the Uganda Charitable Spine Surgery Mission

June 6 2006

Uganda Trip Report,
Spine Surgery Camp, May 12 – 26, 2006
Team; Isador Lieberman MD, Mark Kayanja MD, Mary Kay Reinhardt RN, Danielle Lieberman
Locations; Mbarara Hospital, Mulago Hospital, Mengo Hospital, Katalemwa Children's Hospital
Sponsors; Health Volunteers Overseas, Orthopaedic Overseas, Medwish Inc, Medtronic Inc

To whom it may concern,

It is with respect and pride that I submit this report of the Spine Surgery Camp.

At the outset on behalf of the patients of Uganda and the Spine Surgery team I would like to thank Kate Fincham, Dr. Denzel and the whole Health Volunteers/Orthopaedic Overseas staff for their support of this trip. I would like to acknowledge Medwish Inc. and Medtronic Inc. for their generous contributions of equipment and implants used during this venture. I would like to personally thank Mary Kay Reinhardt and Danielle Lieberman for their voluntary efforts during this endeavor.

I also extend my most sincere thanks to my colleague and friend, Dr Mark Kayanja for his relentless efforts in organizing this Spine Surgery Camp. His local knowledge, dedication, resourcefulness and organizational skills ensured the success of this inaugural project.

The purpose of this first trip was to introduce the spine team to Uganda and to introduce the Ugandan health infrastructure to the spine team. The introduction will serve as a foundation for future trips and establish a network of collaboration for teaching, research and clinical care of patients with spinal pathology. In this regard the trip was a great success, as the team has already began planning the next visit.

As this was the first Spine Surgery Camp we arrived with much anxiety and anticipation. The first issue we wanted to ensure was that we not leave disasters in our wake. After having done the first ward round with Dr. Beyeza and his team on ward 2C it became obvious that we could improve the plight of some of these patients. The care of spinal trauma, osteomyelitis/discitis and spinal deformity were all far below contemporary North American standards and even basic standards. The second potentially limiting issue concerning our team was the availability of spine surgery equipment. Thankfully between the efforts of Mark Kayanja and the contributions of Medwish and Medtronic we were exceptionally well supplied to essentially handle any spine surgery reconstruction, anteriorly or posteriorly, from the base of the skull to the tip of the coccyx. With our anxiety relieved we marched into the weeks ahead.

On our first day in the Mulago hospital a number of cases were presented to us. Contrary to what I had expected (an abundance of congenital spinal deformity) the cases were late trauma, chronic infections and an assortment of diagnostic dilemmas (neurologically compromised kids with no

apparent structural spinal abnormality). Out of the initial lot we planned for three of the patients to eventually have procedures.

After familiarizing ourselves with Kampala and the Mulago Hospital we collected our gear and journeyed to Mbarara (the drive from Kampala to Mbarara is not for the faint of heart). Here at the Mbarara University of Science and Technology and at the Mbarara Hospital we met up with Dr. Deo and the local orthopaedic team. We ran an initial out patient clinic followed by a ward round which again presented us with a multitude of varying spinal pathologies from which we triaged many patients for surgery. Four of which ultimately had surgery; A 59 year old gentleman with a 6 month old C6C7 fracture dislocation with dense paraplegia, a 9 year old boy with spinal TB, respiratory and neurologic compromise, a 41 year old woman with spinal TB and neurologic compromise and an 82 year old male with stenosis and an arthritic right hip. We were able to organize three of the surgeries in Mbarara. We undertook a C6C7 anterior decompression, reduction and reconstruction, an anterior T12 debridement and reconstruction, and an anterior followed by posterior decompression, reconstruction and stabilization for the 9 year old boy with spinal TB. The gentleman with stenosis was sent to Kampala for consideration of hip versus stenosis surgery depending on what equipment we had available.

