

SHORT REPORT

not actually increase the number of people needing surgery for sepsis, but it can increase the proportion of such cases. A lack of surgical facilities means that non urgent elective cases cannot be done, and therefore urgent cases such as surgical sepsis comprise a higher proportion of the total.

ii) Consequences

There are several consequences of an increase in surgical sepsis. Firstly with such a large number of septic patients entering the theatre there is a risk to other patients being treated in the same theatre. Secondly there is an increase in risk of infection to theatre staff, especially those dealing with a lot of sepsis, and it is important that proper protective clothes and equipment are available and used. Thirdly, the increase in absolute number of infected cases in a country with limited health resources, means that reduced facilities and surgical time are available for other conditions, and inevitably elective surgery is the first casualty.

iii) Management

What can be done about the increasing number of cases of surgical sepsis? Prevention should certainly be an aim. It is beyond the scope of this paper to discuss HIV control, but effective public health measures in this field will certainly help reduce community susceptibility to infection. Similarly public health education in the importance of effective treatment of early soft tissue infections is important, before they get to the stage of needing surgery. Legal controls of antibiotic sales would help but are difficult to police, especially as the source of market antibiotics is often a government hospital worker. Finally treatment of surgical sepsis needs to be effective. It is not sufficient to leave all infected cases to the end of the operating list for an inexperienced 'junior' to do. The first author has seen many cases of inappropriately treated osteomyelitis and septic arthritis which have resulted in the infection becoming chronic and needing further extensive surgery, even amputation. Adequate and appropriate treatment methods for surgical sepsis should be taught to all levels of personnel involved in the management of these conditions.

Chris Lavy (orthopaedic surgeon)

Claudia Schmidt (registrar)

Evelyn Kalua (medical student)

John Phuka (medical student)

Department of Orthopaedic Surgery,
Queen Elizabeth Central Hospital, Blantyre.
Malawi

Correspondence to:

Mr C B D Lavy,

PO Box 256, Blantyre,

Malawi, Africa

Fax (+265) 677869,

email lavy@malawi.net

Audit of orthopaedic referrals to the tertiary centre

C Kirby, J Harrison

Introduction

Queen Elizabeth Central Hospital, Blantyre(QECH) is the tertiary referral centre for orthopaedic cases for the whole of Malawi. As such, not only does the hospital receive patients from the Blantyre area, but also those referred from district hospitals and the central hospitals in Lilongwe and Zomba. Referrals make up about a third of admissions and almost half the operative case-load. The orthopaedic service at QECH faces pressure on beds, and at times there is a backlog of cases waiting on the wards for operative procedures. Inter-hospital transfer of patients is costly and may increase patient morbidity. We conducted this prospective audit in order to evaluate the number and nature of referred cases and instigate any necessary changes in referral patterns.

Method

The prospective audit was undertaken over an eight week period from late May to early July 2000. All cases admitted to QECH during the study period were entered and data recorded by a sole assessor (CK). Cases were identified at the morning surgical report, and ward admission books were examined to identify any missed cases. Cases were included if they had been referred from another centre, usually a health centre, mission hospital, private hospital, district hospital, or central hospital. Patients referred by general practitioners or admitted through casualty or clinics held at QECH were excluded. Data were obtained from the patient case notes and by consultation with the patients themselves. Data recorded related to the following areas:

- * Age and sex
- * Nature of injury/ condition
- * Referring clinician and centre
- * Reason for referral
- * Time elapsed from initial presentation to referral
- * Information provided with referral
- * Consultation at QECH
- * Management and disposal.

Results

104 cases were identified during the 8 weeks of the study period.

Demographics

The majority (83%) of referrals were male, with only 17%

females. 55% of referrals were young adults, age 15 to 40. Children accounted for 25% of cases.

Diagnostic categories

The vast majority (78%) were trauma cases. Of these femoral fractures accounted for 28%. Polytrauma represented only 6% of trauma cases.

Referring centres

22% of cases were referred from local health centres. 50% of referrals were from District hospitals, 15% from Central hospitals, 8% from Mission hospitals, and 5% from private hospitals.

Clinicians making referrals

37.5% of referrals were made by Orthopaedic Clinical Officers, 37% were made by Medical Assistants, and Consultant referrals from peripheral clinics held by orthopaedic surgeons accounted for 13% of the cases.

Information accompanying referrals

Only 25% of cases were referred with both a letter and radiographs; 61% had a letter alone, and 10% had no communication at all.

Reason for referral

Apart from clinical reasons, a number of referrals were identified which had resulted from failure of hospital infrastructure. 14% of cases were referred from District Hospitals because X ray machines were not functioning. Absence of Orthopaedic Clinical Officers from District Hospitals resulted in 3% of the referrals.

Consultation at QECH

86% of the referred patients were seen initially in the Casualty area. Trainee Orthopaedic Clinical Officers were the first to assess the patient in 72% cases. Almost all cases were subsequently seen by a more senior member of the orthopaedic team.

Management at QECH

43% of referred cases went on to have a surgical procedure. Of these 40% underwent internal fixation, but 51% had surgical procedures, such as wound debridements, that could normally be performed by Orthopaedic Clinical Officers in District Hospitals.

Discussion

In terms of clinical care the aim of the tertiary referral centre is to provide expertise and operative facilities that are not available at District level. In order to provide a good service, inappropriate referrals must be minimised so that resources can be channelled into those patients who can only be helped where specialist services are available. In this study, only a quarter of referred cases underwent a surgical procedure at the tertiary

centre that could not have been performed at District level. Appropriate communication and preliminary investigations can reduce both the number of inappropriate referrals and delays in treatment at the tertiary centre. In this study only 30% patients were referred with a radiograph, and this was sometimes so poor that repeat images were required. While this audit has shown that some patients are being referred unnecessarily to the tertiary centre, we also know that many patients would benefit from referral but are not currently reaching the tertiary centre. It is all the more vital to improve the efficiency of the current referral process so these patients can also be accommodated. Improvements are already being pursued in a number of ways:

1. *Guidelines for referral* have been agreed by the orthopaedic consultants and sent to appropriate clinicians in District and other hospitals.
2. One of the four current orthopaedic consultants is working full-time visiting outlying hospitals in a supportive and educational capacity.
3. Letters have been sent to those District Hospitals where X ray machines need repair, encouraging them to attend to the matter urgently.

Conclusion

This audit identified shortcomings in both the type of case referred and the communication which accompanied it. We hope that improvements on both fronts can benefit the patients and improve the service offered by the tertiary centre. A subsequent audit will assess the efficacy of these changes.

Claire Kirby, Medical Elective Student

W. James Harrison, FRCS (Trauma & Orthopaedics), Lecturer

Department of Surgery, College of Medicine, Queen Elizabeth Central Hospital, Blantyre.

An honest day's
work is the
best medicine
for ills

(Quote from a **Pharmanova office**)