Abstacts of papers presented

SURGERY IN AFRICA: THE NEED FOR A BROADER BASE
P FENTON, BLANTYRE, MALAWI

The output of general surgery in rural Africa is far less than that of obstetric and gynaecological surgery. Apart from poor perceptions of surgery among the local population and technical difficulties, deficiency in manpower and training in all health cadres is an important factor in keeping down the surgical output.

Paramedical Clinical Officers now perform almost all obstetric surgery in Malawi and give all anaesthesia. Formal training courses in anaesthesia have been in existence in Malawi for 10 years.

General surgery is lagging behind these disciplines in this type of training.

The role of the surgical doctor as a trainer, supervisor and manager of non-doctor surgeons is more important than performing operations if surgical output is to be maintained or even increased in Africa.

THE MAPUTO TRAUMA REGISTRY: INITIAL RESULTS
R BARRADAS, MAPUTO, MOZAMBIQUE

OBJECTIVES: To define the common situations when trauma cases occur in Maputo City so as to provide the essential means to design interventions for its prevention.

MATERIALS AND METHODS: A one year retrospective analysis of 1590 trauma cases admitted consecutively to the Maputo Central Hospital in Mozambique, in 1996.

RESULTS: Males largely predominate (1058/1582 - 66.9%). Age grouping reveals almost half the cases (748/1558 - 48%) are under 20 years old. From this age onwards the relative frequency tends to decrease. Children under five years old accounted for 34.7% of all children (126/363).

There was not much variation concerning the days of the week: it was on Fridays when more trauma cases occurred (243/1574 - 15.4%), followed by Mondays (15.2%) and Saturdays (15%). There was an evident predominance of cases during the second semester of the year, when almost two-thirds (1144/1584 - 72%) of the cases have occurred. There is a predominance of trauma cases during the second half of the day (between 12 and 24 hours) (933/1580 - 58.9%). The period between 12-18 hours was the most common (475/1580 - 30%) and the other 6 hour periods received between 25-30% of cases with the exception of the period between 0-6 hours that accounted for only 14.1% (223/1580).

Road traffic accidents were by far the most common mechanism of trauma (682/1586 - 43%), followed by falls (298/1586 - 18.8%) and burns (259/1586 - 16.3%). One hundred and four cases (6.6%) were due to fire-arms (only five were due to land mines, while 90 were by pistol). Seventy three cases (4.6%) were stab wounds. Only 17 were work related accidents and one was a case of poisoning.

The number of trauma cases admitted to the Orthopaedic units (597/1587 - 37.6%) was almost identical to that admitted to the Surgical units (588/1587 - 37%). These were distributed into General Surgery units - 22.6% - and Surgical Specialities units (Neurosurgery, Plastic Surgery, Maxillo-Facial and ENT) - 14.3%. The Intensive care unit admitted 12.6% of the patients (00/1587). Paediatric surgery and Ophthalmology account for 9.6% and 3.1% respectively of those admitted. Five point six percent (89/1588) of the traumatised patients died.
CONCLUSIONS: Orthopaedic trauma is a notorious facet of trauma in Maputo. Preventive interventions for reducing trauma in Maputo city should focus on the second half of the year and on the second half of the day. Both of these seem riskier times for trauma. Road traffic accident prevention should be the main target of the interventions. The number of gun shot wounds and stab wounds reveals a violent society but intervention in this area is not recommended before social and economic situations improve.

CHARACTERISTICS OF INJURY FROM ASSAULT OBSERVED IN SURGICAL CASUALTY ROOMS AT THE UNIVERSITY TEACHING HOSPITAL, LUSAKA
B F ODIMBA, C MULLA, L NTUMBA, D KANYEMBO, LUSAKA, ZAMBIA

At the University Teaching Hospital Lusaka (UTH), injuries from assault are far fewer than those from road traffic accidents but the social and medicolegal impact of assault injuries justifies interest in this group of patients.