The Mbarara hospital is as much of a cottage hospital as you can imagine. It consists of separate bungalows connected by covered walkways. The facilities were cramped and in disrepair. The operating theatres were clean, however the equipment was aged and lacking in maintenance and repair. There were no intra-operative portable or c-arm x-ray facilities. The OR lights were not functioning, the back up portable OR lights were weak and there was a severe lack of surgical linens, sheets and gowns. We resorted to using the “bubble wrap” from our shipped equipment to adequately pad the patients during surgery. We found that the hospital recycles the suction tubing which is only 4 feet in length and the cautery hand piece by sterilizing them in gluteraldehyde. The sterilization process certainly had something to do with the persistent malfunctioning of the cautery. After two full and long days in the theatre I began questioning myself and the purpose of the Spine Surgery Camp. Are we really making a difference? Are we premature in our efforts? Are we causing more harm? On the day of our departure when we saw the satisfactory results of our surgical intervention it became clear that we can make a difference. The woman with TB moved her legs for the first time in 4 months, the gentleman with a broken neck sat propped up in bed for the first time in 5 months and the child with the Pott’s disease had a tremendous correction. At the Mbarara hospital, I was most impressed with our anesthesiologist who was able to tackle these complex cases, and monitor the patients in the makeshift “ICU” with only the barest essentials of anesthetic and monitoring equipment.

On our return to Kampala we had a single case scheduled for that day at the Mulago hospital. This was a 60 year old male with an osteolytic lesion of T10. He was in the hospital for approximately 8 weeks with no effective care, a progressive myelopathy with bowel and bladder dysfunction and only a partial workup. The presumed diagnosis was tumor or spinal TB. He underwent a T8 thoracotomy corpectomy, rib reconstruction and anterior instrumentation from T8 to T12. The final pathology revealed the lesion to be a plasmacytoma. Once again the anesthesiologist was brilliant, maintaining the patient’s hemodynamic and ventilatory status with just the minimum of equipment and manually bagging the patient (with one lung retracted due to the thoracotomy) for the entire case.

The Mulago hospital is considered the flagship hospital in Uganda and is the Makerere University Medical School’s teaching hospital. Even though the physical plant was far better than the Mbarara hospital, Mulago suffers from all the typical issues of a teaching institution. We happened to be visiting during the resident’s exam week so house staff and the ward care was non-existent. During the brief encounters with the house staff we did get the impression that they were lacking direction and structure to their responsibilities. The wards themselves were also cramped, understaffed and lacking essentials such as mattresses, towels and linen.

This same afternoon we traveled to the Katalemwa Cheshire Rehabilitation Home to participate in a clinic. This is a charitable institution run by the Christian Blind Mission which provides rehab services to disabled children. We had met up with a wonderful staff including Dr Fulvio Francheschi. They had

a number of patients organized for us to review, each of which I felt we could help in some way. We did send three patients for further investigations including CT myelograms. One child was 14 with a 5 month old C3C4 fracture dislocation and partial cord injury.

After one day off traveling to the Bujagali Falls and the source of the Nile we resumed activities at the Mulago and the Mengo hospitals. The Mengo hospital is a combination public private institution. Some areas were very well appointed by Ugandan standards, the others were cottage type wards reminiscent of Mbarara. The theatres at Mengo were however spectacular; a by-product of the Dr Norgrove Penny era. They were clean, well appointed and well equipped. The only thing that surpassed the benefits of these theaters was the staff. The nursing and OR staff were the best yet. They were ecstatic to see their friend and colleague "Dr. Mark" and were enthusiastic, accountable, and eager to work.

During this week, we had 4 more cases primed for surgery over a three day period; An 18 year old female with a C6 burst fracture, incomplete spinal cord lesion and bilateral C7 radiculopathies, who we treated at Mulago, a 14 year old boy with a C3C4 fracture dislocation and dense myelopathy, a 26 year old male with an L1 burst and conus injury, and the 82 year old male with stenosis, the three of which we treated at Mengo.

Our initial plan called for treating the 26 year male at Mulago, however his care was compromised by the system virtually every step of the way. He was meant to get a pre-operative CT scan which did not materialize due to a combination of house staff inexperience and a lack of funding. By virtue of Mark's efforts the CT scan got done on a Saturday afternoon. He was meant to be operated on as a second case on day one in the OR, however due to an unexpected late start and a less than motivated anesthesiologist he did not get his surgery that day. Again due to Mark's resourcefulness and efforts he was transferred to Mengo hospital where we were finally able to complete his care.

After all was said and done we had reviewed approximately 50 patients and operated on 8. The pathology was relentless. The health care provision in Uganda is inconsistent at best. The system is plagued by different problems than we experience in North America, yet the outcome is surprisingly the same. For instance, trying to obtain a CT scan in a timely fashion; In Uganda the patients can't afford to pay for it, in North America the insurance companies frequently deny coverage, the ultimate result is that if some one does not take responsibility or is accountable health care is delayed or denied.

