

## **Pattern of congenital craniospinal anomalies among neurosurgical patients in a tertiary hospital in Nigeria**

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### **ABSTRACT**

**Background:** Congenital craniospinal anomalies are being reported more often than in the past by various neurosurgical centres in Africa. This study evaluates the patterns of various craniospinal anomalies and their possible risk factors in a new neurosurgical centre in Nigeria.

**Methods:** The study included all patients with congenital craniospinal anomalies managed at the LAUTECH Teaching Hospital, Osogbo, Nigeria, from January 2013- December 2015. Frequency and pattern of these anomalies were recorded. All patients were assessed for associated anomalies. Data related to age, gender, type of anomaly, location and maternal details including socio-economic class, febrile illness in pregnancy and drugs used in pregnancy were recorded on a pre-designed proforma. Cranial CT/MRI and TFUSS were obtained according to the type of the lesion. Surgical interventions were performed as required.

**Results:** Nineteen patients with congenital craniospinal anomalies were seen during the study period. Ten of the cases were male (52.6%). The most common anomaly observed was hydrocephalus (n:10, 52.6%) which is either in isolation (n:7,70%) or combined with spina bifida(n:3,30%), followed by spina bifida which was found in 5 patients (36.8%). Of the spina bifida, myelomeningocele accounted for (n:4,80%). Encephalocele was seen in (n:3, 17.6) and they were all occipital. There was a case of craniosynostosis. Majority of patients with hydrocephalus had VP shunt (n:7, 70%) while 1(10%) had ETV. Surgical repair was performed for the neural tube defect cases. None of the mothers had peri-conceptional folic acid supplementation, three (15.8%) of them had febrile illness in pregnancy while 1 (5.3%) had exposure to irradiation. Four (21.1%) of the mothers used anti-malarias early in pregnancy. None had family history of CNS anomalies.

**Conclusion:** Congenital craniospinal anomalies represent a significant group of neurosurgical conditions seen at our centre. Public awareness of peri-conceptional use of folic acid to reduce the risk of mothers having babies with congenital CNS anomalies need to be promoted.

### **Keywords:**

*Neurosurgery, Africa, Brain, Spinal Cord, Malformation*

## **Efficacy of Scotchcast as external orthosis for spinal instability**

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### **ABSTRACT**

**Background:** Management of spinal instability with external orthoses affords the patients to be managed non-operatively with the additional advantage of outpatient care. This study was designed to determine the efficacy of Scotchcast as external orthosis for spinal instability.

**Methods:** Patients' data were collected prospectively and patients who had spinal instability with minimal spinal deformity and incomplete neurological deficits were included. Minerva jacket was applied for cervical spinal instability and thoracolumbar spinal orthosis (TLSO) was applied for thoracic and lumbar spinal instability using Scotchcast. Primary outcome measures were the ability of the cast to retain its stabilizing effect and healing of the spinal instability as demonstrated by dynamic X-ray. Presence of pressure sore from the cast was used as a secondary outcome measure.

**Results:** Sixty patients were included in the study. Age range was 2 to 77 years. Male to female ratio was 7:3. Sixteen patients with cervical spinal instability had Minerva jacket while the remaining patients with thoracic and lumbar spinal instability had TLSO. Forty-six patients used the orthoses for 3 months while 13 patients used their orthoses for 4 to 6 months. Fifty-five (92%) patients had satisfactory spinal stabilization. One patient had a minimal kyphotic deformity and three patients had persistent spinal instability. There were no patients with neurological deterioration during the review. All the orthoses were intact at the time of their removal.

**Conclusion:** The use of Scotchcast as external orthosis is a valid option in the management of selected patients with spinal instability with a good outcome.

### **Keywords:**

*Scotchcast, External orthotic, Spinal instability, Stabilization*

## **Impact of dedicated trauma Intensive Care Unit Management on outcome of traumatic brain injury at National Trauma Centre, Abuja**

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### **ABSTRACT**

**Background/Objective:** Traumatic brain injury (TBI) is the most common cause of intensive care unit (ICU) admission worldwide. Unlike the practice in many developed countries, most ICU units in Nigeria admit and manage multispecialty cases. A previous study from our institution found a mortality rate of 68.4% among head injured patients managed in our multispecialty ICU. The aim of this study is to evaluate the effect of dedicated trauma ICU management on the outcome of patients with TBI.