We aimed to determine incidence in surgical casualty rooms; to analyze profiles of both assault victim and assailant as well as to find out common characteristics of the event, the injuries sustained, their management and short-term outcome during a prospective study from April to August, 1998.

A cross-sectioned analysis of the preliminary results has shown that assaults accounted for 12% of trauma victims. Road traffic accidents accounted for 35% of trauma. The assault victim was usually a young man living in one of Lusaka’s surrounding compounds or townships. The assailant was often known, usually another a male adult, operating alone or within a group, seeking revenge or to steal. Such violence was frequent towards the end of the month, in the afternoon or at night, in public areas or in a drinking place. The assailant used his fists or a metallic bar. The trauma was mainly to the hands and limbs, consisting of bruises and lacerations. The patient was often unconscious due to underlying alcoholic intoxication. Apart from a few victims of gunshot wounds, the majority of assault victims were discharged the following day, sometimes with referrals to special clinics such as ear, nose and throat, maxillo-facial and ophthalmology clinics. Many victims required medical reports.

This work gives only a partial view of assault at the UTH. It needs to be extended to those patients attending other departments, such as Obstetrics and Gynaecology (sexual abuse), Paediatrics (child abuse), UTH Police Office (bodies brought in dead and complaints of rape).

SEVERE NECK CONTRACTURES FOLLOWING BURNS: SURGICAL AND ANAESTHETIC CHALLENGES
GORAN JOVIC, LUSAKA, ZAMBIA

Severe anatomical distortion of the neck structures or rigid scars can make endotracheal intubation impossible. This study of 27 patients with severe neck contracture from burns or keloids was presented to share our six-years experience. We conclude that, working in our circumstances, it is advisable to do immediate skin grafting (full and thin split thickness skin graft) to the raw area once the severe neck contracture has been released, rather than making large local or distant flaps as a primary procedure. Local flaps can be used for secondary procedures when necessary. Blood loss and anaesthetic time are reduced to a minimum because of the severe blood shortage in our hospitals and the HIV pandemic.

BREAST RECONSTRUCTION: TWO-YEAR EXPERIENCE IN A REGIONAL BREAST UNIT
C HOLCOMBE & A SHROTRI, LIVERPOOL, UK

Primary breast reconstruction is recognised as an important part of the treatment of breast cancer where mastectomy is needed. In many centres, this is done by the breast surgeon. This illustrated paper documented the experience and results of the author in the first two years following appointment as a consultant surgeon.

The Breast Unit sees 4000 new symptomatic patients per year, diagnosing 244 symptomatic and 80 screen-detected cancers. The author treated 250 cancers during this period.
RESULTS
Total number of reconstructions 44: 32 implants, 12 TRAM flaps

<table>
<thead>
<tr>
<th>TRAMS</th>
<th>IMPLANTS</th>
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<tr>
<td>Age</td>
<td>35-72</td>
</tr>
<tr>
<td>Primary</td>
<td>9</td>
</tr>
<tr>
<td>Secondary</td>
<td>3</td>
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<tr>
<td>Contra-lateral surgery</td>
<td>1</td>
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<td>Number of operations (Mean)</td>
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Breast reconstruction can be performed safely and effectively by a breast surgeon with a specialist interest and appropriate training. However, breast reconstruction is technically demanding. The TRAM flap has a high incidence of minor complications. To get good cosmetic results using expanders and silicone prostheses requires meticulous attention to detail. The introduction of 'breast shaped' silicone prostheses has improved results with time, as have small changes in operative technique and increasing use of surgery (reduction/mastopexy and augmentation) to the contralateral breast to achieve symmetry.

ABDOMINAL CT AT MULAGO HOSPITAL: A PRELIMINARY AUDIT
E KIGULI-MALWADDE, M KAWOoya, I MATOVU, S OOLA, KAMPALA, UGANDA

Mulago Hospital, a tertiary referral and teaching hospital, acquired a computerised tomography (CT) scanner in 1995 which was the first, and is still the only one, in Uganda. We presented a retrospective study of our experience with CT of the abdomen at Mulago Hospital between March 1995 and June 1998.

