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Letter to the Editor: How the Pandemic Is Changing Neurosurgical Education in Morocco



LETTER:

We have read with much interest the letter by Kanmounye and Esene,¹ and welcome its main idea of creating a continental ground round of online neurosurgical education, while providing an insight into the Moroccan experience in this field.

From the beginning of the spread of the pandemic in Africa, affected countries needed to take proactive actions to limit its spread and prepare to manage the following socioeconomic and educational consequences. In fact, the COVID-19 pandemic challenged not only African health systems, but also African educational health systems, and pushed universities and program directors to seek alternatives and revise how they address residents' learning both during this period and for later on as well.

Because the pandemic obliged for a complete reorganization of countries' health systems to face the load of patients with COVID-19, it particularly led to a decrease in all regular medical activities (e.g., staffs, rounds, outpatient clinics, surgical learning, perioperative management),^{2,3} and for some physicians and units, a complete conversion into the care of patients with COVID-19 only.

In most departments, residents and young fellows are facing a dramatic decrease in their daily practice and a compromise for their ongoing skill set, and even a 3-month period may be of a significant impact.⁴ This is particularly true for surgical specialty residents where operative learning, represented by surgical load, is of outmost importance.

Webinars, online meetings, and case discussions have since been used worldwide as alternatives or complements, but the need for more than theoretical learning is regularly expressed. Although in most developed countries many other options are available and being offered to surgery fellows to continue practical training (cadaveric dissection laboratories, augmented reality, and 3-dimensional simulation centers),⁵ in many African low- to middle-income countries, such facilities are scarce and hardly available.

Morocco has been actively engaged in African neurosurgical education for many years. At a local level, and being aware of the burden of such a pandemic on both national and sub-Saharan African residents' and fellows' education, the neurosurgical department of ONO Hospital, part of the education training and research program in neurosurgery of Mohammed Vth University in Rabat, has implemented a series of measures to help them keep the focus on their training.

First, early during the pandemic, a reorganization of the neurosurgical departments in Rabat was decided to allow a continuity of

care for neurosurgical patients; Hôpital des Spécialités has since been designed as a COVID-19-free hospital and was assigned to receive all regional neurosurgical patients. As a result, the surgical load during this period, compared with last year's statistics, was almost comparable, allowing residents to continue on their training, while still complying with strict protective measures and local health protection policies.

Second, the regular surgical technique learning sessions have been turned into virtual meetings established weekly (typically every Tuesday using Zoom conferencing solutions [Zoom Video Communications, San Jose, California, USA]), demonstrating and discussing a case managed earlier during the week. For this purpose, all surgical steps are documented and recorded by the senior resident during the surgery to be exposed and discussed later in the session. Similarly, the training and research unit in neurosurgery converted its courses into web-based conferences over selected topics. All these measures were aimed at team-based learning with adapted content.

Third, a dry laboratory for microsurgical training has been arranged in the department to allow residents to improve their surgical skills and handling of microinstruments over a real operating microscope (Carl Zeiss OPMI CS NC2 [Carl Zeiss Microscopy GmbH, Jena, Germany]). This included microsuturing on compresses, synthetic vessels, and chicken wings. Dissection over fresh animal brain (sheep or veal) was also scheduled for senior residents. Special planning was prepared during their off-duty hours, and a registry record was created to follow their improvements. Anatomic models (for selected cranial approaches) are also being prepared.

At a national level, the 2 national neurosurgical societies (Moroccan Society of Neurosurgery and Moroccan Society of Spine and Spinal Cord Surgery) have been actively engaged in a series of webinars, typically twice a week, with both national and international speakers, bringing into the discussion participants from many continental and intercontinental scientific societies (e.g., Continental Association of Neurosurgical Societies, PanArab Neurosurgical Society, French Speaking Neurosurgical Society). From another perspective, these initiatives may be regarded as the beginning of an early continental collaboration in the field of neurosurgical education.

That being said, we think a continental grand round of online neurosurgical education, with adapted junior to senior content, will be of great added value, and have a positive impact to the point that it will favor the sense of partnership and collaboration between countries that share similar conditions and resources, and reinforce the global neurosurgery initiative. The appropriate frequency, content, and learning needs are to be further discussed to meet participants' expectations.

From this pandemic, many lessons are to be taught. It is our responsibility to continue patient care during the pandemic, but as academics, tutors should also be able to guarantee continuous medical education to residents and fellows. All these measures

will represent a new standard toward a better learning experience, keeping in mind that when fishermen do not go to sea, they mend their nets.

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