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**Letter to the Editor Regarding “COVID-19: A Time Like No Other in (the Department of) Neurological Surgery”. Should We Broaden Surgical Indications to Preserve the Standard of Care in Spinal Metastases?**



**LETTER:**

We read with great interest the article reported by Pannullo et al,<sup>1</sup> who analyzed the effect of the COVID-19 pandemic on neurosurgical practice by looking back at changes in workflow in a large Department of Neurosurgery (i.e., the Department of Neurological Surgery of Weill Cornell Medicine, New York, New York, USA) 1 year after the spread of the emergency.

Specifically, the authors focused their report on adopted strategies to overcome obstacles due to the pandemic-related limitations highlighting the extreme resilience and leadership of the author's institution faculty and staff to reinvent the department's clinical operations, workforce management, research, and also education in that catastrophic time.

Expressly, the urgency of surgical case was ultimately adjudicated by a neurosurgical case review committee that met daily to discuss each patient until a consensus was reached. Cases were then presented to a multidisciplinary panel of department chairs to determine whether the operations would be approved. However, while typical emergency neurosurgical cases (i.e., epidural hematomas, intracranial hypertension) could be managed relatively easily, cases straddling the line between emergent and non-emergent could need a thorough discussion.

We believe that further considerations could be advanced on pathologies that are often included in a “gray zone” of treatments when clinical and radiologic conditions stand on a thin line of unpredictable evolution. In particular, an interesting focus should be made on the management of low-grade metastatic spinal cord compression (MSCC) of radioresistant tumors able to become severely symptomatic in a few weeks, probably one of the most common situations a neurosurgeon has to face.

MSCC is a major health burden, occurring in nearly 10% of patients with metastatic cancer. Given the great survival improvements achieved with the development of the latest target therapies and the spread of immunotherapy,<sup>2</sup> the treatment of spinal metastases could no longer be ignored; therefore oncologists, radiotherapists, and spine surgeons have begun to address this problem with the goal of improving the quality of life related to neurologic status.<sup>3</sup> The advent of hybrid therapy proposed by Barzilai et al and the modern multidisciplinary approach to MSCC spread with the newest framework (e.g., NOMS, NSE)<sup>4,5</sup> have led to impressive results, namely about 90% of the local control at 1 year and to the definitive overcoming of the radioresistance concept. Therefore in this scenario, stereotaxic radiosurgery played a crucial role, being a powerful weapon able to achieve local control through its precise high-dose ablation power.<sup>6</sup>

However, although the introduction of stereotaxic radiosurgery has radically changed the management of MSCC by also shifting

the surgical paradigms from extended spinal resection to separation surgery<sup>6</sup>—opening the door to the use of minimally invasive surgery techniques<sup>7</sup> to ensure rapid access to radiation—the COVID-19 emergency risks to turn the clock back years.

The current health crisis caused by COVID-19 is a challenge for oncology treatment, especially when it comes to radiotherapy.<sup>8,9</sup> Cancer patients are already known to be fragile, and COVID-19 brings about the risk of severe respiratory complications. Moreover, given the need to treat patients safely while safeguarding medical teams, the entire health care system has been reorganized, with social distancing the only available key to face this pandemic. Furthermore, ordinary follow-ups of chronic diseases or neoplastic malignancies are at continuous risks of severe delays: patients could experience difficulties in accessing medical care given the extraordinary commitment to treat the new disease, with subsequent loss of therapeutic windows and unexpected negative outcomes.<sup>3,9</sup> As about spinal metastases, some groups tried to rediscuss treatment modalities during the pandemic outbreak. In the position paper by Thureau et al<sup>10</sup> reporting the European Study Group of Bone Metastases recommendations for MSCC management during the pandemic, the indications for radiations have been confined only to conventional radiotherapy and have been delayed for 4–12 weeks after surgery. Surgery is suggested to be restricted to interventions not requiring resuscitation stays because of the reduction in places available in recovery units. In our institutions, we noticed a decreasing number of neoplastic patients requiring surgical care for spinal metastases from March if compared with the prepandemic 8 months.

Although the opinion on the need to free intensive care beds whenever possible could be acceptable, it is our opinion that the role of surgery in spinal metastases should never be underestimated, even more so during a global emergency such as the COVID pandemic: Less effective treatments result in the worst local control rates and subsequent risks of further hospitalization or need for medical assistance because of the potential onset of paraplegia and/or unresponsive mechanical pain, then really contributing to flood health services. Radiotherapy is not able to treat mechanical instability, symptomatic epidural compression, or asymptomatic high-grade epidural compression of conventional radioresistant tumors, and surgery in these cases should never be denied in patients suitable for the procedure. Given the delay that could be experienced for the ordinary follow-up in this period, the role of surgery should be strongly remarked. Furthermore, we believe one should question whether it could be appropriate to expand even surgical indications in order to face the delays in postoperative therapeutic windows. This would mean more aggressive tumor removal/circumferential decompression while preserving the use of minimally invasive/miniopen accesses and possibly including patients with low-grade epidural compression (i.e., Bilsky grade 1c) to surgical decompression in case of evidence of radiologic progression in radio resistant tumors. The use of proper protocols could help avoiding higher complication rates: Louie et al,<sup>11</sup> instead, stated the safety of oncologic spine surgery during the pandemic, reporting no difference in complication rates in a cohort of 127 patients.

A careful evaluation of single cases, considering the American Society of Anesthesiologists score and performance status, could help reduce the risks of COVID-period/hospitalization-related complications while not denying the need for surgery and the standard of care, preserving the functional status of neoplastic patients and above all preventing multiple accesses to hospitals.

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