

Letter: Telemedicine in Neurosurgery: Lessons Learned From a Systematic Review of the Literature for the COVID-19 Era and Beyond

To the Editor:

We read with great interest the article by Eichberg et al,¹ entitled “Telemedicine in Neurosurgery: Lessons Learned From a Systematic Review of the Literature for the COVID-19 Era and Beyond,” who based on their systematic literature review of the application of telemedicine in neurosurgery found that telemedicine treatment of 99.6% of patients included in the study was successful, which clearly shows that it has a future.

In spite of the fact that telemedicine has been used in neurosurgery since 1995, this practice has not been widespread.² In some surgical specialties, thoracic and abdominal robotic telesurgery da Vinci Surgical System (Intuitive Surgical Inc) is already a fact, although it is becoming very expensive. For neurosurgery, it is a real scientific challenge. Prior to the COVID-19 pandemic, most neurosurgeons used telemedicine to assess the clinical condition and neuroform findings of patients from remote regional hospitals to estimate their possible bringing to medical establishments with high-tech neurosurgical clinics. As reasons for the limited use of telemedicine, some authors mention the nonpayment of consultations, the nonreimbursement of expenses, the inadequacy of a remote neurological examination, the difficulty in protecting patient data, the importance of a direct doctor-patient communication, the insufficient development of technologies, and the severity of most neurosurgical diseases.³ According to others, the insufficient use of telemedicine in neurosurgery is due to the unclear scope and need for telemedicine services, the lack of interstate licensing, universal technologies, and a well-defined responsibility for possible omissions.⁴ Last but not least, the lack of legal regulation of this type of services is pointed out.

The coronavirus infection (COVID-19) has had significant implications for global health, affecting neurosurgery as a specialty. Unprecedented in our time, this pandemic has forced governments around the world to impose strict restrictions on individual freedom in order to reduce the risk of spreading the virus, to protect medical personnel, and to prevent the collapse of national health systems.⁵ These measures have had significant consequences for human health because of the restriction of patients' visits to doctors' offices and their face-to-face communication with medical staff. This has necessitated the search for opportunities for virtual medical visits in support of patients, including those with neurosurgical diseases. Despite the strict measures, the COVID-19 pandemic has caused difficulties in providing healthcare to the population and has put serious financial and human pressure on healthcare systems. This has led governments to look for both ways to optimize available health resources and to provide quality healthcare. The rapid devel-

opment of information and communication technologies and their increasing application in healthcare in recent years have determined that the stress on healthcare systems can be reduced only through online medical services, offering relatively easy and safe access to patients. The strong pressure on healthcare systems due to the large number of infected patients with COVID-19 has led national governments to financially and legally encourage health professionals to use telemedicine programs, which has had a positive impact on both neurosurgeons and their patients. The wide variety of currently available free software such as Skype (Microsoft Co), Facebook Messenger (Facebook Inc), Viber (Rakuten Group Inc), and WhatsApp (Facebook Inc), the good mobile devices, and the good Internet connection allow for accurate and quality neurosurgical consultations, distance education, and exchange of medical knowledge, including teleimulations of virtual robotic neurosurgical procedures.⁶⁻⁸

On the other hand, telemedicine provides patients with greater access to specialized neurosurgical care, removes geographical barriers and reduces travel, enables patients to observe the safety requirements associated with COVID-19, reduces the loss of working time due to hospital visits, saves patients costs, and facilitates identification of potential candidates for surgery or conservative treatment.⁴ In spite of the successes, many patients and doctors prefer the use of traditional methods of consultation and treatment, which requires large-scale information programs to inform the public about the benefits of telemedicine.⁹ It should be clear that telemedicine cannot replace the direct contact between a doctor and a patient, but it can be very useful both in distinguishing emergencies from and nonemergencies and in tracking operated patients.

To ensure the continuity of the use of telemedicine even after the COVID-19 pandemic, it is crucial for the parties to adopt clear legislation to define its scope, to regulate the confidentiality of the transfer and storage of personal data, and to define the possible liability for omissions and payment for the work performed.


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