

Pattern of Neurosurgical Practice in Bauchi during COVID-19 Lockdown

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Received: August 30, 2022 Published: October 22, 2022

Abstract

Introduction: Novel Corona virus 2019 disease and pandemic affected all sectors in the world without sparing medical services and admissions. Researchers have made several attempts to evaluate the impact of the pandemic on different medical specialties. This study aim to share our neurosurgical services experience during the COVID -19 pandemic.

Material and method: A retrospective case series study. All neurosurgical patients who had surgical operations during the study period (May 2020 - April 2021) were included in the study. Demography, mode of presentation, diagnosis, type of operation and outcomes were collected and analyzed.

Results: One hundred and twenty six patients had surgical operations during the pandemic lockdown with mean age of 35.5 years. Male accounted for the majority (76%). Trauma was the leading condition necessitated neurosurgical operations followed by congenital cases, 72% and 16.7% respectively. Most of the cases operated were admitted as emergency cases. Our outcomes were favorable in most of the cases but with overall mortality of 9% that were not related to COVID-19 infection.

Conclusion: COVID-19 pandemic presented uncommon challenges that were never envisaged before as regards to neurosurgical practices. Strengthening, and upgrading our facilities will prepare our practice to meet future challenges.

Keywords: Neurosurgery, Pattern of practice, COVID-19 pandemic

Introduction

The novel Coronavirus 2019 (OVID-19) is an infectious and life threatening condition across the globe. A viral disease caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) with its symptoms ranging from mild cold-like to severe respiratory distress and respiratory failure. (1) The severity of the disease vary from individual to individual and among factors considered are age, comorbidity and immune response. The first case was reported in Wuhan region of China in December 2019 and World Health Organisation declared COVID-19 as a global pandemic on 11th March 2020. (2, 3)

The first case was reported in Nigeria on 27th February 2020, over two years after, 15th August 2022, Nigeria has recorded 262,402 cases with 3,147 mortalities. The world has recorded 590,455000 cases with 6,440877 mortalities.

Nigerian government instituted measures to curtail the spread of the infections and mitigate its effect on the general population among which are; personal hygiene, hand sanitizing, social distancing, isolation and treatment. In our hospital likewise, strict prevention and screening were embarked upon and resultant effect on the healthcare services. The entire health care system including neurosurgical care was largely affected by the increased burden of the pandemic all over the world. (4, 5, 6) The outlook is similar in our hospital, where neurosurgical services were prioritized but in favor of neurosurgical emergencies.

Our facility offered neurosurgical care to the local population in the state and others from few neighboring states during the COVID-19 pandemic. The aim of this study is to study the range of neurosurgical services and cases we rendered during the COVID-19 pandemic.

Materials and Method

A retrospective cross-sectional study. The study included all patients that had neurosurgical care at Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH) Bauchi, Nigeria during the pandemic. The study period was between May 2020 and April 2021. Approval obtained from the hospital research and ethic committee (ATBUTH REC).

Data were collected retrospectively from patients' medical records. The parameters obtained include; age sex, mode of presentation, diagnosis, treatment, duration of hospital stay and outcome.

The data were analyzed using SPSS IBM Statistics Version 22 and were expressed in mean, standard deviation, frequency and percentage.

Results

We studied 126 patients that had neurosurgical procedures out of 625 patients managed for neurosurgical cases in ATBUTH during the pandemic in Nigeria. The mean age was 35.3 years, with standard deviation of 19 years. Male gender constituted 76% of the study population.

Table 1: Demography of the patients.

Variable	N=126
Age, yrs (Mean & SD)	35.3 (19)
Gender	
Male	96 (76%)
Female	30 (24%)
Category by Diagnosis	
Trauma	91 (72%)
Infection	5 (4%)
Tumour	2 (1.6%)
Congenital	21 (16.7%)
Degenerative	4 (3.2%)
Vascular	3 (2.4%)
Category by urgency	
Elective	19 (15%)
Emergency	107 (85%)

Trauma constituted the most managed cases during the pandemic (72%), followed by congenital cases (16.7%) and the least among was tumor cases (1.6%) as shown in Table 1. A total of one hundred and seven cases (85%) were admitted and managed on emergency basis.

The Figure 1 shows the frequency-graphical distribution of cases operated during the COVID-19 in our facility.

The outcomes recorded in various cases managed were favourable in most cases. The favourable outcome in percentage are as follows; neurotrauma 88%, infections 100%, tumour 100%, congenital 90.5%, degenerative 100%, vascular 33% (Table 2). Our complication rate was 9% with wound dehiscence having the highest (4.1%) and meningitis as lowest complication rate as shown in Table 3. Figure 2 shows the number of neurosurgical cases managed one year before COVID-19, during the pandemic and one year after the lockdown. There was drastic reduction in patients managed during the pandemic compared to a year before and gradual increase in the number one year after but still less than the number recorded before the pandemic.

