

Original Research Article

Management of ear, nose, and throat out patient department in COVID-19 pandemic, experience: a descriptive study

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ABSTRACT

Background: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus responsible for coronavirus disease 2019 (COVID-19) has a predilection for infecting the mucosa of the upper and lower airways. Otolaryngologists and supporting health care workers (HCWs) are particularly at high risk of becoming infected while treating patients as many in-office procedures and Aerosol Generating Medical Procedures (AGMP). Based on a review of the literature and various guidelines, recommendations are made to mitigate the risk to health care workers from becoming infected with SARS-CoV-2 while providing clinical care. During the COVID-19 pandemic, all elective and non-time sensitive Otolaryngology procedures should be deferred to mitigate the risk of transmission of infection to HCWs. Objective of the study was to describe outpatient presentations requiring otolaryngology consultation and provide recommendations for protective measures based on the experience of ENT department in S Nijalingappa Medical College.

Methods: Personal protective equipment (PPE) use and infection control strategies implemented for ENT outpatients in S. N. Medical College, Bagalkot.

Results: After implementation of infection control strategies for outpatient clinics, no health care workers were infected in the ENT OPD.

Conclusion: Otolaryngologists play an indispensable role in the treatment of COVID-19 patients but, due to their work, are at high risk of exposure. Appropriate protective strategies can prevent infection to otolaryngologists

Keywords: COVID-19, SARS-CoV-2, PPE, HCW, AGMP

INTRODUCTION

COVID-19 is an infectious respiratory disease caused by the novel virus severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).¹⁻⁴ On March 11th 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic.⁵

Due to lack of adequate awareness and sufficient infection control plans during the early stages of the pandemic, many healthcare workers (HCW) were infected.^{3,6,7} In particular, HCWs in 'infectious disease'

specialties such as otolaryngology were infected at higher rates than colleagues in the same hospitals.⁸ According to the data of Italian national health agency, 6414 healthcare workers have been infected SARS CoV-2 as of March 26th 2020.

Otolaryngologists are by the nature of their work at high risk for exposure to respiratory pathogens. During the course of routine evaluation and management of patients, otolaryngologists and their staff will inevitably come in direct contact with upper respiratory tract secretions or blood, which may become aerosolized during an

inadvertent sneeze or cough. Such events can occur during a nasal and upper airway endoscopy, while performing a nasal culture or nasopharyngeal swab for SARS-CoV2, or simply during routine examination of the oral cavity and oropharynx, exposing the healthcare provider to potentially infectious agents.⁹⁻¹⁴

The most commonly reported symptoms of COVID-19 include fever, cough that may be productive, dyspnoea and myalgia with fatigue.⁹ However, patients suffering from COVID-19 may also present with symptoms of upper respiratory tract infection, such as sore throat (5-14%) and/or rhinorrhoea (4%).^{10,11} Carriers of COVID-19 may shed a heavy viral load into the environment even if they are asymptomatic or present with very subtle symptoms. Recently anosmia, hyposmia and dysgeusia, which affect patients' senses of smell and taste, were identified as symptoms of COVID-19. This article aims to review the otolaryngologist experience treating ENT patients in OPD and to propose appropriate protective measures to prevent the spread.

Objective of the study was to describe Outpatient presentations requiring otolaryngology consultation and provide recommendations for protective measures based on the experience of ENT department in S. Nijalingappa Medical College.

METHODS

Retrospective case series were the study design for this study and carried out at ENT OPD tertiary care center S.N. Medical College, Bagalkot from March 2020-August 2020. Subjects were all out patients requiring ENT consultation (3800 patients). The inclusion criteria were all patients presenting with ear, nose and throat symptoms. Exclusion criteria excluded patient having temperature $>37.4^{\circ}\text{C}$ are excluded from study. PPE kits used and infection control strategies implemented for ENT outpatients in S.N. Medical College, Bagalkot.

General protective measures



Figure 1: Thermal screening.

Figure 1 shows that thermal screening should be done for all patients entering ENT OPD along with hand hygiene and mask. This, ensures minimal exposure to staff and the patient. Patients having symptoms suggestive of COVID-19 were send to COVID-19 screening clinic for further evaluation. One patient at a time in ENT OPD, if possible, without attender. This enables other patients in ENT OPD are safe.

Recommended PPE in OPD consultation for surgeon

Surgical mask/ N-95, Gown, Disposable gloves, Face shield, Goggles, hair cover and hand hygiene these are the recommended PPE in OPD consultation for surgeons. OPD consultation room is well ventilated for the examination of the patients coming to the consultation.

Two-way communication through glass door



Figure 2: Two way communication strategy.

Figure 2 shows the adopted strategy of two-way communication through glass door via microphone communications. This technology allowed us to see patients with social distancing. Telecommunication was used for simple ailments.

