

Multi-Institutional Neurosurgical Training Initiative at a Tertiary Referral Center in Mwanza, Tanzania:

Where We Are After 2 years

Lewis Zhiyuan Leng MD; Jan Coburger; David Rubin MD; Gerald Mayaya; R Mendel; Isidor Ngayomela; Dilantha B. Ellegala MD; Marcel E Durieux; J Nicholas; Roger Hartl MD

Dept. of Neurosurgery, Weill Cornell Medical College, New York, NY, USA; Dept. of Neurosurgery, University of Ulm, Ulm, Germany; Dept. of Surgery, Bugando Medical Center, Mwanza, Tanzania; Dept. of Medicine, Medical University of South Carolina, Charleston, SC, USA; Dept. of Neurosurgery, University of Virginia, Charlottesville, VA



Introduction

The dearth of neurosurgical care in Sub-Saharan Africa is well-recognized but the true burden and breadth of disease are not well-studied. A multi-institutional initiative was started in Mwanza, Tanzania, to ascertain the neurosurgical needs and begin addressing those needs by training local general surgeons in basic neurosurgical procedures. We report on our 2+ year experience with a focus on the most recent neurosurgical cases.

Methods

The initiative began in September 2009 with initial visits aimed at assessing the neurosurgical needs and the feasibility of performing neurosurgical procedures at this tertiary referral center. From September-December 2011, two visiting neurosurgeons collaborated with a local surgeon to manage the care of all neurosurgical patients. We prospectively collected data on all patients that underwent a neurosurgical procedure during this study period.

Results

During the study period, 62 patients underwent a neurosurgical procedure. Pediatric cases (74%) included VPS, myelomeningocele and encephalocele repair (52%, 11%, and 6%, respectively). There were 3 pediatric cases (5%) of craniotomy for depressed skull fracture. 16 adult cases (26%) included 12 for cranial/spinal trauma. All adult TBI patients were discharged with GOS =4 except for one poly-trauma patient. All spine trauma patients either improved or remained stable neurologically. The limited spinal instrumentation was reserved for one patient with a complex, L4 fracture-dislocation. 4 lumbar degenerative spine cases were performed. One mortality occurred in a 3-month old patient following encephalocele repair. At the end of the training, the local surgeon could perform all VPS cases, trauma craniotomies, thoracic/lumbar decompressions, and the majority of myelomeningocele/encephalocele repairs independently.

Conclusions

The neurosurgical diseases observed in northwestern Tanzania are not limited to pediatric hydrocephalus and NTD disorders, but include a significant burden of cranial/spinal trauma. We present the results of a multi-institutional 2+ year initiative to provide basic neurosurgical training to local surgeons in this severely underserved region.

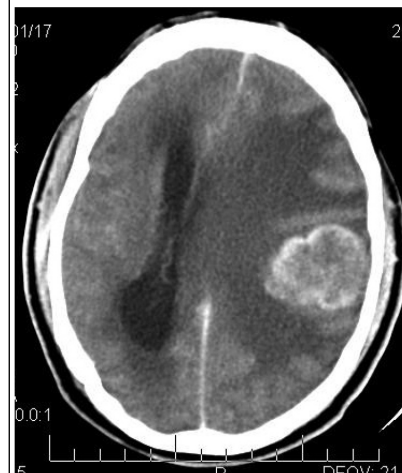
Learning Objectives

Participants should be able to: 1) recognize the lack of neurosurgical care in Sub-Saharan Africa, 2) recognize the burden and breadth of neurosurgical disorders encountered at a tertiary referral center in northwestern Tanzania, 3) the feasibility of introducing basic neurosurgical training in underserved regions of the world through multi-institutional international efforts.

References

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Figure 1A



45yo male with 1yr of headaches and progressive right-side weakness. Suspected tuberculoma given recent diagnosis of TB. Underwent left frontal craniotomy for resection of mass. Confirmed tuberculoma on pathology.

Figure 1B



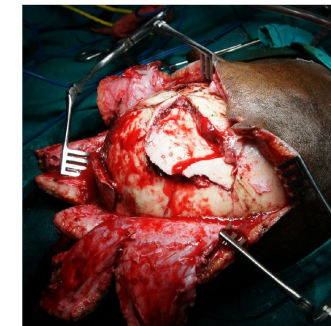
Gross specimen of left frontal tuberculoma

Figure 2A



40yo female presented after machete assault with right-side hemiparesis and multiple open lacerations draining CSF and neural tissue. Plain radiograph demonstrated multiple fractures.

Figure 2B



The patient underwent elevation of depressed skull fractures, washout and debridement of wounds and underlying cortex.