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Editorial

Neurosurgery in Covid era

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The COVID-19 pandemic has disrupted the lives of almost all inhabitants of the world. It has caused a paradigm shift in the medical and surgical care of patients. This once in a century medical emergency forced people all over the world to take unprecedented measures to deal with the issues that such a situation presents. Countries worldwide enforced lockdowns to restrict the spread of infection. Almost all medical facilities and infrastructure were diverted toward managing the novel situation brought about by the COVID-19 pandemic. Hospitals around the globe were forced to suspend their elective surgeries and formulate new guidelines and SOPs for every step of patient care from admission to discharge, taking into consideration the level of the emergency, available hospital area for treating COVID-19 patients, protection of their healthcare providers, and prevention of crowding and other factors which could facilitate spread of COVID-19. This is even more relevant in institutions in developing countries, where due to lack of infrastructure many patients are made to share same patient area. Due to the dynamic nature of the spread of COVID-19, hospitals are continually updating protocols for case management.

Like all other specialties, neurosurgery also suffered because of this need to steer all resources towards Covid-19 management. Globally, neurosurgeons reduced their frequency of performing elective neurosurgical procedures at the peak of the pandemic to preserve supplies, PPE,

blood products, and ICU beds and to minimize the exposure of health care providers to COVID-19. The American College of Surgeons¹ recommended that surgeons and hospitals consider postponing all elective surgeries until a decrease in new COVID-19 cases is achieved and the expanded healthcare infrastructure is able to support all cases. Similarly, Indian Council of Medical Research (ICMR) guidelines² mandate testing of all symptomatic patients, their direct and high-risk contacts, and all hospitalized patients who develop ILI/ SARI symptoms. It is recommended that surgical procedures be deferred for a patient who is COVID-19 positive until their test is negative. If the procedure is deemed strictly necessary for patient survival, then the lifesaving surgery may be done, with the surgical team and the entire OR staff wearing enhanced level III PPE, not only for the entire duration of surgery but also for the whole of the patient's stay in the OR. For COVID-19–negative patients, optimal individual protection standards should be maintained in consideration of the significantly high rates of false-negative results of the diagnostic tests currently used.

General precautions during operation of covid-19–positive patients:³

The route from the ward to the operating room, including the elevators, should be cleared during the transfer of a COVID-19–positive patient. The transfer should be performed by COVID-19 ward nurses in full level 3 PPE. The operating room of COVID-19–positive patients should be separate. An operating room with a negative

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atmospheric pressure setting and with independent access should be designated for all confirmed or suspected COVID-19–positive patients. During the pandemic, the same operating room, and the same continuous flow anesthetic machine, should be used only for COVID-19–positive patients.

During the operation of patients with confirmed or suspected COVID-19, all operating room staff must wear level 3 PPE under a surgical gown to prevent contamination. PPE is obligatory for all interventions involving close contacts, such as surgery, endotracheal intubation, intravenous cannulation, cardiac catheterization, and regional anesthesia. Use of powered air-purifying respirators by the surgical team is recommended. To prevent contamination, all personnel should be trained in wearing and removing PPE. After extubation, it is recommended that a patient wears a surgical mask as soon as possible. The viral exposure load of operating room staff can be considered to be proportional to the duration of the surgery. During the pandemic, the staff number in the operating theater must be reduced to the minimum. Also, all neurosurgical procedures ought to be designed to reduce operating theater time. If possible, only a single experienced neurosurgeon beyond their learning curve ought to carry out the procedure to reduce operation time and to prevent exposure of other physicians.

The suspension of elective surgeries at most hospitals has drastically changed the daily schedules of neurosurgical residents, who now find themselves with more free and unstructured time. Maintenance of essential standard medical and surgical education among residents during pandemic conditions is paramount. In our department, we have also resorted to online journal clubs, seminars, and other academic activities via webinar portals to ensure resident involvement and active learning.

Research work has been affected adversely during the pandemic. El Ghandour et al.⁴ have reported that more than half of neurosurgeons worldwide have faced suspension of scientific activities, and more than a quarter have faced a cessation of research work. It has been observed that the cancellation of academic activities and research work were more often hampered in low-income nations. Virtually all conferences of organized neurosurgical societies around the world have been either cancelled or postponed. Third-party webinars have become common during the pandemic to

compensate for the cancellation of conferences. They serve as a good “substitute teacher” at a time when classroom teaching is impractical.

Telemedicine has rapidly expanded in the pandemic and proved to be a valuable source of communication between healthcare practitioners and patients remotely. It provided a way for our patients to continue follow-up after surgeries. Practitioners and health systems will have to invest in the infrastructure necessary to both market and facilitate telemedicine as a component of practice, including the training and maintenance of key personnel, staff, and technological support in addition to the actual technology.

With arrival of different vaccines and global population rapidly being vaccinated, and Covid-19 restrictions lowered, life may slowly start to come back to normal. The advent of artificial intelligence–based diagnostic tools for COVID-19 could help us diagnose early and facilitate contact tracing to contain this virus. Use of technology, consensus building, and adaptability to new guidelines are vital for present-day neurosurgeons to optimize patient care and resident training without jeopardizing one’s own safety.


Conflict of Interest

None.

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