

Letter: News From the COVID-19 Front Lines: How Neurosurgeons Are Contributing

To the Editor:

Below, we chronicle how the neurosurgery department at our institution, the Mount Sinai healthcare system, implemented a crisis plan and assisted with the care of the most critically ill COVID patients. The first documented positive infection occurred in New York City on March 1. At this time, it was evident that there was no geographical boundary for this disease. One week later, the Mount Sinai Hospital System implemented an emergency response to address concerns regarding intensive care unit (ICU) capacity. On March 16, the surgical stratification system was implemented to prohibit all elective procedures. Concurrently, all but emergent outpatient visits were transitioned successfully to telemedicine platforms. All advanced practice providers in the neurosurgery department were redeployed to emergency rooms and medicine wards, while administrative assistants and outpatient clinical nurses were given technical support to perform telehealth work remotely. Our administrative managers maintained extensive, ever-changing staffing schedules for all the clinical and administrative staff. Our research staff was also enlisted for redeployment to COVID-19-specific research efforts. Within 1 wk, the number of critically ill COVID patients was threatening to overwhelm the Mount Sinai healthcare system and the decision was made by the Institute of Critical Care Medicine at Mount Sinai to increase the ICU capacity to 200. To help relieve this burden, neurosurgery attendings were asked to volunteer for duty in the ICU.

NEUROSCIENCES ICU PREPARATION

The neurosciences intensive care unit (NSICU), a brand-new 18-bed unit, was the second ICU to be transformed into a COVID ICU. Meanwhile, all elective cases were canceled beginning on March 23, which reduced the usual number of postoperative patients into the NSICU.

When our neurocritical-care attendings were redeployed on March 24 to take care of patients in the NSICU-turned-COVID ICU (NCICU), the neurosurgery chief residents took over the Neuroemergencies Management and Transfers (NEMAT) program. Shortly thereafter, a policy was implemented, whereby all patients being admitted to the hospital were swabbed for the COVID-19 virus. Any critically ill patient with a neurological problem (stroke, subarachnoid hemorrhage, traumatic brain injury, etc) and a positive COVID test was admitted to the NCICU. Neurocritical patients with a negative COVID test were kept in the NSICU, while patients with neurocritical status in whom there was a reasonable suspicion for COVID were kept in one of the 2 negative-pressure rooms of the NSICU until their

test results were available. Despite the designation at a “neuro-COVID ICU,” fewer than 15% of the patients admitted suffered severe neurological problems, and several of them were noted to have incidental COVID positive status in the setting of a neurological emergency.

ROLE OF THE NEUROSURGEON

As the pandemic peaked in New York City, our hospital system admitted nearly 2000 COVID-positive patients (more than double the documented COVID patients in the entire city of San Francisco at the time of writing this publication). The neurosurgery attendings took on several important roles in the NCICU. They participated in direct patient care, managing critically ill patients under the supervision of a neurointensivist. They acted as a liaison for the various consulting teams, such as infectious disease (ID) and nephrology. They were also tasked to facilitate communication with families, as the health system had limited visitation to only the pediatric and neonatal ICUs and end-of-life situations.

All of our educational conferences, including radiology case conference, grand rounds, and vascular rounds, were moved to the Zoom platform to uphold the health system’s social-distancing practices. Global neurosurgery grand rounds were organized in collaboration with neurosurgery departments from different parts of the world, including Taiwan, Italy, Germany, Switzerland, and locally, to share experiences about how different departments were handling neurosurgical cases and reorganizing their efforts to support their critical-care colleagues

Disclosures

The authors have no personal, financial, or institutional interest in any of the drugs, materials, or devices described in this article.

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10.1093/neuros/nyaa205