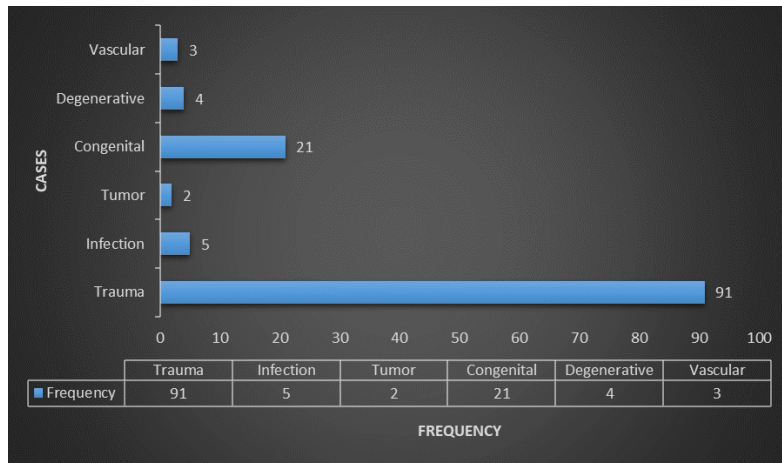


Figure 1: Category and frequency of cases operated.

Table 2: Neurosurgical outcomes.

Variables	Outcome N =126 (100%)	
	Favourable	Unfavourable
Trauma	80 (88%)	11 (12%)
Infection	5 (100%)	0 (%)
Tumour	2 (100%)	0 (0%)
Congenital	19 (90.5%)	2 (9.5%)
Degenerative	4 (100%)	0 (0%)
Vascular	1 (33%)	2 (67%)

Table 3: Complication pattern.

Variables	N= 11 (9%)
Wound dehiscence	5 (4.1%)
CSF leak	2 (1.6%)
Meningitis	1 (0.8%)
Shunt infection	3 (2.5%)

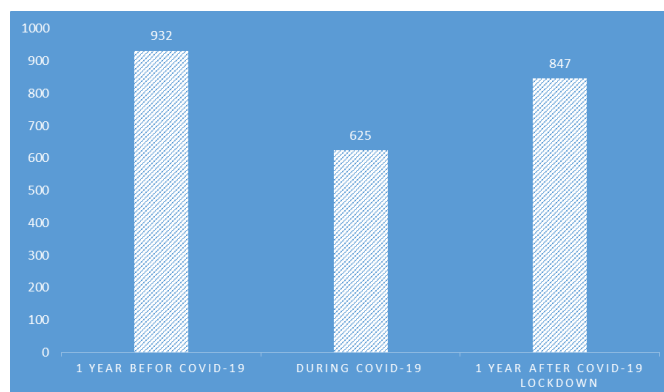


Figure 2: Distribution neurosurgical cases managed before, during and after COVID-19 lockdown.

Discussion

Neurosurgery services in our facility were rendered, however this report describing the spread of the services rendered and the effect of COVID-19 on our routine services. At our facility priority was given to neurosurgical emergency services even as we complied with lockdown. In our study most the cases operated were emergencies (85%). Trauma cases were the leading cases operated during the pandemic, this similar to our normal routine operations before the pandemic and this has been reported by another author. (7)

It is worthy to note that our hospital is the only facility offering neurosurgical care in the state with other five (5) bordering/ neighboring states depending on the services to cater for her population. The turn out during the pandemic was low, due to fear of spreading and contacting infection by the public and hospital workers. The effect of COVID-19 on our practice during the pandemic was comparable with local and international experiences. (8, 9, 10, 11) Studies from Bajunaid et al and Fujimoto et al showed a change in pattern and volume of cases during the pandemic, which is tandem with our findings. (12, 13)

Outcome of our surgical interventions were favourable in most cases except in cases with spontaneous intracerebral haemorrhage from hypertensive patients. The mortality recorded was in single digit (9%) which is slightly higher in studies by Saeed et al (4.1%) and Bajunaid et al (1.7%) during the pandemic. This high rate of mortality in our study may be attributed to the higher number of emergencies in our case series and also smaller amount of cases in our study compared to study population in Bajunaid et al and Saeed et al studies.

Conclusion

Our neurosurgical practice during COVID-19 was describe in this study and it has brought to fore the need for various modifications in neurosurgical practices among which include; increase neurosurgical capacity in our facility, commencing neurosurgical services in other neighboring states so as to improve accessibility to neurosurgical practices even to our rural population. Due to significance of this service, irrespective of the pandemic in near future, neurosurgical services should be continued in full capacity but ensuring protection of patients and clinical staffs at all cost.

Sources of Funding

This research did not receive any grant from any funding institutions in the public or private sector.

Conflict of Interest

The author has no conflict of interest to declare

Author contribution

Conceived and designed the study, conducted research, provided research materials, collected, organised the data, analysed the data, interpreted the data, and wrote the whole text.

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Citation: Ogunleye OO. "Pattern of Neurosurgical Practice in Bauchi during COVID-19 Lockdown". *SVOA Neurology* 2022, 3:5, 226-230.

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