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# Coronavirus Disease-19

## Challenges Associated with the Treatment of Head and Neck Oncology and Laryngology Patients in the Coronavirus Disease-19 Era



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### KEYWORDS

• Laryngology • COVID-19 • Coronavirus • Head and neck cancer • Otolaryngology

### KEY POINTS

- The landscape of ever-evolving information about COVID-19 during the pandemic has hindered the transition to normal clinical volume and efficiency.
- COVID-19 should not be a reason for delay in diagnosis or treatment with patients who have upper aerodigestive tract pathology or malignancy.
- The approach to resection, reconstruction, and surveillance for patients with head and neck cancer may need to be altered to consider severity of disease, patient comorbidity, and prevalence of regional COVID-19 infections, among other factors.
- In light of the significant number of prolonged intubations, there may be an increase in the number of patients who develop early and late sequelae of treatment of COVID-19. Tracheostomy should be performed in a safe and efficient manner when specific indications are met.

### INTRODUCTION/HISTORY/DEFINITIONS/BACKGROUND

The downstream effects of COVID-19 caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) have now pervaded most aspects of society and have made an indelible mark on the way that medicine, specifically otolaryngology, is being practiced. The disease represents a threat to an aging population throughout the world<sup>1</sup> but also has dangerous implications for providers.<sup>2-4</sup> Among the most at-risk group of medical providers may be those within the fields of otolaryngology<sup>5</sup> and ophthalmology. An otolaryngologist was among one of the first providers to succumb

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to the illness in its early days as it spread through Wuhan, China.<sup>4</sup> In light of the risk to patients, health care workers, and society at large, a push has been made to mitigate the risk of transmission within the field of otolaryngology–head and neck surgery.

As of September 15, there are a total of 29,723,564 COVID-19 cases reported worldwide, with a total of 939,137 deaths.<sup>6</sup> The United States has the highest number of cases, at 6,788,147, with the total number dead at 200,197. Given the high mortality associated with the novel virus, much of the world has enacted significant social distancing restrictions and facial covering mandates to curb the spread of the disease. The origin of the virus is not well understood, but it is thought that a bat or pangolin vector might have served as the primary reservoir.<sup>7</sup> The disease tends to be marked by fever (43%–98% of patients) and cough (68%–82% of patients)<sup>1</sup>; however, a litany of other symptoms also have been described, including gastrointestinal upset, diarrhea, shortness of breath, headache, and loss of smell/taste, among others. Severe disease is characterized by an acute respiratory distress syndrome, with a 50% to 80% mortality for patients who require mechanical ventilation.<sup>8,9</sup> The disease has a slight male predominance, at 58.1%. Severity of disease seems to correlate to age, because patients who are ages 1 year to 9 years have a mortality less than 0.1%, whereas those over age 80 present with a mortality approaching 15% in early studies.<sup>1</sup>

The nasal cavity and nasopharynx seem to harbor the highest viral load concentration<sup>10</sup>; thus, the nasopharynx is the preferred location for acquisition of samples for diagnostic testing. Nasal swabs, oropharyngeal swabs, bronchial alveolar lavage, saliva, and tracheal aspirates also have been suggested as possible testing sites.<sup>11</sup> The current preferred diagnostic assay is reverse transcription–polymerase chain reaction (RT-PCR), which has a variable sensitivity of 60% to 97%, depending on the institution and type of test.<sup>11</sup>

During the months of May and June, 2020, many cities, states, and countries have focused on a return to normal activity and a ramp-up of commercial activities. During this time, many otolaryngology practices have aimed at ramping up activity as well while employing telehealth, social distancing, and utilization of personal protective equipment (PPE). The American Academy of Otolaryngology - Head and Neck Surgery (AAO) recently published return to practice guidelines, detailed later.<sup>12</sup> As the world continues to move forward during the COVID-19 era, considerations, such as testing, including preoperative/preprocedure COVID testing; surgical triage; clinic workflow; and practice management, continue to evolve as more information becomes available. This review is intended to highlight some of the current recommendations for patient care within the laryngology and head and neck surgical oncology scope of practice.

## DISCUSSION

### *Laryngology*

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As cases continue to rise, increased emphasis has been placed on protection for the provider in the clinical setting. Over the past decade, office-based management of many common laryngeal disorders has expanded significantly.<sup>13</sup> This includes, but is not limited to, office-based laser ablation of papilloma or dysplasia, transoral or transcervical injection laryngoplasty for vocal fold paralysis, and electromyography-guided injection of Botox for spasmodic dysphonia. Given the high number of clinic-based aerosol-generating procedures (AGPs) practiced by today's laryngologists, many providers have seen a marked reduction in their ability to treat patients and their clinical productivity. Within the category of AGPs is flexible fiberoptic laryngoscopy, one of the most widely used diagnostic tools for all otolaryngologists and speech pathologists.