**Method:** This is a one-year retrospective cohort review of patients with TBI managed in our trauma ICU. The medical records of patients with TBI managed in the 12 bedded trauma ICU were studied including demographic characteristics, mechanism of injury, Glasgow Coma Score (GCS) at admission, neuroimaging and interventions. The primary outcome was the Glasgow Outcome Scale at discharge from the hospital.

**Result:** Among 134 patients admitted into the trauma ICU within this period, 88 (65%) had TBI. Among patients with TBI, 74 (84.1%) sustained severe head injury and 12 (13.6 %) had moderate head injury. Their ages ranged from 3 months to 78 years, with a median age of 35 years. The Male to Female ratio was 4.5:1. Motor vehicular Accident (MVA) was the most common cause of TBI. The mean injury to presentation interval was 23.98hrs, while the mean emergency presentation to ICU admission interval was 37.98hrs. The overall mortality rate was 47%, with the highest mortality (87.8%, n=36) seen in patients with severe TBI.

**Conclusion:** A modest reduction in mortality rate was observed compared to a previous study from our center.

### **Keywords:**

*Traumatic Brain Injury, Trauma ICU, Management, Outcome*

# Neurosurgeon and frontline Doctor: Navigating neurosurgical practice during COVID-19 pandemic

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## **ABSTRACT**

**Background:** The growing population of COVID-19 positive patients worldwide in the face of a relatively static population of health workers including specialist like neurosurgeons means that some of the highly skilled specialists will be recruited as frontline health workers. The objective of this review is to document the experience of a neurosurgeon at the peak of COVID-19 pandemic.

**Methods:** There was a holding ward for suspected COVID-19 patients and a COVID-19 treatment ward for confirmed COVID-19 positive patients. Only suspected patients had COVID-19 screening. Patients with confirmed COVID-19 infection were scheduled for surgery with full PPEs for the theatre staff but routine patients were scheduled for surgery with hospital staff using KN95 respirator and routine operating gowns. The data of patients who required neurosurgical procedures and presented to our hospital during the lockdown were reviewed.

**Results:** Nineteen patients presented to the author and required surgical intervention during the lockdown. The mean age was  $49 \pm 26$  years and age ranges were 5 - 85 years. There were 8(42.1%) males and 11(57.9%) females. The most common lesions were brain tumor 10(52.6%). Only one patient had preoperative COVID-19 screening. All patients were managed as per pre-COVID-19 era without delay. There was one mortality due to late presentation.

**Conclusion:** There is need for neurosurgeons to adopt necessary modifications based on the prevailing circumstances in their respective regions and hospitals to offer their patients the best possible outcome during the ongoing COVID-19 pandemic.

## **Keywords:**

*COVID-19, Pandemic, Neurosurgery, Patients, Neurosurgeon, Frontline doctor*

# **Cavernous malformation presenting with post-partum intracranial hemorrhage: A case report and review of literature**

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## **ABSTRACT**

We report a case of intracranial hemorrhage secondary to ruptured cerebral cavernous malformation (CCM) in a 36-year-old Nigerian female. To our knowledge, this is the first of such report in a Nigerian in the post puerperal period. We highlight its significance as a salient clinical mimic of peripartum eclampsia requiring a heightened clinical acumen. We also reviewed scientific literature relevant to the presentation and management of cryptic vascular malformations presenting with intracranial hemorrhage and discussed the challenges of diagnosis and multidisciplinary care of cryptic cerebral malformations associated with peripartum rupture and intracranial hematoma in our peculiar setting identified with significant resource constraints.

## **Keywords:**

*Brain vascular malformation, Eclampsia, Computerized tomographic scan, Magnetic resonance imaging, Craniotomy*

## **Cervical myelomeningocele: Our experience with eight cases**

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### **ABSTRACT**

**Background:** Cervical myelomeningocele are rare forms of myelomeningocele with near normal neurologic functions compared to lesions at other levels of the spine. They constitute a peculiar type of myelomeningocele based on their location, morphology and less disabling presentation in most cases.

**Objectives:** This study examines the characteristics, challenges and outcome of managing cervical myelomeningocele in a regional neurosurgery centre in North-West Nigeria.

