Otolaryngology Subspecialty Surgical Case Rescheduling Rate During the COVID-19 Pandemic

Emily Sagalow, BS[1]; Alexander Duffy, MD[1]; Priyanga Selvakumar, BS[1]; David M. Cognetti, MD[1]
[1]Department of Otolaryngology – Head & Neck Surgery, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania

Introduction

- National lockdown restrictions for COVID-19 were enacted in March 2020 and affected the practice of many surgical specialties [1-2]
- Of subspecialties affected, Otolaryngology was deemed high-risk for COVID-19 transmission due to its primary focus on the nasopharynx and respiratory tract [3-5]
- Tiering systems were consequently developed at hospitals across the world to decrease nosocomial COVID-19 transmission [6-8]
- Otolaryngology is unique in its broad range of procedures that range from urgent and oncologic to elective, thus likely affecting subspecialties unequally

Hypotheses:

1. Subspecialties with cases with high risk for disease progression will have the lowest cancellation and highest rescheduling rates, whereas subspecialties with more elective surgeries have highest cancellation rates
2. Procedures that did proceed during this timeframe would be performed safely with a low nosocomial rate of infection for both surgeons and patients

Methods

Study Design and Population

- Retrospective chart review of patients scheduled for otolaryngologic procedures
- Timeframe: March 16 to May 29, 2020
- Otolaryngology Department at a tertiary care center in Philadelphia, PA
- Cases were categorized by subspecialty and analyzed for cancellation and rescheduling rates
- Subspecialties included:
    - Head and Neck Surgical Oncology
    - Sleep Surgery
    - Rhinology and Skull Base Surgery
    - Facial Plastic and Reconstructive Surgery
    - Otology and Neurology
    - Laryngology

Outcome Measures

- Primary: Rate of cancellation and rescheduled cases
    - Rescheduled cases were defined as cases rescheduled within 6 months of the originally scheduled surgery
- Secondary: Rate of nosocomial COVID-19 infections for patients undergoing surgery

Analysis

- Case completion rate was calculated using the formula:

$$\frac{(\text{Scheduled Cases} - \text{Cancelled Cases} + \text{Rescheduled Cases})}{\text{Total Cases Scheduled}}$$

Results

- Of 833 Otolaryngology cases scheduled between March 16th and May 29th, 2020, 555 (66.63%) were cancelled due to COVID-19 precautions
- 395 (71.17%) of the cancelled surgeries were rescheduled within 6 months of the originally scheduled surgery date
- Within Otolaryngology, case completion differed greatly. Completion was greatest for Head and Neck Oncology (95.2%) and least for Sleep Surgery (69.9%) - *Table 1*
- The nosocomial infection rate for patients who underwent and surgeons who participated in an Otolaryngologic procedure during the studied timeframe was 0%

Table 1: Case Completion Rate by Subspecialty

	Head and Neck Oncology	Sleep Surgery	Rhinology and Skull Base Surgery	Facial Plastic and Reconstructive Surgery	Otology and Neurotology	Laryngology
Total Cases	208	199	172	150	38	35
Cancelled Cases	89	167	125	120	27	24
Rescheduled Cases	79	107	81	89	18	19
Case Completion Rate (%)	95.2	69.9	74.4	79.3	76.3	85.7

Discussion

- All subspecialties within Otolaryngology suffered significant rates of cancellation during COVID-19 lockdown precautions
- Within Otolaryngology, patients and surgeons involved in rhinology and head and neck oncologic procedures are at most risk for COVID-19 exposure [3]
- At our institution, Head and Neck Oncology comprised the highest completion rate, as most surgeries fell into Tier 1 at our institution
    - At our institution, neither surgeon nor patient suffered nosocomial exposures related to surgery
- Although the risk for transmission remains high, a study from the United Kingdom indicated that head and neck surgical procedures are safe for surgeons with proper PPE as zero out of 47 patients contracted COVID-19 from surgery [8]
- In our department, Head and Neck Surgical Oncology had the highest number of cases originally scheduled, lowest number of cases cancelled, and highest number of cases rescheduled
    - Can be explained by this subspecialty having the highest percentage of time-sensitive and oncologic procedures as compared to others
- In contrast, Sleep Surgery had the most cases cancelled, and fewest cases rescheduled
    - Can be explained by this subspecialty having more elective and non-time-sensitive procedures as compared to others

Conclusions

- The discrepancies between cancellation, rescheduling, and case completion rate within the Otolaryngology subspecialties are multifactorial
- Surgeons and patients were required to weigh time sensitivity of interventions and disease processes against perceived risk of nosocomial infection during the surgical encounter
- Surgical subspecialties varied greatly in rates of case completion and cancellation, however, all cases completed were done so safely and without associated COVID-19 transmission

References

1. Ralli M, Minni A, Candelori F, Cialente F, Greco A, Vincentiis MD. Effects of COVID-19 Pandemic on Otolaryngology Surgery in Italy: The Experience of Our University Hospital. *Otolaryngology–Head and Neck Surgery*. 2020;163(1):86-88. doi:10.1177/0194599820928970
2. Lee Y, Kirubarajan A, Patro N, Soon MS, Doumouras AG, Hong D. Impact of hospital lockdown secondary to COVID-19 and past pandemics on surgical practice: A living rapid systematic review. *The American Journal of Surgery*. November 2020. doi:10.1016/j.amjsurg.2020.11.019
3. Piccirillo JF. Otolaryngology–Head and Neck Surgery and COVID-19. *Jama*. 2020;324(12):1145. doi:10.1001/jama.2020.15779
4. Anagiotos A, Petrikkos G. Otolaryngology in the COVID-19 pandemic era: the impact on our clinical practice. *European Archives of Oto-Rhino-Laryngology*. 2020;278(3):629-636. doi:10.1007/s00405-020-06161-x
5. Couloigner V, Schmerber S, Nicollas R, et al. COVID-19 and ENT Surgery. *European Annals of Otorhinolaryngology, Head and Neck Diseases*. 2020;137(3):161-166. doi:10.1016/j.anorl.2020.04.012
6. Gallo O, Locatello LG, Orlando P, et al. The clinical consequences of the COVID -19 lockdown: A report from an Italian referral ENT department. *Laryngoscope Investigative Otolaryngology*. 2020;5(5):824-831. doi:10.1002/lio2.446
7. Fan T, Workman AD, Miller LE, et al. The Impact of COVID-19 on Otolaryngology Community Practice in Massachusetts. *Otolaryngology–Head and Neck Surgery*. February 2021:019459982098373. doi:10.1177/0194599820983732
8. Brar S, Ofo E, Hyde N, et al. Outcomes of elective head and neck confirmed or suspected cancer surgery during the COVID-19 pandemic. *European Archives of Oto-Rhino-Laryngology*. 2020;278(4):1277-1282. doi:10.1007/s00405-020-06194-2

@ResearchAtJeff