In Uganda the economics of health care are also severely skewed. A thoracolumbar CT scan cost the equivalent of $120 US which included the radiologist's interpretation and the technical costs. Yet with the low relative cost of a CT scan the hospital still has no linens to provide to the patient or to drape a sterile field during surgery.

I was troubled to realize that what we take for granted or consider disposable in our high tech, high cost health care environment, is absolutely priceless in Uganda. The simplest things like tape, gauze bandages, sterile dressings, OR linens are all considered a limited resource and potentially re-usable in Uganda.

Intra-operative sterility appeared to me to be an enigma. The staff were absolutely adamant that street shoes be removed for dedicated theatre shoes, yet there was only a limited supply of disinfectant and frequently the instrument packs which were sterilized came to the operative field contaminated or wet. The most fascinating aspect of operating in Uganda was again just to emphasize the point, the recycling of equipment, supplies, and even intra-operative sponges for multiple surgeries.

Towards the end of our visit, we met with Dr. Beyeza, Chief of Orthopaedics at Mulago, and Angela Balaba. Ms. Balaba is an impressive and motivated individual who is a wheelchair dependant paraplegic as a result of a motor vehicle accident. In response to her struggles with her injury, treatment and rehabilitation, she founded the Ugandan Spinal Injuries Association. As a result of their combined interests, the two share a vision to create a comprehensive spinal program with a dedicated

ward and theatres. After much discussion it was clear to me that their goals are admirable, however their focus was unrealistic. It is clear they should not expend their efforts accessing or purchasing "pedicle screw" systems. What is most needed is expertise and appropriate first response care for the spinal injured patient. The efforts expended should be on teaching the first responders to protect the spine and training the house staff and nurses on appropriate work up, traction, prevention of bed sores, pulmonary care and nutritional care for these unfortunate patients.

One of the most troubling circumstances I had witnessed in Uganda was the lack of expertise in the maintenance or repair of equipment. Some of this is due to economic issues, where they are simply unable to afford the manpower, and some was just lack of training. As an example, at the Mbarara hospital a well meaning donation of a CT scanner has been sitting idle in a shed, still unassembled for the past 5 years. Apparently one piece of hardware or software is missing, no one seems to know what, and the administration can not afford to get the manufacturer to send the expertise to sort out the problem. The result is a well meaning, yet wasted effort. Other examples exist of ward equipment, operating room equipment and even fluoroscopic units, that with just minimal maintenance could be very functional.

I found the Ugandan health care professionals a compassionate, caring and for the most part dedicated group. What is lacking is basic infrastructure, i.e. appropriate trauma triage, adequate ward conditions, appropriate equipment maintenance, etc. At this stage of development of their health care infrastructure, I would not recommend the acquisition of more costly equipment. What is absolutely essential is education and training.

Somewhere, over time, I either consciously or sub-consciously, developed the misconception that on this trip, I would encounter a less than compassionate and caring society. This was far from the truth. In Uganda I found the patients and families to be respectful, caring and devoted to each other. They are accepting of their misfortune and do not blame anyone else. They are remarkably resilient and resourceful. Despite what would seem a significant disability they persevere and survive. The reality of it all is that they simply do not express their emotions as openly and are far more accepting of their predicaments.

