Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Letter to the Editor: "Beyond Containment: Tracking the Impact of Coronavirus Disease 2019 (COVID-19) on Neurosurgery Services in Iraq"

Letter:

The coronavirus disease 2019 (COVID-19) pandemic is one of the greatest threats to humankind. The contagion is rising at an alarming pace and is testing the limits of the health care systems worldwide. Despite stringent containment measures to stem the spread of the virus, the situation has deteriorated rapidly; the virus has now swept across the globe, with a total of 692,000 fatalities and 18.2 million confirmed cases worldwide.[1]

In Iraq, a nation that has been through cycles of ongoing violence for decades, the situation is rather peculiar. The crippled state of the health care system, the socioeconomic disparities, the lack of social security, and health insurance systems, along with the volatile political context and the absence of a stable political leadership all create a precarious and high-risk environment for a full-fledged COVID-19 outbreak.

Ironically, in the first few months of the pandemic, the virus seemed to be sparing our fragile communities, with just 42 deaths and 547 confirmed cases as of March 30, 2020.[2] However, around mid-May, and coinciding with the end of Ramadhan (Eid al-Fitr holidays), the number of confirmed cases increased 12-fold, from fewer than 3200 cases on May 15 to 36,700 on June 24.[3,4] Since then, the country has witnessed enormous daily jumps in the number of cases that quickly overwhelmed our already-strained health care system. Currently, there are 131,886 confirmed cases and 4934 deaths; the population in Iraq is 39 million (data as of the World Health Organization situation report on August 5, 2020).[5]

Hospitals across the nation have been hit hard, particularly after the drop in oil prices and the resultant cuts in government funding. While all efforts are being made to adhere to best practice guidelines, deviations are inevitable, given the country's exceptional circumstances.[6-8] In this letter, we track the impact of the pandemic on neurosurgery services at the nation's largest tertiary neurosurgery center, focus on our efforts to survive the pandemic, and on potential steps to mitigate the risk of an impending catastrophe.

THE HOSPITAL RESPONSE

Structural Reformation

The Neurosurgery Teaching Hospital (NTH) in Baghdad, Iraq, provides neurosurgical care for 4.2 million people—approximately 50% of the population in Baghdad, with a total capacity of 102 beds, 16 neurosurgical intensive care unit (NICU) beds, and 7 operating rooms. The hospital hosts 17 neurosurgeons and 10 residents.

As part of the response plan that we have introduced over the past few months, the hospital capacity has been expanded with the addition of 10 NICU beds. A new COVID-19 unit, comprising 10 beds, was also set up in the hospital. However, these measures are far from adequate and the hospital remains a full-house at all times, with at least 4 patients per hospital room, challenging the proper implementation of social distancing guidelines.

Admission Measures

The admission rate decreased to 40% of that before the COVID-19 era. Two admission pathways have been established; emergency and urgent. Time-dependent cases are directly admitted to the hospital. Cases requiring less immediate care are only admitted if the condition is deemed to be "urgent." This decision is the responsibility of a newly assembled local hospital committee, composed of 3 senior neurosurgeons. All admitted patients are screened for fever and exposure status. Symptomatic patients undergo polymerase chain reaction swap testing.

Infection Control Practices

Full personal protective equipment is only provided to workers in the NICU and those employed at the COVID-19 facility. For the majority of the hospital personnel, only basic surgical masks are available. Remarkably, in the absence of a structured ambulance network in the country, almost all trauma and other emergency cases are brought on by relatives, who seldom comply with the reception staff orders for personal protection. All this, along with the extreme shortage of terminal cleaning supplies in the hospital, dispels any efforts to curb the rate of cross-contamination in the hospital.

Changes to the Operative Workflow

In patients who are found to be positive for COVID-19, efforts are usually made to postpone surgery if the condition permits. Reducing intraoperative exposure risk is also attempted by a range of steps, including avoiding bone drilling during craniotomy; limiting the use of microscopes, endoscopes, and surgical chairs; reducing the number of theater personnel on duty; and ensuring that only senior neurosurgeons who are beyond their learning curve handle the operation. The room is then sterilized, ventilated, and isolated for the ensuing 24–48 hours. Patients are discharged early and followed up through regular, scheduled phone calls. In general, postoperative stays are now shortened to 2 days for patients requiring a craniotomy (previously was 7–8 days) and 1 day for spine cases (previously was 3–4 days).

Reduction in the Operative Capacity

On January 6, 2020, the NTH declared a delay in all elective and semielective cases until further notice to curb the spread of the virus. From January to July 2020, a total of 363 operations were performed, as compared with 948 operations over this same period in 2019, a net decrease of 61.7%. Elective spinal and peripheral nerve surgeries were mostly affected, with a total decrease of 95.3% (from 488 to 23 operations). The number of elective cranial operations went from 301 to 104, a total decrease of 34.6%. Trauma and other emergency operations were reduced to a lesser extent, from 504 to 211, a decrease of 41.8%. This reduction in trauma cases may be attributed to the nationwide curfew that has been imposed by the government and the reduction in referral rates from the other governates.

The Outpatient Department

Since January 6, 2020, hospital outpatient department visits have been limited to cases referred from regional hospitals and primary care centers, resulting in a total 45% reduction in the monthly in-person visits department visits, as compared to the pre-COVID-19 era. However, the number of referred patients surged again in July, coinciding with the nationwide closure of private health clinics. Certain presentations, primarily lower back pain and headache, showed the most remarkable decline; 65% ($P < 0.001$).

HOSPITAL INFECTION RATES

To date, 16% of hospital staff, or 48 of 300, have tested positive for the virus. As for patients, a total of 25 acute trauma cases have been confirmed to be positive by immediate postoperative polymerase chain reaction. Such situations are hazardous and require urgent legislative change that determines the COVID-19 status of all admitted patients to be positive unless proven otherwise. Nevertheless, given the existing constraints of national and institutional capital, additional measures, including greater-level strategic planning, are urgently required. In addition, national public education plans for the de-stigmatization of the disease are needed, since many reports of transmission to hospital personnel have been traced back to patients who have denied their symptoms or exposure status.

CONCLUSIONS

Here, at the NTH in Baghdad, the conditions are indicative of the country-wide situation. Given the regional, system, and resource limitations, our response has been far from ideal, which necessitates sharing this experience with the world to draw the attention of international societies and initiate collaborative plans of countries with a similar set of circumstances, which may provide a gateway from the crisis with the least-possible loss.

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