Of 2332 scans, 39 patients had a standard CT abdominal scan on a Phillips Tomoscan CT machine with IV and oral contrast medium. The slice thickness varied from 2mm-10mm depending on the indication. The main indication was to localise and define the nature of abdominal masses followed by staging. We noted that it was mainly patients in the age bracket between 20-60 years that were being investigated and that most were males.

CLOSED LATERAL SPHINCTEROTOMY IN THE TREATMENT OF FISSURE-IN-ANO
MARANGU R RUCHA, NAIROBI, KENYA

Closed lateral sphincterotomy was done on 145 patients over a five-year period (1993 to 1997). Male patients predominated (M:F; 4.6:1), 57% of patients were aged between 31 and 40 years and 50% had symptoms for more than three months.

Two weeks after surgery, 72% of the 116 patients reviewed complained of urgency and incontinence to flatus but this figure reduced to only three after four weeks. Healing of the fissure was noted in 54% at two weeks and in all patients by four weeks.

At 6 months after surgery, 89 patients were reviewed and none had incontinence to flatus or urgency. There has been no recurrence reported by any of these patients.

Fissure-in-ano is a painful condition. Treatment with a closed lateral sphincterotomy is an effective method with minimal complications and should be recommended as the treatment of choice.

PATIENTS' EXPERIENCES OF A DIAGNOSIS OF CANCER: IMPLICATIONS FOR PSYCHOLOGICAL SUPPORT
C HOLCOMBE, A BYRNE AND P SALMON, LIVERPOOL, UK

Diagnosis of cancer has profound psychological consequences and is often associated with psychological morbidity. Little is known, however, about how patients experience the diagnosis.

We interviewed 29 patients (15 male, 14 female) with breast, bowel, lung or other types of cancer between 3 days - 19 years after diagnosis. They were recruited from outpatient hospital clinics and a palliative care setting. The sample included patients with both good and poor prognoses. Interviews were semi-structured, audiotaped and transcribed for qualitative analysis using established procedures.

The analysis identified several distinct ways in which patients experienced the diagnosis of cancer, only some of which have been documented previously.
Underlying most of these accounts were two fundamental beliefs. The first concerned the need to regain the feeling of having a normal life. This accounted for many patients apparent denial of the significance of diagnosis. The second was that the patient must protect other people, including family and clinicians, from the emotional effects of the diagnosis. Suppression of negative emotions, and adoption of the attitude of ‘fighting’ the cancer, were common ways of achieving this. These findings call into question current assumptions about how to provide psychological support for patients with cancer, in particular concerning the encouragement of a fighting spirit.

**SURGICAL TREATMENT OF BENIGN THYROID DISEASE**

R H PELLER-SAUTER, P E M MULLER, F SPELSBERG, MUNICH, GERMANY

In Germany, about 100,000 operations on the thyroid are carried out every year. About 80,000 operations are needless, in that in Germany, the iodine supplementation is insufficient and goitre is not taken seriously. The consequences are: economic damage of over 2 million DM yearly (the cost of the needless operations on the thyroid), about 6,400 unnecessary permanent paralysis of the recurrent laryngeal nerve yearly and about 4,800 unnecessary cases with permanent hypoparathyroidism yearly.

Retrospectively, the follow up of 17,800 surgical treatments of goitre was investigated between January 1982 and December 1997. The pathology was 50.6% nodular thyroid diseases without autonomous functioning, 38.5% nodular thyroid diseases with autonomous functioning, 5.2% Graves' diseases, 4.5% struma maligna and 1.2% thyroiditis and abscess. On our 17,800 patients we performed about 12,000 operations, 75-80% of which should not have been necessary if the iodine supplementation was sufficient in Germany.

Operation is indicated in cases of goitre with local symptoms, tracheal and or oesophageal stenosis and with inflow obstruction, thyroid nodules, retrosternal goitre, autonomous functioning, recurrent goitre, Graves' disease, thyroiditis and abscess.