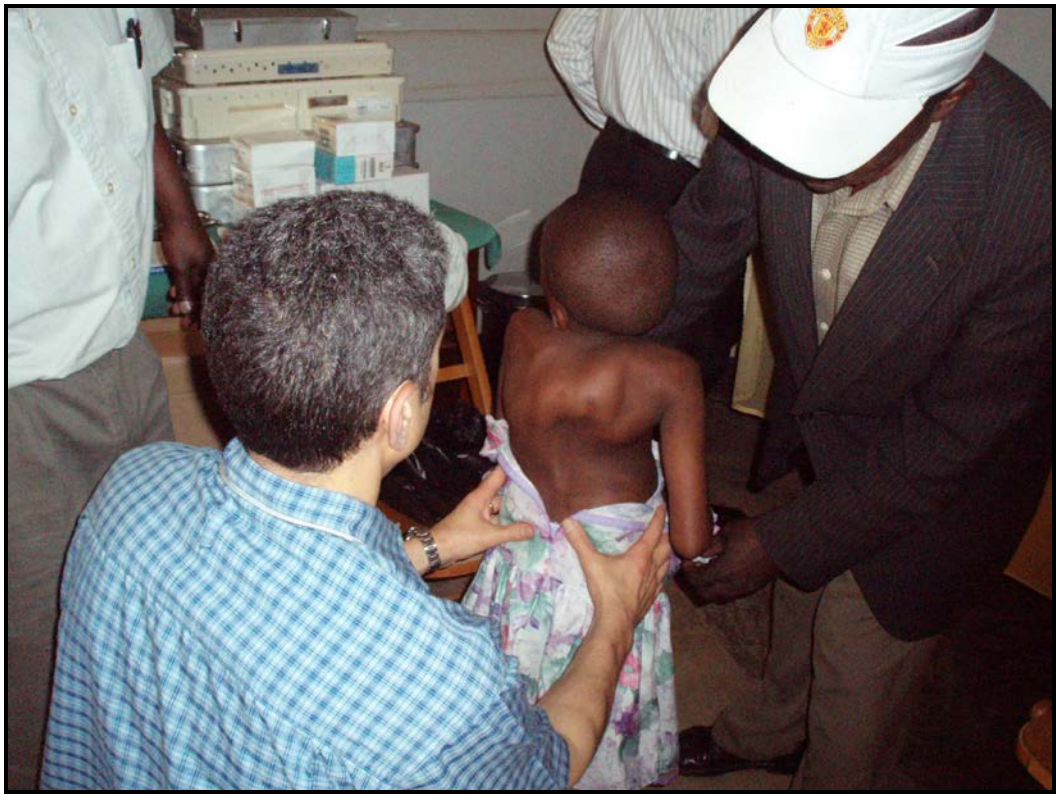
The Spine Surgery Camp was a tremendous experience. Much of the pathology I saw was preventable or at the least the ramifications could be minimized with early and appropriate basic treatment. I anticipate that in the future we will be able to expand this program to a comprehensive spine initiative involving teaching, research and clinical care. I will regard this experience as a highlight of my career and do look forward to many more visits to Uganda.

Respectfully Submitted

Isador H Lieberman MD MBA FRCS(C)

PICTURE GALLERY

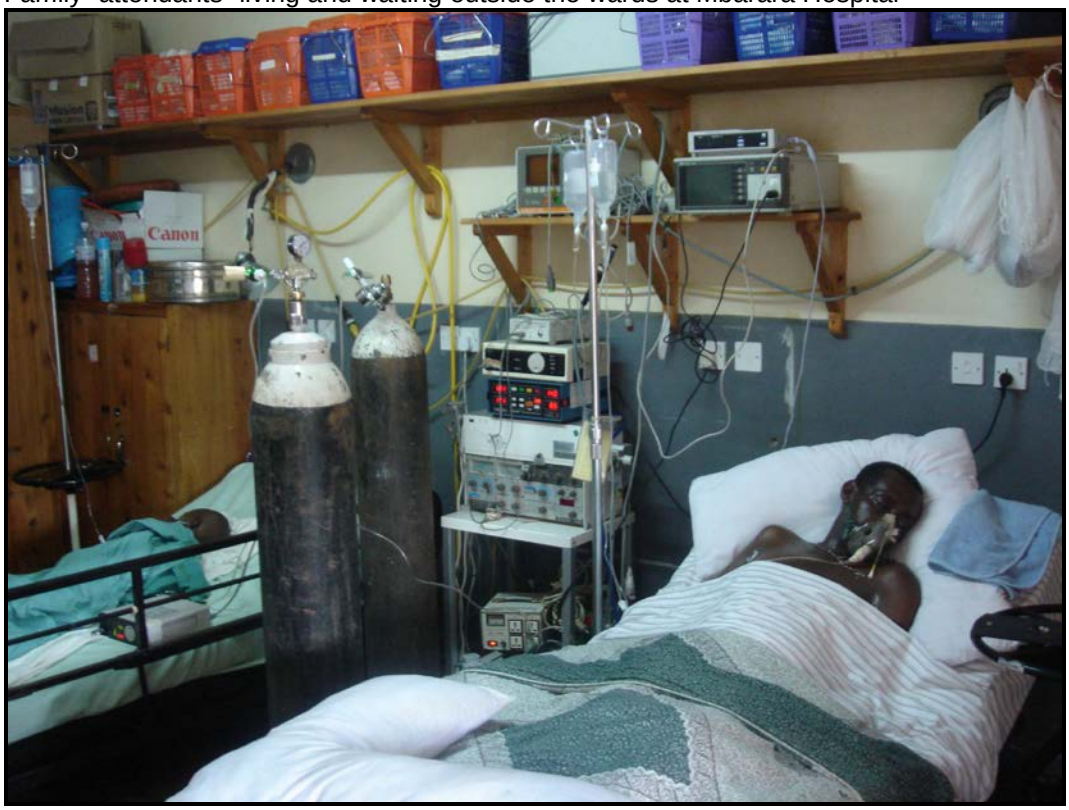
Transporting the equipment between sites