A consensus statement reported by Rameau and colleagues,<sup>14</sup> from a virtual webinar attended by approximately 300 participants in the American laryngology community, recommended flexible laryngoscopy should be reserved for critical cases in which the findings may have an immediate impact on diagnosis or treatment. “Indications include hemoptysis, odynophagia limiting hydration and nutrition, or airway compromise—notably secondary to infectious and malignant conditions.”<sup>14</sup> Some investigators have advocated for preclinic COVID testing prior to any AGP<sup>4,14</sup>; however, given the high false-negative rate of many available tests, the use of universal personal protective precautions is recommended. According to Givi and colleagues,<sup>5</sup> examinations should take place in negative pressure rooms if possible, with avoidance of topical lidocaine spray. A substitute to standard aerosolized anesthesia may be pledges soaked in 4% lidocaine and 0.05% oxymetazoline. The group also suggests using videolaryngoscopy whenever possible to keep the practitioner and the patient farther apart. Disposable laryngoscopes should be used whenever possible.<sup>5</sup> Most studies universally recommend the following PPE: N95 mask or powered air-purifying respirators (PAPRs), gloves, gown, eye shield (or goggles), and cap.<sup>1,5,11,15,16</sup> It also has been suggested that the patients wear a mask covering the mouth during flexible laryngoscopy to reduce aerosolization from phonatory maneuvers and in case of coughing or sneezing. At this time, transoral rigid laryngoscopy and mirror laryngoscopy are discouraged unless flexible laryngoscopy cannot be performed due to the increased risk of gagging and coughing as well as the need for patients to phonate with the mouth uncovered to allow visualization of the larynx. Additionally, universal masking is encouraged in all clinical spaces, in accordance with many state policies. Patients in the waiting rooms are encouraged to physically distance or wait in their car for a phone call prior to presenting for their appointment. Crosby and Sharma<sup>17</sup> also suggest offering PPE for the friends and family accompanying the patient during laryngoscopy, and certain hospitals also restrict friends and family from accompanying patients inside for the visit. Some alternatives to flexible laryngoscopy have been raised, including transcervical laryngeal ultrasound, which has a reported concordance of 70% to 95% in identifying vocal fold motion abnormalities.<sup>18</sup>

Another key consideration for the laryngologist in the COVID-19 era is the approach to sanitization and room turnover after AGPs. Laryngoscope turnover should include high-level disinfection, including the use of such chemical disinfectants as glutaraldehyde, chlorine dioxide, or ortho-phthalaldehyde.<sup>14</sup> Some investigators recommend immediate placement of the scope after use into a covered receptacle for transport from the examination room to the sterile processing areas.<sup>17</sup> After completion of laryngoscopy, room sanitization with an Environmental Protection Agency–registered, hospital-grade disinfectant is recommended, with a 2% to 3% hydrogen peroxide solution, 2-g/L to 5-g/L chlorine disinfectant, or 75% alcohol.<sup>19</sup> According to the Centers for Disease Control and Prevention (CDC) Web site, it is unknown how long the air inside a particular examination room remains infectious and likely relates to the room size, rapidity of air exchange, patient factors (like viral shedding), amount of coughing/sneezing, and length of time a patient was in the room.<sup>20</sup> The CDC suggests that rooms with 50 air changes per hour (ACHs) take approximately 6 minutes and 8 minutes to purify the air with 99% and 99.9% efficiency, respectively. As the number of ACHs decreases, the time between patients should be increased to allow for appropriate dissipation of theoretic infectious agents. As such, many hospitals have recommended a turnover time of 4-times the time it takes to purify the air with 99% efficiency, which may be either 20 minutes or 40 minutes, depending on the level of air turnover, or could be no additional time if any additional HEPA filtration system

and negative pressure has been added. Limited data exist to support this approach for SARS-CoV-2.

