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Management of Foreign Bodies in ENT OPD During COVID-19 Pandemic-Our Experience

[*1]Dr. M. Rohit Stephen, [2]Dr J. Muni Mahesh Babu,[3]Dr. Preeti S Raga

[4]Dr. Sanjana Kalimireddy

[1]Assistant professor, Department of ENT, Kamineni Institute of Medical Sciences, Narketpally, Nalgonda District, Telangana, India.

[2]Senior Resident,Department of ENT, Kamineni Institute of Medical Sciences, Narketpally, Nalgonda District, Telangana, India.

[3]Professor & HOD,Department of ENT, Kamineni Institute of Medical Sciences, Narketpally, Nalgonda District, Telangana, India.

[4]Junior Resident, Department of ENT, Kamineni Institute of Medical Sciences, Narketpally, Nalgonda District, Telangana, India.

Corresponding author: Dr. M. Rohit Stephen *

Abstract:

The novel coronavirus disease 2019 (COVID-19) pandemic has put unprecedented challenges on the medical community. Otorhinolaryngological procedures are associated with very high risk of transmission of the virus due to aerosol generation. Management of ENT emergencies due to foreign bodies during ongoing COVID-19 was challenging. This is a prospective study done in our tertiary care centre from June 2020 to December 2020, during COVID-19 pandemic. The challenges encountered in the management of these cases, precautions taken and protocols followed are being discussed. The foreign bodies should be removed by trained personnel and examination carried through improvised mini examination table by using Personal Protective Equipment taking all precautions to minimize aerosol generating procedures and limit the length of these procedures whenever possible. Additionally, the use of povidone-iodine in varying concentrations is emphasized in reducing the viral load in the aero digestive tract.No particular guidelines for foreign body removal duringCOVID-19 pandemic, we tried to develop protocol for foreign body removal, for the safety of both the patients and the treating doctors.

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KEYWORDS: Foreign body, COVID-19 pandemic, improvised mini examination table, povidone-iodine.

Introduction:

The corona virus disease (COVID-19) was declared as global pandemic by world health organization on March 11,2020.COVID-19 pandemic has put unprecedented challenges on medical community. Physicians and other health care workers who perform and participate in examinations and procedures on the head and neck region and airway are at particularly high risk of exposure and infection from aerosol and droplet contamination. Preventing covid-19 transmission in spite of aerosol generation is a big challenge. ENT surgical procedures are associated with very high risk of transmission of the virus due to aerosol generation[1-3]. Managing a foreign body is an emergency procedure which cannot be delayed or postponed or cannot be managed by teleconsultations like other acute/ chronic illness.

During initial national lockdown period various guidelines were proposed by different organizations PPE has been advised by the medical authorities, which is more protective than HIV/HbSAg kit[4].Protocols started evolving during this period for various procedures including emergency operations. As the time progressed, certain protocols were down staged for certain procedures. The aim of the study is to evaluate the challenges encountered in management of ENT foreign bodies during COVID-19 pandemicand to make guidelines regarding precautions and protocols to be follow.

Materials & methods:

This is a Prospective clinical study done in Department of Otolaryngology and head and neck surgery, Kamineni Institute of Medical Sciences, Narketpally, between June 2020 to December 2020.Patients with foreign bodies in Ear, Nose and Throatwere included in this study. Patents with foreign bodies in trachea, oesophagus and bronchus that requiredGeneral anaesthesia for removal were excluded from the study.

All patients with history of foreign body were evaluated after taking due precautions of using MASK &FACE SHIELD while taking history. All patients were screened for symptoms of COVID-19 like fever, dry cough, headache, myalgia, digestive disorders, acute anosmia, nasal obstruction, recent diarrhoea and were enquired about travel history and contact with positive patients[5].Precautions such as performing all the procedures in a designated room

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after wearing PPE kit[6-8] were taken for all patients irrespective of the patient's COVID-19 status.Initial Examination was carried out through improvised mini examination table(image 1)which has got protective glass screen with an aperture for arms.

All patients were given Povidone-iodine (PVP-I) 0·5% PVP-I solution prepared by diluting (1ml of 10% PVP-I in 20ml of sterile water or purified water or 1ml of 5% PVP-I in 10ml of sterile water or purified water).It was administered in a dose of 4–5 drops into each nostril 10min prior to examination[9]. For Oral/oropharyngeal foreign bodies 10ml of the 0·5% PVP-I solution was used as a mouthwash. It was ensured the solution was distributed throughout the oral cavity for 30seconds and then gently gargled for another 30seconds before spitting it out[9]. After taking those precautions foreign body removal was done in a designated examination room by Otorhinolaryngologist.

