



Institution-Specific Strategies for Head and Neck Oncology Triage During the COVID-19 Pandemic

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Abstract

Background: This work seeks to better understand the triage strategies employed by head and neck oncologic surgical divisions during the initial phases of the coronavirus 2019 (COVID-19) outbreak. **Methods:** Thirty-six American head and neck surgical oncology practices responded to questions regarding the triage strategies employed from March to May 2020. **Results:** Of the programs surveyed, 11 (31%) had official department or hospital-specific guidelines for mitigating care delays and determining which surgical cases could proceed. Seventeen (47%) programs left the decision to proceed with surgery to individual surgeon discretion. Five (14%) programs employed committee review, and 7 (19%) used chairman review systems to grant permission for surgery. Every program surveyed, including multiple in COVID-19 outbreak epicenters, continued to perform complex head and neck cancer resections with free flap reconstruction. **Conclusions:** During the initial phases of the COVID-19 pandemic experience in the United States, head and neck surgical oncology divisions largely eschewed formal triage policies and favored practices that allowed individual surgeons discretion in the decision whether or not to operate. Better understanding the shortcomings of such an approach could help mitigate care delays and improve oncologic outcomes during future outbreaks of COVID-19 and other resource-limiting events. **Level of Evidence:** 4.

Keywords

head and neck oncology, qualitative research, surgical ethics, organizational response, pandemic response

Introduction

The novel coronavirus 2019 (COVID-19), causing severe acute respiratory syndrome-CoV-2, emerged in December 2019 in the Hubei Province of China and has since rapidly spread to become a pandemic. By March 2020, the United States had the highest burden of COVID-19 in the world and several professional bodies, including the American College of Surgeons and the American Academy of Otolaryngology—Head and Neck Surgery issued statements urging a reduction in elective surgical volume to protect surgical teams and preserve important health care resources.^{1,2} The interpretation of “elective” was left to individual institutions and surgeons.¹

Cancer surgery is generally considered nonelective, although there is a range of potential acuity within head and neck surgical practices. For example, most upper aerodigestive tract malignancies grow rapidly and readily metastasize to locoregional lymph nodes^{3,4}; treatment delays as short as 20 days have been associated with worse overall survival.⁵

Conversely, surgery for well-differentiated thyroid malignancies and low-stage melanoma might safely be delayed for up to 3 months.^{6,7}

In addition to oncologic considerations, surgical procedures also carry a range of resource demands and potential risk to

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Table 1. Summary of ENT Department and Head and Neck Oncology Division Head and Neck–Specific Responses to COVID-19 Pandemic.

Department-/division-specific guidelines present:			
N = 11	Tiered guidelines incorporating subsite and cancer type	Yes	9
		No	3
	Airway risk as part of guidelines	Yes	9
		No	3
Other triage mechanisms:			
N = 36	Chairman/division head review prior to every case?	Yes	5
		No	31
	Group review prior to every case	Yes	7
		No	29
	Individual surgeon judgment/discretion	Yes	17
		No	19

Abbreviation: COVID-19, coronavirus 2019.

Table 2. Factors Influencing Triage Strategies for Head and Neck Oncologic Surgery During COVID-19 Pandemic.

Risk of COVID exposure during case	High risk	Mucosal violation (oral cavity resection, laryngectomy, etc) with or without drill or microdebrider
	Low risk	No mucosal violation (neck dissection, thyroidectomy, etc)
Risk to patients from delaying case	High risk	Airway compromise, SCC, poorly differentiated thyroid carcinoma
	Intermediate risk	High grade salivary gland carcinoma, laryngeal masses amenable to endolaryngeal surgery, some melanoma
	Low risk	Medically controllable endocrine surgery, low-grade salivary carcinoma, well-differentiated thyroid carcinoma. Equivalent nonsurgical treatment.
COVID burden on OR resources	High burden	High COVID-19 rates, low OR: population ratio
	Low Burden	Low COVID-19 rates, high OR: population ratio
COVID testing ability	Widely available and accurate	Enables preoperative testing, reducing risk to surgeon in high-risk cases
	Poorly available and inaccurate	Justifies stringent limits on nonurgent surgeries

Abbreviation: COVID-19, coronavirus 2019.

health care workers that also impact the decision to postpone or perform surgery.⁸ Free flap reconstructive surgery, for example, requires longer operative times and postoperative intensive care unit occupancy.⁹ Coronavirus 2019 viral loads are highest in the nasopharynx and oropharynx, placing an additional burden on the decision to operate in these areas due to transmission risk to health care providers.^{10,11}

The purpose of this study was to examine how individual otolaryngology departments and head and neck oncology divisions navigated triage decisions regarding cancer surgery during the initial COVID-19 outbreak. Knowledge of the range of strategies employed may then inform future refinement of triage guidelines.

Methods

Thirty-six academic otolaryngology departments across the United States were surveyed through contact with attending head and neck surgeons, head and neck fellows, and chief residents who were rotating on head and neck oncology. A standardized set of questions was used to obtain relevant information. Sampling included all programs with which the primary authors' institution had established professional contacts. Geographic breakdown included 9 programs in the Northeast, 10 in the Southeast, 10 in the West, and 7 in the Midwest. Questions were asked regarding the nature of institution-specific treatment guidelines related to COVID-19 as well practice patterns from March to May 2020.

Results and Discussion

Of 36 responding programs, 11 (31%) had department or division-specific response guidelines (Table 1). These guidelines either contained a tiered policy that stratified risk based on anatomic subsite and tumor type or included airway risk as a primary determining factor (Table 1).^{12,13} Beyond department- or division-specific triage guidelines, 5 (14%) programs utilized chairman approval prior to any operative case, 7 (19%) had a team review every case prior to scheduling, and 17 (47%) left the decision to operate to the individual surgeon's discretion (Table 1). Multiple programs that did not have a formal departmental/divisional policy reported that they did so to retain flexibility in the face of higher COVID-19 case numbers. Four (11%) programs continued performing elective endocrine surgery without delays. Every program surveyed (100%) continued to perform major tumor resections with free flap reconstructions, although at each institution these were subject to the triage requirements outlined above. Early in the pandemic, a number of factors were weighed in the creation of each institution's guidelines (Table 2).

In order to respond to the novel challenges of COVID-19, it appears that head and neck oncology divisions generally avoided rigid procedure-specific guidelines, instead favoring a case-by-case approach that was flexible to local resource limitations and varied risks posed by particular procedures. While this is at its face, a sensible approach—surgeons have the domain expertise and familiarity with individual cases that are required to make the triage decisions—there remains the potential for disparities and injustice without frameworks in place to ensure like cases are treated similarly.

At the time of preparation of this manuscript, the implementation of preoperative testing had enabled the vast majority of programs to resume normal operations in their head and neck

oncology divisions. Now that we have the benefit of hindsight on the initial wave of COVID-19 cases, it is time to consider what frameworks need to be developed to ensure equitable application of triage decisions for head and neck cancer patients; this includes what role preoperative testing plays in the triage process. Large database analyses to examine which patients/procedures were delayed, case-control research on the impact of these decisions on oncologic outcomes, and qualitative assessment of the triage decision-making process will all be needed to inform future guideline development.

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