Learning From Disasters: The CoVID-19 Fallout on Spine Care

The advent of the aptly named “novel Coronal virus,” labelled SARS-CoV-2, around the turn of year 2019/2020 has changed the world as we knew it. Starting with each affected patient and their families to communities, socioeconomic systems to whole nations, not a single person on our planet has been spared from the direct and indirect effects of the ensuing pandemic.1

As drastic containment efforts were implemented around the world, workers suddenly found themselves separated into “essential” and “nonessential” service lines, with members of the latter finding their work sites suddenly shut down and instructed to “shelter at home” and—if they were lucky—to work from home. Fortunately, health care workers have received much deserved recognition for their relentless and often outright heroic efforts in battling the “CoVID-19 pandemic.” To make room for an expected COVID-19 surge and protect patients from contracting the disease in medical facilities, many, if not most, hospitals around the world shut down so-called “elective” surgeries around mid-March 2020. This left many medical specialties suddenly placed into the category of “nonessential” service providers and were thus tasked to be hopefully meaningfully redeployed with pandemic counterefforts or simply “take involuntary time off.” Undoubtedly, in the face of a pending pandemic surge without means of adequate population testing there were many good reasons to empty hospitals to minimize cross-contamination and open up intensive care unit and regular hospital beds as well as free up hospital personnel and save suddenly scarce resource supplies like personal protective gear, certain medications, blood plasma products, and anesthesia-related equipment but also avoid excessively long hospital stays due to shut down of skilled nursing facilities and rehabilitation units. The concept of “elective” surgery, however, was a problematic one from the beginning as the term “elective” implied “optional.” For patients who had decided to undergo an invasive procedure to be told that their problems were not serious enough to warrant care anymore, this must have undoubtedly been a physically and emotionally taxing time. After facing criticism, changes in nomenclature could be seen away from “elective” toward “nonurgent” procedures, and the term “cancellation” of procedure was commonly substituted for “nonurgent.”2

Many health systems around the world rapidly adopted a simple concept of triaging procedures into 1 of 3 categories: urgent/emergent and elective would be on the opposite ends of the spectrum, and the in-between category would be of indeterminate acuity. Percentage-wise some have estimated that each of these bookend categories occupies about 25% of overall case volumes (depending on definitions used). The “intermediate acuity group,” which represents probably around 50% of surgical cases, would be far more challenging to adjudicate as there is a real conceivable harm potential for patients having to delay surgical care for 30 to 90 days as usually proposed by the advocates of more austere quarantine measures2 (Table 1).

Spine surgery from the beginning found itself placed squarely in the center of the debate as our patients commonly qualify for the intermediate acuity group. There was little debate that certain “elective” surgeries like procedures for adolescent idiopathic scoliosis, degenerative disc disease, and stable isthmic spondylolisthesis would have to be postponed under clearly unstable and evolving public health concerns. Similarly, there was no question that patients with “fracture dislocations” and “cauda equina syndrome” as well as “acute spinal cord injury” would be categorized into the “urgent/emergent” category and received the usual and expedient care. Far more challenging was the determination of what to do with patients with clear neurologic impairment or major spinal deformities, certain borderline spine fractures, spinal infections, and spine tumor disease. By anecdotal reports, the sometimes very austere and draconian criteria applied by selection committees commonly pitied spine surgeons serving as advocates for their patients squarely in conflict with these oversight groups, which commonly may have lacked true content experts.

It is difficult to predict today the eventual outcomes of the COVID-19 crisis from any and all perspectives—political, socioeconomic, health wise, and psychological. The deep-rooted frustration of physicians serving in the frontlines, who as usual are expected to act selflessly to any and all patients at moment’s notice, just to be usurped by the sudden demand to make profound triaging decisions with severe consequences

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without truly compassionate understanding and support by their usually remote and well-protected superiors, has suddenly received an open ear in the media.  

Along those lines, the authors around Dr Samartzis and colleagues deserve credit for their survey study on “Impact of COVID-19 Pandemic on Spine Surgeons Worldwide.” In this ad hoc project they were able to study 902 (of 3805 total) AOSpine surgeons from around the globe in a multidomain format of 73 items. The domains addressed included directly pandemic-related items like personal COVID exposures; they also asked about spine care delivery and practice restrictions and of note investigated personal impact effects as well. These queries not only provide an important insight into the profound effects on present-day crisis adaptations of a specialty like spine surgery, they provide a valuable comparison opportunity of different health systems as well as regional differences from a surgeon’s perspective. Of many noteworthy findings some highlights stood out:

- A strikingly small number of surgeon participants stated that they had been tested (57/902; 6%), of which 9 were found to be COVID-19 positive (1%). This again addresses the question of routine testing of health care workers as restrictions are being progressively lifted and exposure risks to health care workers can be expected to rise again in the absence of reliable and widely practiced testing. Clear concerns were also found about availability of adequate personal protective gear with only half of surgeons stating satisfaction with availability of adequate PPE.