The following examinations are necessary for preoperative diagnosis: case history, physical examination, neck sonography, thyroid function test, radioisotope scanning of the thyroid, chest radiograph, testing of the laryngeal recurrent nerves and determination of the calcium blood concentration. The supplementary examinations help to obtain a preoperative diagnosis: fine needle biopsy, determination of the thyroid antibody blood concentration, tracheal spot film, oesophageal barium swallow, NMR or CT, calcitonin blood concentration and RET-Protooncogenmutations analysis.

Our surgical practice of resection includes: excision of nodule with surrounding tissue, selective resection, subtotal resection with superior rest or with dorsal rest, hemithyroidectomy or total thyroidectomy. The aim of the operation is the surgical removal of all nodules and the maintenance of the function. The extent of resection is not only related to the morphology and the function but, in all cases, to sufficient resection of nodular tissue. Maintenance of adequate endocrine function is rarely possible. The residual volume is 3-5ml after the operation and the patients need lifelong hormone substitution. Insufficient resection causes a higher amount of goitre recurrences.

Sonography helps the surgeon to find and remove all nodules in the thyroid. The surgeon does not need to palpate the two lobes with his fingers. In certain cases it can be difficult to define the line of struma resection between pathological and healthy tissue because of large multinodular transformation.

Total thyroidectomy is not usually performed for goitre because of increased complications (recurrent nerve injury, secondary haemorrhage, hypocalcaemia). Our study demonstrates that total thyroidectomy can offer efficient therapy in large multinodular deficiency goitre. Retrospectively the follow up of 4,767 surgical treatments of goitre were investigated between January 1992 and December 1996 and 176 of these patients (3.7%) were treated by total thyroidectomy.

**TABLE I Complications of thyroid surgery**

| Strumectomy and hemithyroidectomy | 0.7% |
| Recurrent nerve palsy | 0.7% |
| Hypocalcaemia | 0.6% |
| Secondary Haemorrhage | 1.8% |
| **Total thyroidectomy** | |
| Recurrent nerve palsy | 0.6% |
| Hypocalcaemia | 0.6% |
| Secondary Haemorrhage | 0.6% |
Our results showed no differences in the complication rate and we conclude that total thyroidectomy is an efficient treatment for large multinodular goitre.

**How should we avoid hypocalcaemia, secondary haemorrhage and recurrent nerve palsy?**

1. Exact preoperative sonography has to be carried out to find and remove all nodules and for the determination of the volume of the two thyroid lobes.
2. With accurate preparation and dissection techniques it is easier to identify all tissue structure.
3. Parathyroid glands should be preserved or transplanted into the sternocleidomastoid muscle.
4. Identification of the recurrent laryngeal nerve, if possible and if it makes sense.
5. Hemithyroidectomy or total thyroidectomy were performed as surgical treatment in cases with malignancy suspicion, Graves' disease, extremely multinodular goitre and in unclear intraoperative situations.
6. Recurrent goitre is operated in two steps, first the larger and/or the possibly malignant lobe and, after 4-8 days or six months, the other lobe. The high frequency of reoperations is combined with higher risks of recurrent nerve palsy.
7. I agree with Mr King, Mr Bewes, Mr Cairns and Mr Thornton. "Don't try to excise a solitary thyroid nodule unless you can do a thyroidectomy!"

**Conclusions**

1. Sonography plays a major role in the surgical treatment of benign thyroid disease.
2. Avoidance of complications is not always possible.
3. Indications for the radical operation increase in endemic areas.
4. Iodine prophylaxis is the key to progress.