Laryngology patients are quite diverse with respect to their level of acuity. Some patients require more urgent intervention, whereas others may have their care deferred.<sup>12,21</sup> Most guidelines advocate for a tiered approach to ramping up both clinic-based and surgical activity. AAO published guidelines for ramping up clinical activity on May 15, 2020. The AAO recommends limiting patient care to individuals with “time-sensitive-urgent and emergent medical conditions.”<sup>12</sup> This approach is echoed in the care of head and neck cancer patients (discussed later). According to the guidelines, emergent conditions include “impending airway obstruction due to infection, neoplasm, stenosis, foreign body,” which may warrant the following intervention: “flexible and rigid laryngoscopy with intervention, direct laryngoscopy/suspension laryngoscopy, bronchoscopy, and tracheostomy.” Urgent conditions include “moderate or impending airway obstruction, progressive dysphonia, progressive dysphagia, glottic incompetence causing aspiration or impaired pulmonary toilet,” which warrant the previously described procedures in addition to “stroboscopy, functional endoscopic evaluation of swallow, esophagoscopy with or without intervention, open airway procedures for cancer.” Time-sensitive conditions include “T1 glottic carcinoma or carcinoma in situ, stable/mild dysphonia, stable dysphagia,” which adds “transcervical Botox injection” to these list of procedures. Routine conditions that may be deferred for 90 days or more include “mild/moderate dysplasia, non-obstructive benign/phonotraumatic lesions of the vocal folds, glottic incompetence, glottic incompetence with mild to moderate dysphonia, gender affirmation, globus/cough without alarm signs.” Comparing acuity of patients also raises an important point about the subset of patients who are typically seen for benign, phonotraumatic voice disorders. Many live vocal performance venues have shut down, concerts have been canceled or postponed, and some studies point to live singing as a potential source of massive spread.<sup>22–24</sup> For this reason, it might be assumed that the percentage of patients being seen for acute phonotraumatic voice disorders diminishes somewhat. Conversely, as patients continue to recover from hospitalizations related to COVID-19, it is anticipated that there may be several patients with sequelae of prolonged intubation, including posterior glottic stenosis, vocal fold granulomas, and tracheal/subglottic stenosis.

Laryngeal surgery in the era of COVID has had to undergo some significant changes in the approach to patient triage, surgical technique, and management of the airway. Preoperative evaluation of patients must weigh the risk of delaying surgery with the risk of complications related to COVID-19 infection. Lei and colleagues<sup>25</sup> studied a group of 34 operative patients, in whom all were COVID-19 positive within the incubation period. Mortality was 20.5% for this group, and 44.1% required ICU admission. All patients in this study underwent surgery approximately 4 days prior to demonstrating signs or symptoms of COVID-19 pneumonia. This suggests there is significant risk associated with elective surgery in seemingly asymptomatic patients who are infected with COVID-19. For this reason, many investigators have suggested preoperative COVID-19 testing,<sup>15,26–28</sup> although it is a subject of some debate. Some investigators advocate for a negative test within 48 hours followed by self-quarantine until the time of surgery, whereas others favor a negative test 48 hours from the time of surgery, and a point-of-care negative test on the day of surgery.<sup>17</sup> This not always is possible, given the limitations of the institution where the patient is undergoing surgery. As discussed previously with regard to PPE in clinic, universal precautions should be taken, including full PPE, and all patients should be presumed positive.

Airway management in the COVID-19 era has become a point of focus for quality improvement and safety groups. Endotracheal intubation is cited as one of the procedures that seems to have the highest aerosol-generating burden.<sup>1,2,5</sup> It is recommended that intubation be performed by the most experienced practitioner. Additionally, some investigators recommend early intubation for patients who are high risk for decompensation,<sup>2</sup> whereas others have advocated delaying intubation in favor of noninvasive means of ventilation. Non-invasive ventilation may include high-flow nasal cannula, which actually has minimal dispersion of exhaled air if appropriately fitted according to Meng and colleagues.<sup>2,29</sup> It is recommended that flexible fiberoptic intubation be avoided whenever possible.<sup>30</sup> Additionally, excessive bag-mask ventilation should be avoided due to the risk of dispersion of exhaled air. Furthermore, jet ventilation is considered particularly high risk and should be avoided if possible.<sup>5</sup>

