

Debate

High-tech and low-tech orthopaedic surgery in Sub-Saharan Africa

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Abstract

Background: Zambia's governmental health system suffers from shortage of surgical supplies and poor management skills for the sparse resources at hand. The situation has been worsened by the dual epidemics of HIV disease and tuberculosis. On the other hand the private medical sector has benefited greatly from less bureaucracy under the government of the Movement for Multi-party Democracy.

Discussion: The Zambian-Italian Orthopaedic Hospital in Lusaka is a well organized small unit providing free treatment of physically disabled children. The running costs are met from the fees charged for private consultations, supplemented by donations. State of the art surgical techniques are being used for congenital and acquired musculo-skeletal abnormalities. Last year 513 patients were operated upon free of charge and 320 operations were performed on private patients.

Background

Zambia, formerly Northern Rhodesia, came to independence in 1964 and was ruled by a one-party government until 1991. "African Socialism" gave free access to health care and education but the services deteriorated in line with the economy, which was based on State-owned industry. The first multi-party elections brought the Movement for Multi-Party Democracy to power. "African Socialism" has been replaced by a market-orientated, investor-friendly economy to encourage private business. This has not been entirely unsuccessful but Zambia still relies heavily on financial support from developed countries.

The governmental health system has gone through a tiresome period over the last decade. Shortage of surgical supplies and medication, lack of maintenance of plant and equipment and poor management skills for the sparse re-

sources at hand, have rendered adequate patient care practically impossible. The situation has been worsened by the dual epidemics of HIV disease and tuberculosis. On the other hand we hear good news from the private medical sector, which has benefited greatly from deregulation and less bureaucracy. Some of these units, particularly those supervised by church organisations, treat the needy free of charge and collect fees and donations from patients who can afford to pay.

These surgical units are faced with a number of problems. Particularly in rural areas, they are confronted with a huge workload, far beyond the capacities available. A fine balance has to be drawn in order not to suffocate the existing structures.

Another problem is that, until now, paying "customers" have travelled abroad to South Africa, Europe or the Unit-

ed States for treatment. Therefore, Zambian hospitals are competing with first world medicine. To attract these patients, and encourage people to stay at home when they fall ill, is one way to finance a private medical system.

Discussion

The Zambian-Italian Orthopaedic Hospital (ZIOH) in Lusaka is a well organised unit which was founded in 1995 by the Cheshire Homes Society and a group of Italian Rotarians and is run by Franciscan Sisters from Italy and Zambia. ZIOH is a small (31 beds) unit whose primary mission is the free treatment of physically disabled children coming from the 10 Cheshire Homes in Zambia and from other charitable institutions and outreach programmes (Figure 1). The running costs are largely met from the fees charged for private consultations and surgery, supplemented by donations from the Christoffel-Blinden-Mission and other well-wishers in Zambia and abroad.

State of the art surgical techniques are being used for congenital and acquired musculo-skeletal abnormalities such as club foot, osteogenesis imperfecta, cerebral palsy and scoliosis (Figure 2). There is a well-equipped operating theatre with modern equipment for general anaesthesia, video arthroscopy and a new image intensifier. Another theatre for septic cases was opened this year. The orthopaedic operating lists currently exceed those of the orthopaedic unit at the University Teaching Hospital in Lusaka.

ZIOH holds clinics for private patients who are offered surgery and single room or small ward hospital stay if needed. The income from this service supports the staff, buys surgical supplies and allows for investment in medical equipment. Last year 513 patients were operated upon free of charge and 320 operations were performed on private patients.

ZIOH largely depends on the activities of Professor John Jellis OBE FRCS (eng & edin) – the senior Orthopaedic Surgeon in Zambia – who has spent over 30 years in the country (Figure 3) He recently retired from his professorial appointment at the University Teaching Hospital, Lusaka, to concentrate on the airborne orthopaedic extension service FLYSPEC that he has been running since 1982 and on his work at ZIOH.

The achievements of ZIOH are extraordinary considering the generally unfavourable conditions in Zambian health services. Recently a total knee replacement service for private patients was set up. Until now, only those who could afford to travel abroad would have the operation. On the other hand these patients still came to consult the orthopaedic staff in ZIOH if the 'foreign' prosthesis loosened or if there were any other complications.



Figure 1
Physically disabled children are treated at the ZIOH free of charge.

Very few Zambian patients have health insurance. They have to pay for both their travel expenses and treatment themselves and cannot afford costly surgery outside Zambia. Such considerations led to the introduction of total knee replacement at ZIOH. The experienced surgeons, who perform cemented total hip replacement surgery on a regular basis, selected an appropriate total knee replacement system, which is safe and affordable for Zambian patients. Professor Jellis went back to school by visiting the Orthopaedic Hospital of the Friedrich-Schiller University Jena, Germany while attending the Symposium of the German Tropical Surgery Society in 1999 and there received his first lesson on modern cementless total knee replacements. We had met each other in 1996, when we spent one year working in Zambia sponsored by World Orthopaedic Concern. Knowing about working conditions in the country and to what extent modern orthopaedic surgery is possible under local conditions, it was a privilege for me to assist the first total knee replacement in Zambia in March 2001.



Figure 2
Musculo-skeletal abnormalities such as osteogenesis imperfecta need extensive operative and conservative treatment.

Back in Europe we remember the down-to-earth Orthopaedic Surgery practised in Africa with a feeling bordering on melancholy and often ask ourselves whether we have lost touch with reality when introducing Computer Assisted Surgery into our daily orthopaedic practice. I guess Zambian orthopaedic surgeons had similar thoughts when they decided to take on knee replacement surgery in a setting which is loaded with HIV-related problems, neglected trauma, bone and joint tuberculosis, osteomyelitis and where only a small percentage of crippled children can be offered surgery. Ironically it is exactly this high-tech medicine, which provides the financial base for the badly needed free service for the poor African population. One has to wait and see whether Zambians respond well to the newly introduced knee surgery. The children would definitely benefit from the increased hospital income.

While back in Zambia this spring we also met Miss Hillary Robinson who currently chairs the British section of World Orthopaedic Concern. She spends several months each year in Africa helping to train local orthopaedic surgeons, running specialist clinics and teaching arthroscopic surgery and casting techniques. There is still a demand for the enthusiastic teacher who can meet Africa's doctors half way between local particularities and recent Western ideas.

Digital information systems, which currently flood the Continent, provide some teaching facilities. African pathology, however, is often very different from the orthopaedic problems seen in so-called developed countries and it is from these Western countries that most of the scientific literature is published. There remains almost unlimited scope for cooperation between the local and visiting surgeons to the mutual benefit of each.



Figure 3
Professor John Jellis OBE FRCS (eng & edin) – the senior orthopaedic Surgeon in Zambia – has spent over 30 years in the country.

Summary

The Zambian-Italian Orthopaedic Hospital in Lusaka is a small unit providing free treatment of physically disabled children. The orthopaedic team use state of the art surgical techniques for the treatment of congenital and acquired musculo-skeletal abnormalities. High-tech medicine like total knee replacement ensures the financial base for the badly needed free service for the poor African population.

Competing interests

None declared.