**OSTEOGENESIS IMPERFECTA IN ZIMBABWE**

W J HARRISON AND K C RANKIN, BULAWAYO, ZIMBABWE

The results of surgical treatment of 15 children with osteogenesis imperfecta in Bulawayo, Zimbabwe were reviewed. A total of 23 self-expanding and 27 fixed length rods were used. Outcome was measured in terms of mobility status over the course of treatment. Self-expanding rods appeared to confer more benefit to growth than fixed rods and less often necessitated revision surgery in these bones. The complication rate was high in all cases, but the complications associated with outgrown fixed length rods were a particular problem. The 15 children benefited from surgical treatment. The self-expanding rods performed better than fixed length rods in reducing the number of interventions. They also appear to facilitate growth. The self expanding rods may be used to good effect in appropriate centres in the developing world.

**THE ORTHOPAEDIC MANAGEMENT OF KONZO SPASTIC PARAPARESIS**

J N PENNY

Konzo is a newly defined disorder caused by the ingestion of cyanide precursors present in "bitter" cassava. The syndrome is seen in rural poor populations in several African countries. The precipitating factors appear to be: cassava dependency, protein malnutrition, and reduced cassava preparation time during war or famine stress.

Konzo affects children and causes a spastic paraparesis with significant differences from typical cerebral palsy, including severe muscle contractures worse distally in the lower limbs. There is little or no information on the surgical management in the existing surgical literature.

The paper reports the results of surgical management in 16 children with Konzo recognised in the West Nile region of Uganda. All except three had fairly symmetrical bilateral involvement. Procedures included 13 tendo-Achilles' lengthening and 13 Lamberinudi triple arthrodeses for equinus contracture and eight fractional hamstring lengthening followed by wedging plasters for knee flexion contracture. Surprisingly good correction is often achieved with simple Achilles' tendon lengthening, even in longstanding cases, but the assessment of tendon release versus bony triple arthrodesis has to be made at the time of surgery. Functional outcomes are often better than in typical cerebral palsy cases.
ORTHOPAEDIC PROBLEMS OF ROAD TRAFFIC ACCIDENTS IN MALAWI
M THYOKA, C LAVY, S J MANNION, BLANTYRE, MALAWI

The south-eastern African republic of Malawi has a population of 11 million people and a predominantly rural-based economy. Healthcare resources are limited and there is a great shortage of qualified doctors. With only two orthopaedic consultants in the entire country, the provision of orthopaedic care is largely provided by Orthopaedic Clinical Officers, a non-doctor grade who undergo four year’s training.

The vast majority of orthopaedic trauma cases relate to road traffic accidents on the country’s 13,000km of roadway, only 20% of which are surfaced. Poor roads, overcrowded vehicles, failure to use/fit/maintain seat belts, as well as low standards of driving and vehicle maintenance, undoubtedly contribute to both the incidence and severity of these cases which impose a considerable burden on orthopaedic surgical provision. Since October 1997, Orthopaedic Clinical Officers have been requested to record details of all patients injured in road traffic accidents.

This data includes the cause of the accident (if known), the type of vehicle involved, whether the patient was a pedestrian, passenger or driver, the nature of the injuries sustained, the delay before admission to hospital and any mortality resulting from the incident. Information is recorded on a standardised form. Data has so far been received from 10 of the country’s 28 district, rural and mission hospitals (35%) with details of 595 cases. The majority of casualties were passengers (61%). The common fractures were forearm (65 cases), humerus (37) and femur (36). Eleven pelvic and 14 spinal fractures were noted. Recording of delay in reaching hospital was incomplete but the mean time was 3.25 hours in those cases where it was noted.

This study establishes a base line for the aetiology of and spectrum of injury resulting from road traffic accidents in Malawi. Most of the injured were passengers, and with vehicle ownership being low in Malawi, were often travelling in unlicensed “taxi” vehicles. With the suggestion of mechanical failure as a factor in many cases, regulation of this hitherto casual industry might reduce the burden which road traffic accident victims represent to an already overstretched orthopaedic service. Any attempt at regulation of this sector, however, may lead to increased transport costs to the public, with undoubted socio-economic implications for a developing country.