Management of the surgical airway and the topic of tracheostomy has been well represented in the recent literature. During the SARS outbreak in 2003, open tracheostomy was the most common surgical procedure performed on infected patients.<sup>31</sup> Most studies seem to favor open tracheostomy over percutaneous tracheostomy<sup>31</sup>; however, consideration may be given for percutaneous dilatation tracheostomy in some patients if the anatomy is favorable and the practitioner has sufficient expertise with the procedure. Tay and colleagues<sup>31</sup> advocate for use of PAPR during tracheostomy based on the experience of 5 countries during the SARS crisis.<sup>1</sup> Other investigators<sup>32</sup> have suggested the use of an N95 mask, appropriate eye protection, gown, double gloves, and cap.<sup>17,26</sup> To decrease the risk of autocontamination, some investigators have recommended an infection control nurse be available to monitor donning and doffing procedures during tracheostomy.<sup>31</sup> Additional proposals include tracheostomy teams, which may consist of a surgeon, anesthetist, and scrub nurse, to increase efficiency and create an environment of consistent verbal and nonverbal communication (especially important given the burdens of communicating through a mask or PAPR). Portugal and colleagues<sup>32</sup> discuss a surgical safety checklist for performing tracheostomy in patients with COVID-19. The surgical checklist includes performing tracheostomy in the intensive care unit (ICU) whenever possible, decreasing the number of personnel in the room, and having a specific tracheostomy bundle in the ICU room to decrease the number of times providers and nurses need to break scrub to leave the room. They also recommend donning inner gloves prior to gown and outer gloves after donning gown to maintain clean inner gloves for the removal and disposal of the rest of the PPE. Two universally agreed-on maneuvers include stopping ventilation prior to entrance into the airway and holding ventilation until after the tracheostomy tube cuff has been inflated. Givi and colleagues<sup>5</sup> suggest that a smaller tracheostomy (6.0 cuffed) may be preferred to decrease the spread of aerosolized particles. Miles and colleagues<sup>33</sup> discuss the New York experience, suggesting that for intubated patients the cuff pressure should be checked every 4 hours, with a goal of 30 cm H<sub>2</sub>O (greater pressure predisposes tracheal pressure necrosis). The group also suggests delaying the timing of tracheostomy until 21 days after onset of symptoms when feasible. Finally, some investigators have advocated for the use of specific air containment setups, including plastic draping, smoke evacuator tubing, or specifically designed negative pressure box.<sup>15,34–36</sup>

The field of laryngology has had to undergo significant change in the setting of the COVID 19 pandemic. As the numbers of COVID-19 patients have continued to increase during the month of June, it is clear that practice of laryngology in the post-COVID era will need to be carefully ramped up to protect patients and providers alike. Additionally, it would be expected that a continued increase in the number of

recovered patients being seen for sequelae of prolonged intubation. Decisions to relax restrictions on flexible laryngoscopy and other AGPs will depend on the local incidence of COVID-19 infection, availability, and accuracy of preprocedure testing; sustainable supply of PPE; the ability to properly sanitize rooms; and, ultimately, development of an effective vaccine.

### ***Head and Neck Surgical Oncology***

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Similar to laryngology, the approach to head and neck surgical oncology continues to evolve as more information becomes available during the COVID era. During the early weeks of the pandemic, the aspect of cancer care most concerning to patients and providers involved potential delays in therapy. Finley and colleagues<sup>37</sup> suggest that delaying cancer surgery should be done with extreme caution despite COVID-19. Additionally, delays beyond 6 weeks could significantly affect long-term outcomes and morbidity of treatment. Among patients diagnosed with severe COVID-19 requiring ICU admission, patients with cancer deteriorated faster than noncancer patients.<sup>8</sup> Desai and colleagues<sup>38</sup> discovered a higher risk of severe events in patients recently treated with chemotherapy or surgery in the past 30 days compared with noncancer COVID-19 patients. Additionally, patients with advanced-stage cancer tended to have a higher rate of severe events compared with early stage cancer. Cancer patients undergoing active treatment are predisposed to COVID-19–related complications, and critically ill patients with cancer have a higher predisposition to death.<sup>9</sup>

Head and neck cancer patients, especially, are considered a high-risk population for complications associated with COVID-19 infection,<sup>8</sup> making safe coordination of care difficult but imperative. Head and neck cancer patients are an at-risk group for several reasons. Silverman and colleagues<sup>39</sup> point out that head and neck cancer patients tend to present with advanced age, history of tobacco and alcohol abuse, and cardiac and pulmonary comorbidities, which are similarly found in COVID-19. Risk of respiratory sequelae in patients who have received chemotherapy and/or radiation therapy are high, with increased rates of dysphagia, aspiration, and pneumonia. Additionally, head and neck cancer patients have an increased risk of respiratory infections and aspiration pneumonitis.<sup>39</sup> These factors may expedite deterioration to severe adverse events in patients with COVID-19. Additionally, head and neck patients who are actively receiving chemotherapy or immunotherapy may have depressed immune function, malnutrition, and older age. For this reason, the patients need to be carefully selected and comorbidities strongly considered when constructing a treatment plan for patients with head and neck cancer.