The ravages of spinal tuberculosis in a child

The in-patient ward at Mbarara Hospital

Family “attendants” living and waiting outside the wards at Mbarara Hospital



The “make shift” ICU at Mbarara Hospital

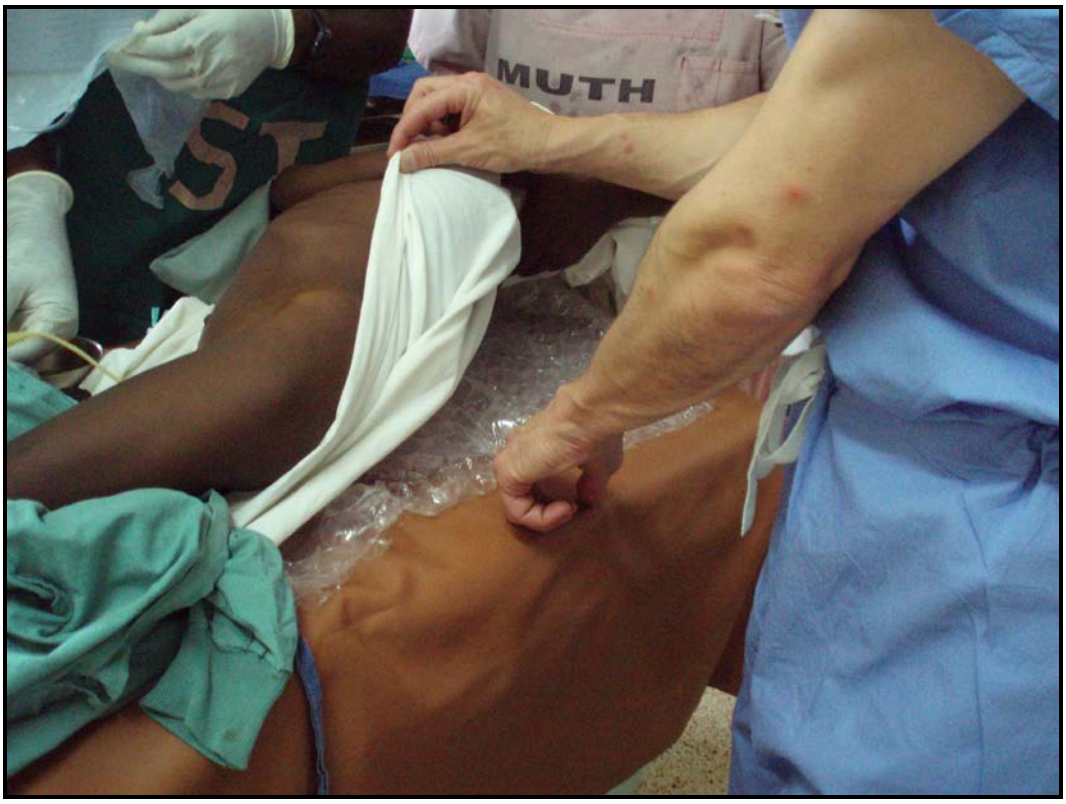
The operating theatre at Mbarara Hospital

Patient in cervical traction

Transporting patient to X-ray

The Spine Surgery team at work, Mulago Hospital

The in-patient ward at Mengo Hospital



Bubble wrap used to pad patient during surgery

The Orthopaedic Department and HVO offices at Old Mulago Hospital