DECLINE IN TRAUMA MANAGEMENT
C V CHAHEKA, ZOMBA, MALAWI

The health service delivery system in Malawi is experiencing serious problems as is evidenced by the public outcry both at the hospitals and in the media. Trauma management has not been spared and many factors contribute to the decline. Among these factors are: increase in the number of trauma cases, limited resources, lack of motivation and poor salaries. There is also a lack of public awareness of trauma as a potentially fatal disease and trauma management is poorly taught in medical and nursing colleges. There is need therefore to urgently address the above factors if patients are to benefit.

Trauma is a universal problem and WHO have included it in the Primary Health Care programme. It causes death and disability and the group most affected are those who are in the most productive period of their working lives. Trauma management is an essential part of the Malawi health service and more training and resources should be diverted to this area.

HEAD INJURY IN MAPUTO CENTRAL HOSPITAL
M T COUTO, H RICARDO, A KROM, MAPUTO, MOZAMBIQUE

Maputo Central Hospital is an institution of 1500 beds, of which the Department of Surgery has 260 and there are 37 beds for neurosurgery. Care of the neurosurgical patients depends upon three neurosurgeons and eight nurses. Patients with a Glasgow coma scale of 13 or less are admitted with a relative, who helps the nurses to feed, turn, change clothes and bath the patient. From July 97 to June 98, 620 patients were admitted. Head injury, 505 cases (81.5%), was the principal reason for admis-
sion. Mortality reached (12.7%). Road traffic accident was the most frequent aetiology, 343 cases (67.9%), followed by assault, 118 cases (23.4%). Four hundred and seventy cases (93%) were male. Cerebral contusion was the most frequent diagnosis, 250 cases (49.5%), followed by fractured base of skull. Fifty-six operations were performed, mostly for evacuation of chronic subdural haematoma. Bronchopneumonia and post-traumatic epilepsy were the most frequent complications. Fracture of tibia and fibula, and fractures of ribs were common associated injuries.

CHILDHOOD HYDROCEPHALUS IN MALAWI: A PROTOCOL FOR MANAGEMENT
A ADELOYE, BLANTYRE, MALAWI

From 1991 to 1995, children with hydrocephalus presenting at the Queen Elizabeth Central Hospital, Blantyre were treated with ventriculoperitoneal shunting using the available shunt system. The children were unselected and most were offered a shunt operation

Follow up of these children, at the clinic and in the paediatric surgical wards later, showed that the benefits of treatment were minimal in some cases, raising the question of better selection for treatment among Malawian children with hydrocephalus.

The paper describes a protocol that we now adopt for management of these children at the various tiers of health care delivery that we have in Malawi. It is suggested that this protocol can be gainfully adopted and used in areas of the world with either basic or sophisticated medical facilities.

A CLINICAL VARIANT OF PHAKOMATOSIS
H B NKUME, A ADELOYE, J JAMES, N G LIOMBA, R CARR

A 12-year old Malawian girl presented with a right upper lid tumour causing mechanical ptosis and obscuring the vision of her right eye. Detailed history revealed that she was born with a naevus on the entire right side of her face and growth of thick hairs over the naevus started at 10 years old.

The naevus occupied the entire distribution of the right trigeminal nerve, crossing the nasal bridge and was covered with thick hairs. The lid tumour had a wormy consistency and small defect could be felt in the underlying bone. There were no cafe-au-lait spots nor neurological deficit.

Plain radiography showed a small defect in the frontozygomatic bone underlying the eyelid tumour. The rest of the skull was normal and there was no intracranial calcification.

The eyelid tumour was excised to correct the ptosis. The tumour had two distinct parts, one fibrous, the other melanotic. Histological examination revealed a diffuse type of neurofibroma as seen in association with neurofibromatosis in 50% of lesions of the NF2 type. In addition, melanophages and melanotic Schwann cells were present in the dermal nerves and within the neurofibroma.

