COMMENTARY

Impact of COVID-19 on Ear, Nose, and Throat Practices in a Tertiary Care Center

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Abstract

The increased risk faced by otorhinolaryngologists during coronavirus disease-2019 (COVID-19) is due to high concentration of viral particles in the upper aerodigestive tract. There have been multiple recommendations and reviews for COVID-19 pandemic among the otolaryngologists for different regions of the world, but it is more of lessons learnt than definitive evidence due to lack of any study on the healthcare worker. Therefore, we must learn from each other's prospective so as to change lessons into practice and time testing of all these might bring out the most applicable standard of care. This study focuses on the changes in the operation theater (OT), outpatient department (OPD), emergency, and other routine services in the Otorhinolaryngology department of PGIMER which caters to a majority of North Indian population.

Keywords: COVID-19, Otolaryngology, Practices.

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Introduction

Medical practices for any institute during the times of pandemic depends on many factors like type of hospital/practice, extend of infection in the community catered by the center, availability of personal protective equipment (PPE), economic constraints, and type of specialty.[1]

There have been multiple publications describing the potential for increased risk faced by otolaryngologists due to high concentration of viral particles in nasal cavity, nasopharynx, oral cavity, oropharynx, and lower respiratory tract.

The concern is heightened by the potential of certain diagnostic and surgical procedures to cause aerosolization of the viral particles which leads to the formation of smaller droplets that desiccate and spread via diffusion.[1] These particles remain airborne for hours and thereby affecting anyone visiting the area and not just the treating surgeon.

Despite active research, correlation between potential aerosolization and actual transmission has not been established.[1] So, assuming that prevention is better than calculating the rate of transmission, we made some changes in our practice to keep the otolaryngologist and the assisting staff safe during the pandemic. The study focuses on the changes in the operation theater (OT), outpatient department (OPD), emergency, and other routine services made in the Department of Otorhinolaryngology, PGIMER which caters to a majority of North Indian population.

Alterations Which Need to be Made in Ear, Nose, and Throat Practices

Routine Procedures

- Routine procedures generating aerosols, such as suctioning, intubations, tracheotomy, and bronchoscopy. Procedures that can cause the patient to cough or sneeze like nasal endoscopy (NA) in local anesthesia (LA), fiber-optic laryngoscopy, indirect or direct laryngoscopy are also risky.
- All tracheotomized patients whether on OPD basis or admitted would require regular suctioning which is performed using a closed suction system with proper precautions.
- All emergency intubations, tracheotomy, and endoscopies are performed assuming the patient to be a coronavirus disease-2019 (COVID-19) suspect.
- Recommended PPE in different settings and tracheotomy guidelines are followed.[2]
- For elective tracheotomies for prolonged intubation or a reversible pathology, the procedure is delayed.
- Diagnostic endoscopies or NAs are avoided and replaced by radiological investigations.
- Laryngoscopic examinations for follow-up patients for carcinoma larynx are avoided and staging is preferably performed based on the radiology.
- Any necessary endoscopies for foreign body, life-threatening malignancy, epistaxis, etc., should be planned under general anesthesia (GA) with PPE based on the COVID-19 status of the patient.
- Procedures regularly performed in minor OT (MOT) under LA like ear cleaning, wax removal, wick placement, suture removal, biopsy from accessible regions like oral cavity, decannulations, tube changes, Ryle's tube placement, dressings, minor excisions, lobuloplasty, cryotherapy for small lesions, nasal pack removals are performed with PPEs in case of otitis externa, biopsies, and absolute dysphagia. For others, the patients are counseled regarding the elective nature of the procedure on phone to avoid a hospital visit.

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- All surgical procedures are categorized into emergent, urgent, time-sensitive, routine priority following the American Academy of Otolarynology and Head Neck Surgery (AAO-HNS) guidelines.[1]

Basics about PPE

The level of PPE required is based on the nature of procedure (to decide upon risk of aerosolization) and COVID-19 status.[3] But the decision is not strictly binary due to false-negative tests and presence of asymptomatic positive carriers. So, all healthcare workers wear basic scrubs while on duty and change prior to leaving.

For COVID-19 positive patients, staff is provided an N95 or higher-rated mask, face shield, gown, and gloves. Powered air-purifying respirator (PAPR) may also be considered in high-risk patients.

Role of Telemedicine

Gradually moving toward regularization of the OPD and OT services for the department, the concept on telemedicine using smartphones having facility of video calling is being used.

This helps to do a telephonically triage of patients so as to prevent excessive load on emergency services, counsel them regarding the nature of their disease and urgency of treatment, get basic workup performed locally to prevent unnecessary travel, avoid physical presence in the hospital, and recruit patients for OT. This service has been running in the center for last few years but the concept of a tele-OPD was introduced as the first phase before starting the physical OPD.