- On the mental health side, 50% of surgeons reported depression and 72% outright psychological distress. These are surprising numbers for any surgeon community in general and surely should provide an impetus for deeper investigation.

- While most surgeons were in support of governmental and hospital leadership actions in terms of pandemic containment, 95% of respondents felt that more formal guidelines in case of infectious disease outbreaks for subspecialties like spine would be beneficial for the future.

- As to recovery strategies with return to “regular spine surgery” almost half of the respondents had not been given a clear timeframe for return to work while over two thirds of surgeons had taken income cuts during the pandemic.

This rich canvas of responses featured in this study hopefully will stimulate a deeper debate as to spine care and its role in the era of “value-based care,” which had dominated the discussion about necessary changes in health care prior to

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Table 1. Clinical Guide for the Management of Patients Requiring Spinal Surgery During the Coronavirus Pandemic.  

| Stage 1 (emergency and urgent elective care) |
|--------------------------------------------|
| In the event that pressures/preparations require cancellation of routine elective surgery: |
| • All elective spinal surgical waiting lists should be reviewed by the responsible consultant to identify those patients at risk of neurological deterioration. |
| • The consultant should contact all urgent patients identified on their waiting lists and a date for surgery planned. |
| • All patients, who do not have a risk of neurological deterioration, should not undergo surgery at this time. |
| • Emergency surgery should continue without restriction. |

Likely conditions:
- Cervical myelopathy, thoracic myelopathy, intradural tumors, bilateral sciatica with confirmed radiological compression ± motor weakness.

| Stage 2 (emergency surgery only) |
|----------------------------------|
| Emergency guidelines |
| • All referrals from non-spinal centers and spine partners to spinal hub centers should be reviewed by a consultant to ensure appropriate for referral. |
| • All patients requiring imaging (including MRI) should have this performed at their local hospital 24/7 to prevent inappropriate and unnecessary transfer of patients to spinal hub centers. |
| • Only patients requiring emergency surgery that cannot be treated locally should be transferred between hospitals. |

Likely conditions:
- Spinal fractures, spinal infection, metastatic spinal cord compression, cauda equina, traumatic spinal cord injuries.

| Stage 3 (selective emergency spinal surgery only) |
|-------------------------------------------------|
| Only patients with ASA <3 who will not require level 2 or 3 care postoperatively and a reasonable chance of neurological recovery, with the following conditions: |
| • Proven cauda equina syndrome |
| • Fracture dislocated spines |
| • Epidural abscess with deteriorating neurology |

Patients in stage 3 with metastatic spinal cord compression should be treated oncologically/nonoperatively and should not be offered surgery at this time.

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*Adapted from The National Health Services. https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/specialty-guide-management-of-patients-requiring-spinal-surgery-v1-20-march-2020.pdf.*
COVID-19, and after the present-day cataclysm is overcome. A commonly heard refrain from many with media platforms is to expect “no return to normal in the aftermath of Covid19.” Applied to medical practitioners this could open the doors for a number of much needed changes:

- In the near term, for instance, telemedicine will likely become more prominent in the future and more acceptable to all involved post COVID-19. For the spine community this would mean developing online physical exam surrogates that can at least substitute for a formal exam in the near term and open the door for remote consultations.
- Stratifying regulatory and research pathways hopefully will become a strongly pursued action item to reinvigorate clinically relevant and meaningful research and arrive at more meaningful results in shorter timeframes while reporting problems more rapidly and effectively, enhanced by more efficient real-time data gathering and analytics.
- The value discussion in health care will hopefully receive a more favorable recognition in the public and among lawmakers.

For spine care in general, the “value discussion” will have to take on a deeper meaning as the fall-out from delay in care during the forced COVID-19 surgical work stoppage will hopefully be scrutinized over the coming years. Specifically vulnerable patient groups with pain and progressive dysfunction, like myelopathy and radiculopathy sufferers or patients with neglected geriatric spine fractures, will provide interesting post hoc analyses of the true value of spine surgery. As an overwhelming number of respondents (95%) in the present study asked for clearer guidelines preferably created by spine content experts, and this will hopefully provide more thoughtful guidance in case of future public health disasters and will also hopefully provide a meaningful foundation for a more directed value discussion in Spine care.

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