Learning From Others: A Case Report from the Anesthesia Incident Reporting System

Case 2020-09: A Diagnostic Dilemma

Case presentation:
A 55-year-old ASA I man presented for lumbar laminectomy. He was asymptomatic and had not been tested for coronaviruses. The general anesthesia and recovery were uneventful; therefore, the patient was discharged home. The patient returned on POD 3 with septic shock and was admitted to the ICU immediately. Due to his presenting symptoms, the patient was treated as a COVID-19 patient under investigation (PUI). The patient deteriorated rapidly from respiratory, hemodynamic, and renal failure. The patient returned to the OR on POD #4 for an exploratory laparotomy. At this time, he was assessed as an ASA 5 with an arterial pH of 7.24. The patient was on a continuous bicarbonate infusion with multiple pressor agents running. The patient survived the resection of dead bowel but went into ventricular fibrillation during transfer to the ICU and could not be resuscitated. The coronavirus testing from the ICU was reported after the patient’s demise and was negative.

This patient became very sick, very quickly, for no obvious reason. Judging from their submission, it seems the clinicians were concerned the patient was suffering from fulminant COVID-19. Although most patients who die from COVID-19 are older or have comorbidities, catastrophic deaths in younger and healthier patients have been reported in the popular press and scientific literature. The disease is new enough that most anesthesiologists outside of critical care practice may not have seen an active case. How then to assess the negative coronavirus test?

One possibility is that the ICU virus testing result was erroneous: the patient really did have COVID-19. The onset and symptoms would be consistent, as would the multi-system organ failure. The speed of progression would be unusual, but not impossible. Fulminant COVID-19 would raise the strong possibility that the initial infection pressure, patient refusal, and shortage of testing resources. However, the most likely explanation is simple inertia: arranging a coronavirus PCR test in the 48 hours before surgery is a new step in scheduling that will require new knowledge (where to send the patient and what to tell them) and a new process for the surgeon’s office. With time and practice – and negative feedback from cases like this one – this is a barrier that is likely to be eased over time.

If the patient did not have COVID-19, a different set of questions arise. First, why did a previously healthy patient deteriorate after an uneventful elective procedure? There is no obvious connection between the lumbar laminectomy, the presentation in septic shock, and the dead bowel found at surgery. Unrecognized bowel perforation might have occurred, but the patient’s deterioration would be considered unusually rapid. Infarction of the superior mesenteric artery could explain the rapid demise, but this would be a very rare complication indeed. Another infectious source is a possibility, with rapid deterioration due to gram-positive sepsis, or something unusual like typhoid fever; however, there is no evidence in the presentation to support this.

A different question to consider is whether concern over COVID-19 adversely affected the patient’s care. Physically, increased PPE and isolation requirements impose a drag on every aspect of routine patient care, which could conceivably make a difference in a rapidly evolving clinical crisis. Would more rapid diagnosis and treatment of an acute abdomen have made a difference? Also important is the intellectual drag: did concern with COVID-19 slow consideration of other diagnostic possibilities? This might represent a form of object fixation by the treating physicians (J Hosp Med May 2020). Future mitigation strategies might incorporate mandatory consideration of multiple options when dealing with sepsis of unknown origin, including consultation against an external list of possible causes to be considered and ruled out.

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ASA is interested in collecting vaping-specific data to formulate recommendations for anesthesiologists taking care of these types of patients. The AIRS database is now capable of receiving data for this purpose. Please enter any available information at www.aqiairs.org.

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