OPD

The physical OPD will be started on the basis of following salient features:

- Teleconsultation to prevent excessive crowding and do necessary triage.
- Time-based appointment system with a cap on the number of patients.
- Screening at the OPD gate using screening pro forma and thermal screening.
- Regulate entry and ensure use of mask, hand hygiene, and social distancing.
- One patient in one room, if possible without attendant or maximum single attendant.
- ENT duty doctor would use level 1 PPE while seeing patients in his/her chamber.
- Routine endoscopies would be avoided; if at all required, they would be performed in a separate room with level 2 PPE kits by a senior doctor to make the procedure quick.
- Also, biopsies and emergency tracheotomies are to be performed with same precautions.
- Separate and supervised donning and doffing area.
- Delay surgeries for pathologies which are not life-threatening like continue use of steroid sprays for polyposis. Systemic steroids should preferably be given after discussing with the patient regarding the risks of any emergency surgery that might expose him/her to a COVID-19 positive service provider or patient. Also, there is risk of worsening of an asymptotic COVID-19 infection with steroids.

Ward

- Patients in general ward either from emergency or tele-OPD are always admitted post-COVID-19 testing. Suspected patients are kept in separate isolation wards till they have at least one COVID-19 negative report.
- Regular pass system to visit patients has been demolished and only one attendant per patient is permitted except in special cases where request is placed to the nursing in charge or the head of department. No visitors allowed.
- Regular sanitization of hands and thermal screening at every building is a must. Masks and sanitizer are available free of cost at the entrance of all buildings in the hospital.
- Like in non-COVID-19 times, the concept of a sanitizer and glove box at every bed is even more significant now and is being strictly enforced.
- Regular disinfection of the wards, duty and procedure rooms, and instruments is being thoroughly done.
- Admission is preferably done on alternate beds to ensure distancing and patients with tracheotomy who are at high risk for aerosol generation are given separate chambers in the ward. Use of heat and moisture exchanger (HME) and T piece is encouraged to prevent contamination.

OT and Preoperative Preparation

- All patients posted in elective OT have to be admitted at least 24 hours prior to the procedure date for necessary investigations and COVID-19 testing via reverse transcription polymerase chain reaction (RT-PCR).
- Dual testing is advocated — one from area where the patient lives and another after admission just before surgery and then ensuring self-isolation until the procedure date.
- There are separate OTs for positive and negative COVID-19 patients.
- Minimal number of healthcare personnel should be present in the operating room (OR) especially during intubation and extubation.
- All risky aerosol procedures are carried out by a senior/experienced surgeon to minimize OR time and thereby risk to the other staff.
- Personal protective equipment level depending on the guidelines should be worn[2] with or without respirators.
- Modifications in techniques have been done to decrease the radius of contamination like use of extra sterile drapes during bone drilling.
- Aerosol-generating procedures are avoided under LA.
- Elective surgeries like mastoidectomies for chronic otitis media (COM), functional endoscopic sinus surgery (FESS) for polyposis, pituitary, or lateral skull base surgeries are avoided.
- A continuous suction should be placed near the operating field; use of monopolar cautery and laser is avoided.

Emergency Services

- Emergency procedures like tracheotomy for stridor, debridement/orbital exenteration/biopsy for mucormycosis, mastoid or neck abscess drainage, necrotizing fasciitis, airway foreign body, laryngotracheal trauma, biopsy for life-threatening/aggressive malignancies, cauterization for epistaxis,

etc., still evoke the same emergent response as in non-COVID-19 times.
- The precautions excised and guidelines are almost same as those for any other case in the OR except for the fact that some tracheomized have to be performed without any tests and thereby assuming that the patient is COVID-19 positive.
- In case of impending airway compromise, testing can be performed using GeneXpert rather than RT-PCR to get faster results.
- Dual testing is performed only when the patient has persistent pulmonary symptoms/fever/cough, etc. One before and one after the procedure to ensure safety of the staff and determine appropriate perioperative precautions.
- For suspected tracheobronchial foreign body, endoscopy is performed only for symptomatic cases. In less obvious cases, a radiological screening is preferred.

Conclusion

Otolaryngologists are at risk for many reasons most common of which is a tracheotomy. Due to overlapping symptoms with rhinitis and pharyngitis, an ENT practitioner in OPD is prone to exposure from a COVID-19 suspect/case. In emergency setup, sudden distress might call for intubation or tracheotomy in a positive patient. In OT setup, nose, larynx, and pharynx would harbor majority infection and thereby any manipulation leads to aerosol generation.

There have been many strategies to care for general ENT patients during the pandemic and protect healthcare workers at the same time.[4] There have been multiple recommendations and reviews for COVID-19 pandemic among the otolaryngologists for different regions of the world but it is more of lessons learnt than definitive evidence due to lack of any study on the healthcare worker. Therefore, we must learn from each other's prospective so as to change lessons into practice and time testing of all these might bring out the most applicable standard of care.

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