yr-old girl who developed swelling around the temporo-mandibular region 3yrs ago, followed by difficult in opening the mouth. In the following 12months, she developed painless and progressive stiffness of the neck, then the shoulders, elbow and hips in that order. No history of fever, pain, weight loss or trauma. The respiratory, cardiovascular, gastrointestinal, genitourinary and nervous systems were normal.

Examination

Examination revealed a well-nourished girl, not pale and with normal vital signs. The mouth opening distance was 2cm. She had limited range of motion of the neck of 10 degrees flexion, no rotation or lateral flexion. The shoulder was held in fixed 10 degrees of abduction and 30 degrees of flexion. The elbows were held in fixed flexion at 20 degrees on the right and 45 degrees on the left. The right forearm was in fixed 20 degrees of pronation, while the left forearm was held in full pronation. The hips had flexion deformity of 20 degrees but normal rotation. The thumbs and big toes were abnormally short. The range of motion of the wrists, fingers, knees, ankles and toes were normal. The right half of the patient’s abdominal wall felt rock-hard on palpation while the left was normal.

Investigations

Complete blood cell count- normal. Erythrocyte sedimentation rate- 16mm/hr Alkaline phosphatase- 95 U/l. Serum calcium-9.4mg/dl. Rheumatoid factor-negative Electro-cardiogram- normal. X-ray findings: bone bridge between scapula and humerus (shoulder), humerus and ulna (elbow) and along the triceps and biceps, bony ankylosis of C2/C3, C4/C5 posterior spinous processes; and bone formation along the lumbar paraspinal muscles and anterior abdominal wall.

Treatment

The patient identified the greatest handicap to be inability to use the upper extremities. Surgery was elected to help allow elbow
Discussion

Fibrodysplasia ossificans progressiva, also known as Myositis ossificans progressiva, is an extremely rare disease. In this patient we highlight the finding that the onset was at 14 years of age with temporo-mandibular joint as the initial site of involvement. She had the classic cranio-caudal sequence of joint involvement, thumb and big-toe abnormalities, and extensive heterotopic bone in the muscle without intra-articular involvement. The patient has multiple problems including difficult in opening the mouth, upper extremity use and walking. Her primary problem was upper extremity use and this was addressed through surgery, anti-inflammatory medications (NSAIDs) and exercises. Other modalities that have been used include irradiation, biphosphonates and bone marrow transplantation.

Conclusion

Fibrodysplasia ossificans progressiva is a very rare disease. We present the clinical features of one such case. It is characterized by cranio-caudal sequence of heterotopic ossification and big toe and thumb abnormalities. Its treatment needs to be individualized.

Primary Adenocarcinoma of the Duodenum. A Case Report

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Introduction: Tumors of the small intestine account only for 1–5% of the neoplasms of the digestive tract. Duodenal adenocarcinoma makes <10% of these cases. Early diagnosis is unusual due to non-specific clinical features.

Case Report

A 64 year-old diabetic/hypertensive male patient presented with upper abdominal pain, vomiting and weight loss. Endoscopy revealed complete obstruction of the third part of duodenum. Lesion biopsy revealed moderately differentiated adenocarcinoma and associated duodenitis. A staging CT scan showed thickening of duodenal wall over a span of 6cm, luminal narrowing, mucosal irregularity and multiple paravascular nodes. Palliative by-pass surgery was offered but declined. External opinion was concordant with the local opinion and patient underwent gastro-jejunostomy, jejuno-jejunostomy by-passes. He later predictably presented with features of obstructive jaundice. A repeat CT scan and ERCP done at his time denoted extensive D2 involvement. He underwent cholecysto-jejunostomy/jejuno-jejuno-stomy.

Conclusion: The presentation of duodenal malignancy is usually late. Surgical palliation is the mainstay of management. A high index of clinical suspicion may facilitate its early detection.

Rare Tumour of The Cervical Region

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Beira Central Hospital

A one-year old female child as admitted to the Paediatric ward section in March 2006 on referral from Muxungué, for huge tumour of the neck, with one month of duration. On physical examination a tumour with 15x7 cm, on the left half of the neck, hard and lobulated was seen. On admission had Plasmodium positive +++ for which Quinine was prescribed. Other tests ordered: Fine needle aspiration, Cell blood count, Biochemistry, HIV, Urinalysis, Ultrasound of the left cervical region and abdominal and Thorax X-ray. F.N.A.C. was inconclusive but queried “sarcomatous
“Cells”. Incisional biopsy was recommended. Pre anesthetic visit: “risk of biopsy dangerous”, “risk of excision deadly”.

Three weeks later a decision was made to operate because of progressive respiratory distress. Under general anesthesia, a complete excision of the tumor and part of the left clavicle was performed and suction drain was left. Histopathology showed fibromatosis of infancy, Desmoide type. The child was discharged 3 weeks after surgery. Follow-up at two months with Ultrasound and X-rays showed no recurrence.

Rare Prolapse Through The Anus
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A two years old 10kg weight female child was referred from a remote area of the Sofala Province, with prolapse of 50cm of gangrenous ileum, through the anus. Laparotomy under general anesthesia was performed and found a intraperitoneal perforation of the rectum where the ileum introduced and exteriorized, becoming gangrenous. A intestinal resection of the gangrenous ileum, with end-to-end anastomosis 5cm of the ileocecal valve, and Hartmann’s operation was done. On the fifth postoperative day the colostomy was functional. On the 6th day postoperatively, the patient had dehiscence of anastomosis of the ileum. She was re-operated on the 8th postoperative day; an end to side ileotransverse colon anastomosis was done. Three months after surgery the patient was discharged with no other complication.