History taking

Patient were triaged at clinic fulfilling the criteria Fever, Travel history, Occupational exposure, Contact history and Clustering phenomenon (FTOCC) were segregated and managed with mask on. The travel history to high risk areas was updated in response to the evolving pandemic according to our local guideline from the Centre for Health Protection and high-risk patients were sent for COVID-19 screening. Additionally, patients were asked to wear a mask at all times before entry to the hospital area, except during the examination to minimize the dispersal of droplet nuclei during patient transfer.¹⁵

ENT examination

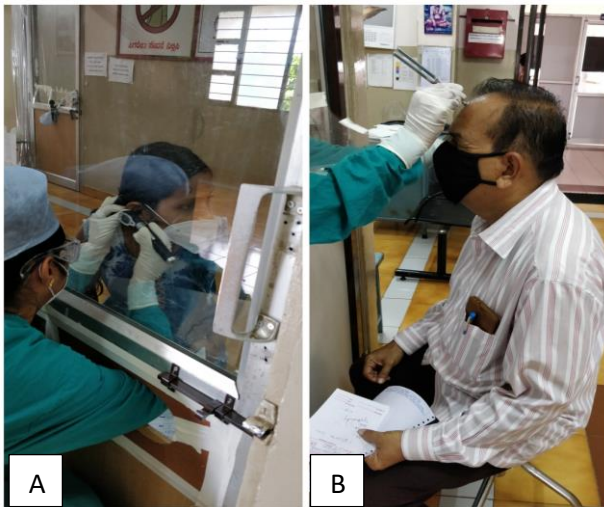


Figure 3: (A) Otoscopic examination: patient was behind glass door and surgeon examined ear with proper precautions. (B) Tuning fork test (Weber's test) for evaluating the type of hearing loss.

Nose and throat examination



Figure 4: (A) Anterior rhinoscopy examination by Thudicum nasal speculum and headlight for visualization of nasal cavity. (B) Oral cavity and oropharynx examination by tongue depressor to visualise the tonsillar pillars, posterior pharyngeal wall.

OPD procedure

Foreign body in the ear and wax was removed with ear syringing. Otomycotic debris and discharge was suctioned out with ear suctioning. IDL examination was done to see the condition of vocal cords.



Figure 5: IDL examination done with proper instructions to the patient.

At the end of each examination all disposable materials must be disposed properly. All contact surfaces as well as used instruments must be disinfected, PPE kit should be disposed properly.

All OPD chambers are sanitize twice daily with Detergent and freshly prepared 1% sodium hypochlorite solution. Sensitive instruments (Otoscope, BP apparatus) were wiped with spirit before each patient contact. Examination instruments were autoclaved.

Statistical analysis

Data entered in Microsoft excel and later analysed statistically by SPSS software version 21, Percentages and proportions for qualitative data are applied.

RESULTS

After implementation of infection control strategies for outpatient clinics, no health care workers were infected in the ENT OPD in S.N. Medical College, Bagalkot.

Out of the total 3800 patients examined in the ENT OPD from March 2020 to August 2020 in S.N. Medical college, Bagalkot. Maximum Patients were in 20-40 years age group (Table 1). Male patients were 53.8% (Table 2), Patient presented with more of ear symptoms followed by nasal and throat symptoms (Table 3).

Table 1: Age distribution of the patients.

Age (Years)	No. of patients	Percentage (%)
<20	954	25.1
20-40	1046	27.5
40-60	983	25.9
60-80	817	22.5

Table 2: Gender distribution.

Gender	No. of patients	Percentage (%)
Male	2045	53.8
Female	1755	46.2
Total	3800	100

Table 3: Complaints of the patient.

Complaints	No. of patients	Percentage (%)
Ear	1568	41.2
Nose	1178	31
Throat	1054	27.8
Total	3800	100

DISCUSSION

The emergence of COVID-19 presents challenges to provide adequate protection and prevent spread of infection among HCWs. Concerns regarding the potential routes of transmission, the severity of the disease and lack of effective treatments and vaccinations result in differing prevention strategies. In the early phases of a new pandemic with an unknown pathogen, extreme prevention strategies may be justified until (clinical) evidence reveals more details about transmission routes and the minimum set of precautions and PPE necessary to prevent transmission among HCWs.

After the SARS outbreak, Roy and Milton proposed an alternative classification of aerosol transmission of diseases.¹⁶ Obligate airborne transmission is seen with *M. tuberculosis*, which is only transmitted through inhalation of small, inspirable aerosols. Preferential airborne transmission is seen with measles and varicella in which multiple routes can lead to infection, but small aerosols are the predominant route. Finally, opportunistic airborne transmission is seen in diseases which are predominantly spread through other routes, but may be transmitted through small aerosols in rare occurrences as seen with influenza and SARS. At the time of writing, there are two reports which identified SARS-CoV-2 RNA on air vents of patient wards.^{17,18} Although concerning for potential airborne spread of the virus the clinical relevance is uncertain; droplet precautions appear to be adequate for the protection of HCWs who provide standard patient care to COVID-19 patients and airborne precautions with N95/FFP2 respirators appear to provide sufficient protection during aerosol generating medical procedures.¹⁹⁻²¹ These preliminary data suggest that SARS-CoV-2 may be classified as an opportunistic airborne transmitted pathogen: the predominant routes of transmission are through contact surfaces and aerosol spread over short distances, but occasional opportunistic airborne infections over long distances may occur. This would imply that airborne precautions with adequate protection of mucosal surfaces, is needed especially during procedures where aerosol formation is expected.

CONCLUSION

During this COVID-19 pandemic, the health and safety of HCWs is essential to ensure ongoing care of patients and to prevent the collapse of health care systems. By following strict infection prevention recommendations, the risk of HCWs becoming infected with SARS-CoV-2 while treating patients can be minimized. As the regional and national situations change rapidly, these recommendations should serve as guidance and will need to be interpreted based on local factors, availability of healthcare resources and new data as they become available.

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