Within the United States, mortality for patients of color (African American and Latinx) with COVID-19 is significantly higher than for white patients.<sup>40</sup> Unfortunately, this is a consequence of inequality within society and the health care system, rather than a biological or pathologic difference.<sup>41</sup> Correspondingly, these communities also tend to present with more advanced disease and have significantly worse mortality compared with their fellow white citizens. This pandemic has laid bare some of the gross inequities within the American health care system and highlighted the need for equitable decision making for all patients with a diagnosis of head and neck cancer during the COVID-19 era.

Another consideration for the head and neck cancer patient during the COVID-19 era may include the financial burden and cost of survivorship associated with undergoing cancer treatment and financial hardship related to COVID-19's effect on the world economy and increasing levels of unemployment.<sup>41,42</sup> Given the significant job losses across the United States, there are preliminary data to suggest that there will be at least 1.55 million newly unemployed people who also will lose their insurance

coverage in the wake of the pandemic.<sup>43</sup> Increased financial strain has been associated with decreased quality of life scores and subsequently mortality in head and neck cancer patients.<sup>44–48</sup>

Recommendations for head and neck clinic are similar to what was discussed previously for laryngology. Providers are expected to take universal precautions, regardless of a patient's COVID status. Flexible fiberoptic laryngoscopy is considered a high-risk AGP. Due to this, laryngoscopy should be reserved for instances in which it is likely to change management. One of the beneficial consequences of the COVID-19 era is the increased access of care through the widespread adoption of telehealth clinics among most hospitals.<sup>49</sup> Providers may use telemedicine as an initial preoperative assessment or prescreen for patients who will be seen later in clinic or prior to surgery. Although telehealth is wonderful for obtaining a detailed history, reviewing data/imaging/laboratory tests, and discussing surgical options/risks/benefits, a big drawback is the inability to perform a comprehensive head and neck physical examination.<sup>26</sup> Physical examination, with or without fiberoptic laryngoscopy, is important to define the extent of tumor and formulating an ablative and reconstructive plan. Fortunately, some work-arounds include anatomic and physiologic imaging for ablative planning and computed tomography angiography and virtual planning sessions for microvascular reconstruction. Telemedicine also serves a vital role in triage of post-treatment head and neck cancer patients who may not be able to be seen as frequently due to the pandemic.<sup>5,12</sup>

Telemedicine also serves a vital role in the coordination of care between multiple oncologic disciplines. Dharmarajan and colleagues highlighted the University of Pittsburgh approach to a virtual multidisciplinary tumor board clinic. This strategy has been adopted by multiple institutions, and works quite well to coordinate care between specialties. In their study, they found that 57.9% of virtual tumor board participants preferred virtual multidisciplinary clinic to the in-person format. Additionally, approximately 78.9% of participants indicated that they would prefer to continue the virtual multidisciplinary format once in person meeting restrictions had been lifted. Through multiple virtual meeting applications, practitioners can share imaging and laryngoscopy, which may assist with decision making for patients.

Similar to the guidelines published for laryngeal surgery, the AAO has published recommendations for ramping up clinical volume as it relates to triage for head and neck surgical oncology. Setzen note that most head and neck cases fall within the urgent category. The guidelines list emergent procedures as being tumor-obstructing airway, significant bleeding, acute or impending neurologic change, and salivary gland or deep neck abscesses. Urgent procedures (within 30 days) include all head and neck squamous cell carcinomas of the upper aerodigestive tract, benign tumors with impending complications or morbidity, anaplastic thyroid cancer, medullary thyroid cancer, bulky differentiated thyroid cancer with regional/distant metastasis, locally aggressive, or large nodules (>4 cm Bethesda 3, 4, 5, or 6), high-grade salivary malignancies, skin cancers, and parathyroid carcinomas with significant systemic effects. Time-sensitive procedures include low-risk differentiated thyroid cancer, low-grade salivary neoplasms, and slower-growing basal cell carcinomas in favorable locations. Routine procedures include benign thyroid pathology, parathyroid disease without significant systemic effects, benign salivary lesions, low-risk skin cancers, and post-treatment disease. Ranasinghe and colleagues<sup>26</sup> recommend a tiered approach to surgical triage, with more aggressive pathology prioritized in a similar fashion to the AAO guidelines. Similarly, the review recommends considering alternatives to long-duration microvascular reconstructive