The two possible diagnoses in this case were neurofibromatosis of von Recklinghausen and encephalo-trigeminal angiomatosis of Sturge-Weber, the two most common neurocutaneous syndromes that account for anomalies of the eyelids. The Sturge-Weber syndrome seems less likely because other features such as convulsion, mental retardation, glaucoma and intracranial train-like calcification were absent. Apart from the absence of cafe-au-lait spots, our case showed more radiological and pathological similarities to von Recklinghausen disease than with the Sturge-Weber syndrome. In the absence of cafe-au-lait spots and with the hair-covered naevus throughout the entire distribution of the trigeminal nerve, our case does not fit the usual pattern of von Recklinghausen disease. We present it as a unique new clinical variant of phakomatosis.

CERVICAL SPONDYLOSIS AS SEEN AT THE QUEEN ELIZABETH CENTRAL HOSPITAL, BLANTYRE, MALAWI
A ADELOYE, BLANTYRE, MALAWI

Thirty-seven patients with cervical spondylosis (19 men and 18 women) were seen at QECH between February 1997 and September 1998. The average age of the men was 48.8 years while that of the women was 52.8 years. The various clinical and radiological manifestations of the disease were
Most (53%) explosions occurred in the evening while filling a hot lit lamp. The hurricane-type lamp was associated with most (54%) of the explosions. Spontaneous explosions occurred from tin lamps (50%), bottles (30%) and hurricane lamps (20%).

In 19 patients the paraffin had been bought from a filling station and stored in a plastic bottle and in most cases the explosion occurred within seven days of purchase.

It would seem that tin lamps and hurricane lamps are dangerous and filling a hot lamp especially so. Other factors that need looking into are the quality of the paraffin at source and analysis of the stored paraffin.

**Rarity of Appendicitis in Malawi**

L C E Munthali, Blantyre, Malawi

We reviewed appendicectomies at the Queen Elizabeth Central Hospital, Blantyre from May 1997 to November 1998. Twenty-five appendicectomies were performed. The sex ratio was M:F:2:1 and ages ranged from four to 58 years (average 29 years). Histopathology showed a normal appendix in eight, non-specific inflammation in six and inflammation from Schistosoma mansoni in five.

The study confirmed the high incidence of S mansoni infestation in Malawi but further study is necessary to elucidate the role of S mansoni in appendicitis.

**Postoperative Wound Infection in Orthopaedic Patients**

E K Naddumba and G Madewo, Kampala, Uganda

We examined the records of 683 patients undergoing clean orthopaedic operations between 1992 and 1997. Factors known to be associated with surgical infection were investigated together with the presence or otherwise of an implant.

Postoperative infection was judged by the presence of fever, pus or signs and symptoms of acute inflammation of wounds. Positive cultures proved infection in some cases. Of the 683 patients evaluated, 28 (4.1%) had a postoperative wound infection. Prolonged pre-operative hospital stay (average 12.4 days) and operations lasting more than two hours, especially when implants were used, were the factors most associated with wound infection.

**Erratum**

Meetings of the Surgical Society of Zambia: abstracts of papers presented

University Teaching Hospital, Lusaka 28th March 1998

**Gastric Operations at the University Teaching Hospital**

K Erzingatsian

Successful medical treatment of peptic ulcer disease has reduced the number of gastric operations performed. Only 48 gastric operations were done on the author's unit over the last eight years.

The sex ratio of patients was M:F:3:1 and the average age was 43 years. Operations were performed for carcinoma (14), peptic ulcer disease (11), pancreatic gastric pathology (7), gastric outlet obstruction (6), caustic injury (4), trauma (3) and three patients had other diagnoses. The types of surgery performed were gastrectomy (15), by-pass (13), vagotomy and by-pass (6), vagotomy and pyloroplasty (3), closure of traumatic perforation (3) and various other operations (3). Irresectable carcinoma was seen in 14 patients. The average in-patient stay was 8.5 days and the hospital mortality 10%.

Because carcinoma is replacing peptic ulcer as the common reason for gastric surgery more emphasis should be placed on resection techniques in surgical training.