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Impact of the COVID-19 Pandemic on the Management of Head and Neck Malignancies

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Abstract

The impact of the COVID-19 pandemic on the management of head and neck cancer must be addressed. Immediate measures to reduce transmission rates and protect patients and providers take priority and necessitate some delays in care, particularly for patients with mild symptoms or less aggressive cancers. However, strict guidelines have yet to be developed, and many unintentional delays in care are to be expected based on the magnitude of the looming public health crisis. The medical complexity of head and neck cancer management may lead to prolonged delays that worsen treatment outcomes. Therefore, those caring for patients with head and neck cancer must take action to reduce these negative impacts as the country rallies to overcome the challenges posed by this pandemic.

The COVID-19 outbreak is likely to disrupt diagnosis, treatment planning, treatment initiation, and treatment duration of head and neck cancer. Outpatient office closures, appointment rescheduling to allow for social distancing, stay-at-home orders in densely populated areas, and patient fears about visiting hospitals for care even if medically warranted have already been noted across the country and in countries across the world. As COVID-19 spreads and the burden on our health care system and the economy increases, the strain on academic medical centers and community hospitals as well as the financial stresses associated with cancer for individual patients will be fully realized. The American Academy of Otolaryngology-Head and Neck Surgery has urged all members to reduce the scale and scope of their practices in order to preserve resources and to minimize transmission rates, as otolaryngologists are a physician population that is high risk for exposure.[1] While our country grapples with the COVID-19 pandemic, it is important to consider the detrimental effects of delaying care for head and neck malignancies.

Studies have shown that the majority of head and neck cancers double in volume within 1-3 months, regardless of their initial size or location.[2] Thus, delays in diagnosis or treatment due to the widespread effects of COVID-19 on the health system may result in additional tumor burden and potential upstaging of TNM classification. With the multidisciplinary approach to head and neck cancer management (involving coordination between many services including but not limited to head and neck surgeons, medical oncologists, pathologists, radiologists, speech language pathologists, dentists, and radiation oncologists), delays in normal administrative care, such as rescheduling of appointments or cancelling tumor board conferences, may be

compounded. The availability of personal protective equipment (PPE) for staff as well as an increasing need for self-quarantine or enforced quarantine of patients, caregivers, and healthcare providers may also result in care delays. Already, diagnosis requiring examinations under anesthesia or direct laryngoscopy with biopsy and definitive ablation and reconstruction are being delayed across the country to allow for the development of guidelines, and the possible availability of pre-operative testing for COVID-19. Further delays are likely as anesthesia personnel, ventilators and other staff are diverted for the care of COVID-19 patients and as the prevalence of infection increases both in patients and in medical providers.

These delays will negatively affect head and neck patient outcomes. There is an abundance of data to suggest that delays in the interval between surgery and postoperative radiation or the total duration of radiation results in reduced overall survival.[3–5] The preponderance of data also suggests that delayed treatment initiation has a significant impact on overall survival, both for patient undergoing upfront surgery, or definitive radiotherapy.[4] As a result, most centers advocate for initiation of treatment of head and neck cancer within 4-6 weeks of diagnosis, particularly for advanced cancers.

In the absence of extreme prolongation of the package time, slight delays may be accommodated, particularly for patients presenting without significant symptoms or less aggressive histopathology.[6] However, in addition to the potential impact on overall survival outcomes, a significant delay in initiation of treatment for more advanced tumors may result in larger extirpations or larger radiation volumes, resulting in higher

morbidity, poorer functional measures, or reduced quality of life. For example, a small T1 floor of mouth cancer initially requiring marginal mandibulectomy and local reconstruction may become a T4 cancer necessitating free tissue transfer if a significant enough delay occurs. These risks must be weighed in concert with risks to the patient, healthcare providers, other COVID-19 patients and society as a whole if treatment is not deferred. In an effort to avoid endoscopic procedures which may aerosolize the COVID-19 virus, and to reduce the use of operating rooms, PPE, and critical care beds, some have advocated that appropriate patients (for example, HPV-related HNSCC) be treated with definitive radiotherapy, as opposed to upfront surgery, during this crisis. This may be appropriate for some patients, but must be balanced against the increased time these patients would spend in radiotherapy clinics.

As the United States braces for the full impact of the COVID-19 pandemic, we must heed advice coming from areas of the world already hit hardest. For example, in a nationwide analysis in China of patients, cancer patients appear at elevated risk for COVID-19 and related complications, likely due to their immunosuppressed state and elevated age.[7] We surmise that head and neck cancer patients, with impaired upper respiratory function or increased aspiration risk, are likely to be at even heightened risk for pulmonary complications requiring intensive care. We and others agree that the benefit of delaying surgery for less aggressive cancers to reduce COVID-19 transmission, particularly for our vulnerable patients and staff, outweighs the risk of tumor progression in certain instances.[7,8] The advice to delay care is less clear for advanced-stage and aggressive cancers and will likely depend on regional- and patient-specific factors as the COVID-19 outbreak unfolds. The complexity of care required for

patients with head and neck cancers is one of the main factors that most engages head and neck surgeons and other providers in the field. With new challenges will come new solutions. During this unprecedented pandemic, we look forward to seeing the new ways in which our specialty comes together to provide the best possible care for our patients.

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