The Laryngoscope

Case Report

An Example of Employing the Principles of Bioethics to Medical Decision Making in the COVID-19 Era

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INTRODUCTION

Concerns about the global coronavirus disease 2019 (COVID-19) pandemic have rapidly reached every hospital in the United States. Elective surgeries and clinical encounters have halted as we focus on conserving resources, protecting healthcare workers, and slowing the spread of disease. These changes bring several challenges as complex patients continue to suffer routine medical problems. Determining what is an elective versus urgent procedure and how to appropriately balance the potential risks and benefits of surgeries can become more problematic under these circumstances. These decisions may be straightforward (trauma or cancer); however, several situations exist in which important decisions that could improve outcomes must be made within a small therapeutic window.

Understanding the four principles of bioethics is critical to understanding our current approach to medical decision making (Table I).[1] This framework is even more applicable when resources are limited and risks higher than usual. Using a patient recently seen in our clinic, we aim to highlight how routine issues can become complex during this epidemic.

CASE REPORT

Two weeks into our state-wide shutdown, and while hospitals across the region canceled all elective surgeries and nonemergent clinical encounters, we saw a 46-year-old diabetic female with left-sided Bell's palsy (House-Brackmann [HB] VI). The patient reached functional nadir within 72 hours and lacked other signs or symptoms to suggest neoplasm, vascular accident, Lyme disease, or Ramsay Hunt syndrome. The patient began a course of 60 mg daily of prednisone and 500 mg of valacyclovir twice daily. Her ENoG/EMG on day 10 showed 92% loss of signal amplitude, with two voluntary motor units remaining. We thoroughly discussed the treatment options, including finishing the patient's current medical regimen, increasing the dose and duration of steroids, and surgical facial nerve decompression (a combination middle fossa craniotomy and mastoidectomy). The patient elected to continue eye precautions and pursue a prolonged, higher dose of oral prednisone, 120 mg daily, which was at the low end of dosages described in the paper by Fujiwara et al.[2] As of this writing (approximately 2 months since onset of symptoms), the patient is currently a HB III, successfully continues eye care precautions, and continues to follow up with our clinic.

DISCUSSION

This scenario highlights the many "gray" areas in our field that are further clouded by the backdrop of a crisis. For example, we must determine if surgery should be offered and if it is safe to perform using cumbersome personal protective equipment (PPE). Surgical decompression is a viable option for patients with the most severe axonal injuries. As options were weighed, we considered the difficulty of surgical decompression amid this pandemic. Evidence suggests that coronavirus particles are present in the middle ear mucosa and that otologic surgery presents a high risk of disease transmission.[3] Dr. Robert Jackler also published concerns that otologic surgery could aerosolize coronavirus. Use of a powered air-purifying respirator (PAPR) device or N95 mask with a face shield could make operating under a microscope difficult or impractical. Barrier devices to contain

Table I.
Summary of the Four Principles of Bioethics.

Principles of Bioethics
1. Autonomy: Ensure the patient is involved in making knowledgeable decisions (the basis of informed consent).
2. Nonmaleficence: Do not intentionally create harm.
3. Beneficence: Have intentions to "do good" for the patient.
4. Justice: Consider fair and judicious use of resources.

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aerosolized bone dust have been proposed as potential adjunct PPE, and the U.S. Food and Drug Administration has granted a temporary emergency use authorization for their prudent use.

It is unclear if otologic surgery on COVID-19 positive patient increases the risk of infecting the operating room staff. Minimizing the surgical plume is a concern in abdominal surgery. Some authors have advocated the use of algorithms for scoring risk and resource use.[4] Using Prachand's MeNTS (which accounts for characteristics of the procedure, nature of disease, and patient health factors), our patient scored a 65, which suggests an increased risk of worse patient outcomes, excessive risk to healthcare staff, and excessive use of hospital resources that would likely yield caution for proceeding to the operating room.

At the time our patient presented, routine preoperative COVID-19 testing was not available. According to the American Neurotology Society's Position Statement (April 16, 2020), patients should be categorized as "high risk" when testing is not available. In that paper, facial palsy was deemed urgent and should be seen in clinic despite risk; however, there was no mention of stratifying surgical risk or importance. Currently, it is still uncertain if preoperative COVID testing obviates the need for a respirator or PAPR when the patient is asymptomatic because the false negative rate is high in some studies.[5] We must assess the potential increased risk of infection (given the patient's health history and use of high-dose steroids) of having the patient recover in the hospital. Moreover, we also had concerns about the patient's risks during recovery: the patient would spend time in the intensive care unit near known COVID-positive patients and was considered at a higher risk of morbidity should the patient contract COVID-19 given history of diabetes and use of oral steroids. There is evidence to suggest that high-dose steroids increase the viral shedding of coronavirus and a debate regarding whether steroids increase immune susceptibility to these types of viral infections.[6]

Despite our patient's decision to not pursue facial nerve surgical decompression, the patient has thankfully regained some facial function and good eye closure. It should be noted that surgical placement of an eyelid weight should be entertained in these patients if they have scleral show or signs of corneal irritation despite lubrication. Finally, during times of crises, we must balance the utility of elective/controversial cases with the utilization of limited hospital resources.

CONCLUSION

Many otologists could be in a similar situation in the coming months or during another future, unforeseen strain on our healthcare system, such as war or natural disaster. It is best if we all follow the basic tenets of bioethics as we make decisions. We should always be informative and transparent with our patients and incorporate them as educated and willing participants in their healthcare (autonomy). We should consider the increased risks and threats in the temporarily more dangerous environment (nonmaleficence). We must continue to weigh the scientific evidence with the equipment available and aim to give the patient the best possible outcome (beneficence). Finally, we must consider the utilization of resources to give the greatest number of patients benefit and minimize risk to healthcare workers (justice).

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