cases. It is recommended that the focus shift to simplifying reconstruction and reducing surgical duration, when it is feasible and appropriate. It also is acknowledged, however, that this approach may lead to an increase in downstream complications. Endocrine surgery is similarly tiered in a memo by Shaha,<sup>50</sup> which outlines a strategic approach to thyroid surgery during the pandemic. Similar to other strategies, anaplastic thyroid cancer, medullary thyroid cancer, and locally aggressive differentiated thyroid cancer, specifically with impending concern for airway obstruction, take precedent.<sup>50</sup> Some alternatives also are discussed, however, for instance, in patients with BRAF V600E mutations, who may have surgery delayed while being treated with appropriate targeted therapies. Additionally, de-escalation of surgical care is advocated for benign conditions like thyroid goiters that are nonobstructive and even papillary thyroid microcarcinoma (which may be followed with serial ultrasonography until resource allocation has returned to pre-COVID levels).

As institutions attempt to weigh the pros and cons of elective and essential surgery in the midst of the pandemic, some investigators have advocated for creating rating systems to allow for appropriate surgical triage during periods of limited clinical output and resource reallocation. The medically necessary, time-sensitive (MeNTS) procedures scoring system aims to “ethically and efficiently manage resource re-allocation and risk to healthcare providers” during the COVID-19 pandemic.<sup>51</sup> The scoring system, which uses procedural, disease, and patient factors within a 5-point Likert scale to determine the potential risk of proceeding with surgery. The cumulative MeNTS score may range between 21 and 105, with score above 64 considered within the high-risk or resource-heavy procedures, either due to patient factors (age/comorbidities) or procedure factors (head and neck surgical site, high anticipated blood loss, and ICU admission requirement). Using scoring systems like MeNTS should help hospitals triage elective and essential surgeries more appropriately and objectively in the setting of a resurgence of cases/limiting of resources.

Given the significant lack of available knowledge regarding SARS-CoV2 and its associated complications, it is difficult to characterize risk for patients undergoing ablative and reconstructive head and neck surgery. As discussed previously, in asymptomatic COVID-19 positive patients undergoing elective surgery, mortality approached 20%.<sup>25</sup> COVID-19 has demonstrated myriad manifestations that might interfere with the success and management of patients undergoing head and neck surgery. Tang demonstrated that coagulopathy was more common in patients with severe disease and nonsurviving COVID patients.<sup>52</sup> In this study, D-dimer, fibrin degradation products, prothrombin time, and partial thromboplastin time all were significantly increased in nonsurviving patients relative to those surviving COVID-19.<sup>53</sup> Additional studies demonstrate a prothrombotic state in certain patients, with 7 of 12 patients having deep venous thromboses on autopsy.<sup>54</sup> The mechanisms of this COVID-related coagulopathy are not yet well described in the literature; however, these undefined entities pose certain risk for reconstructive efforts in patients with head and neck cancer.

In lieu of significant surgical delays, radiation  $\pm$  chemotherapy may be considered for certain patients. Administration of chemotherapy and fractionated radiotherapy, however, requires multiple trips to hospitals.<sup>55</sup> This potentially can expose patients, who already are considered high risk, to SARS-CoV2. Sharma and colleagues<sup>55</sup> stress the importance of making informed decisions, weighing not only the patient, comorbidities, and disease status but also the prevalence of COVID and resource availability when making decisions about preferred options for treatment.

## SUMMARY

COVID-19 has forever changed the way that otolaryngologists approach laryngology and head and neck cancer care. Telemedicine has become an effective tool for the work-up of disease and interface with patients remotely. Flexible laryngoscopy should be reserved for urgent/time-sensitive cases in which it has a direct impact on management. Attempts should be made by all providers to ensure that appropriate PPE is worn and that universal precautions are taken for every patient, regardless of COVID-19 status. Given the high false-negative rate associated with nasopharyngeal RT-PCR, the role of preclinical or preoperative COVID testing has yet to be evaluated rigorously. Given the high mortality associated with elective surgery in asymptomatic COVID-19 patients, however, preoperative COVID testing is the best available option for triage of asymptomatic patients. Surgical decisions making should involve both the provider and the patient in a discussion about the necessity of surgery and other alternatives available in the context of the local COVID-19 landscape. Specific tools, like the MeNTS score, may be helpful to risk-stratify these patients and inform these decisions.

## DISCLOSURE

The authors have no financial or professional conflicts of interest to disclose.

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