**Methodology:** This is a retrospective study from January 2011 through September 2016 that included patients with cervical myelomeningocele.

**Result:** Eight (3.3%) out of 243 patients with myelomeningocele had cervical myelomeningocele. The male to female ratio was 5:3. Three patients had ulcerated myelomeningocele and one had right upper extremity monoparesis at presentation.

**Conclusion:** Cervical myelomeningocele, though rare, are also seen in our subregion. Surgical detethering of the fibroneurovascular band is central to their repair.

### **Keywords:**

*Neurulation, Fibroneurovascular stalk, Myelocystocele, Tethered bands, Kinked cord*

## **Playing wind instruments as a risk factor for chronic subdural haematoma: A report of two cases**

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### **ABSTRACT**

Chronic Subdural Haematoma is a common neurosurgical disorder often requiring surgical intervention. The incidence increases with age but can occur in the young. In the young, no known aetiological risk factor may be present. We present two patients managed for chronic subdural haematoma, one a teenager, the other an elderly man with no apparent aetiological factor other than playing of wind instruments. From mounting evidence in the literature regarding the Valsalva effect produced by wind instruments and previous reports linking them to chronic subdural haematoma, we opined that history of playing wind instrument should be explored in patients with this condition especially when no other risk factor is identified.

### **Key words:**

*Wind instruments, Valsalva effect, Risk factor, Young, Elderly*

## **Ultrasound guided extraction of intracranial bullet, an option in a resource poor setting**

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### **ABSTRACT**

**Introduction:** Craniocerebral gunshot injuries are emerging epidemics in Sub-Saharan Africa due to political unrest. There is a need for a robust neurosurgical protocol for managing patients. Metallic components of impaled bullets are injurious to the brain, and should be removed where feasible. Image guided extraction of the bullet reduces iatrogenic injury. Stereotaxy, intraoperative MRI, and C-arm are often non-existent in resource poor settings. Ultrasound is an alternative, though less favoured. It is readily available and users friendly.

**Case Description:** A 24 year old boy with deep seated right temporal bullet sustained from a stray bullet. He had right temporal craniectomy, ultrasound scan was used to localize the bullet, then durotomy plus gyrotomy was done leading to the extraction of the bullet located deep in the right temporal lobe.

**Conclusion:** Ultrasound guidance is a viable option in the extraction of intracranial bullet in resource poor settings.

### **Keywords:**

*Ultrasound- guided extraction intracranial bullet, Option resource poor setting*



# Charting a course for outpatient telemedicine in surgical neurooncology in a Sub-Saharan African setting with a leverage on the Covid-19 pandemic: A pilot study

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## ABSTRACT

**Background:** The patients with brain tumors in the LIMCs are faced with challenges, varying from deficits in neurosurgical manpower, low/absent health insurance coverage, and inadequate healthcare infrastructure. The Covid-19 pandemic has further impacted the care of these patients due to lockdown measures, closure of outpatient clinics and suspension of routine operating schedules. We report our experience, in studying the feasibility and acceptability of outpatient telemedicine in surgical neurooncology patients, which to the best of our knowledge, is the first from Sub-Saharan Africa.

**Methods:** Brain tumor patients from our departmental database were recruited. Instructions regarding videoconferencing consultations were discussed with them and their caregivers. A commercial videoconferencing platform, Zoom, was used. A questionnaire was administered afterwards to the patients for their evaluation of the process. Descriptive statistics was used to analyze our findings.

**Result:** Twenty consultations were held for 19 patients; 7 males and 12 females. 8 were post-operative patients. The age range was 15years-84years. The mean consultation time was 30minutes with a range of 20-45 minutes. Imaging was requested in five of the patients due to new symptoms, or for follow up. All the patients were comfortable with the consultation, which they perceived to be helpful, time and cost saving. The average data cost was 1000Naira (\$3) compared to the average cost for clinic attendance 12000Naira (\$30). 36% of the patients will opt for telemedicine consultation in lieu of physical clinic consultation.

**Conclusion:** Outpatient telemedicine for surgical neurooncology in Sub-Saharan Africa is feasible, cost effective and acceptable. This possibility should be explored to improve patient care.

## Keywords:

*Telemedicine, Surgical Neurooncology, Sub-Saharan Africa, Covid-19*