Results:

The study included a total of 60 patients with presentation of varied FB in the region of ear, nose and throat during COVID-19 pandemic. Out of 60 patients about 80% (48cases) were children. 25 children were lessthan 5 years of age, 18 werebetween 5-10 years of age, 5 patients werebetween 10-15 years of age.12 patients were more than 15 years of age.Majority of the patients 65% were males (39cases). The removal of FB was Successful in allpatients on OPD basis.Out of 60 patients, 36 patients presented with FB in theear,20in the nose and 4 patients in throat.(table-1). Surgeon faced the following Challenges during removal of these foreign bodies:

1) Donning and Doffing of PPE, which was addressed by adequate training.
2) Amongst many challenges in using PPE, fogging is a commonly encountered problem which hampers the visualization of the surgeon while examination, Hence visualization of foreign body wasdifficult. It was overcome by wiping the face shield with Savlon solution prior to the procedure.
3) Slight restriction of movements while examining through the improvised mini examination table was overcome by performing the routineexamination.
4) More challenges were faced with foreign body in the throat , such as fish bone stuck in vallecula, in order to prevent the gag, we sprayed 10% lignocaine spray and used flexible nasopharyngo laryngoscopy (instead of rigid endoscopy) with curved laryngeal foreign body forceps through oral cavity.

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Table-1: Distribution of ENT foreign bodies by GENDER, SITE

Site	Male	Female	Total
Ear foreign bodies	25	11	36(60%)
Nasal foreign bodies	11	9	20(33.33%)
Throat foreign bodies	3	1	4(6.66%)
Total	39(65%)	21(35%)	60

Image 1: Improvised mini examination table

Discussion:

ENT examination and procedures are associated with very high transmission risk of COVID-19 due to high aerosol generation from the upper aero digestive tract[10]. The oropharynx and nasopharynx are the target sites of novel corona virus with the result that saliva contains a high viral load of COVID-19 with up to 1.2×10^8 infective copies per ml[9]. As a Otorhinolaryngologist is closely working in this area, there is a significant risk of exposure during routine office based examination and procedures of ear, nose and throat.These areas are the main reservoirs to seed the lower airway and also contribute to aerosolized transmission of the virus

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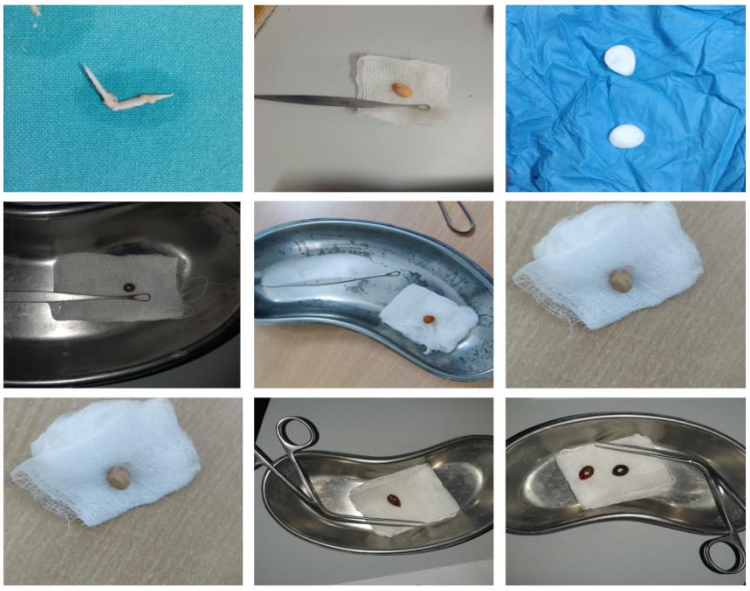
Image2: Shows some of the foreign body removed during this study



During the initial pandemic period, there were scarcity of covid-19 testing kits and screening of the patient was solely dependent on the symptoms, history of travel, contact with the positive patients and plain radiograph of the chest.Povidone-iodine (PVP-I), a widely available topical broad spectrum antiseptic with viricidal activity against a wide range of common viruses, including SARS-CoV(Severe acute respiratory syndrome– related coronavirus) and MERS-CoV (Middle East respiratory syndrome coronaviruses).Systematic precautions should be taken for all procedures irrespective of the COVID-19 status of the patient. We adopted the following measures for all our cases

1) Detailed history of COVID-19 symptoms
2) Initial examination through improvised mini examination table
3) Instillation of 4–5 povidone iodine drops into each nostril 10min prior to examinationin patients with nasal foreign body.
4) Oral/oropharyngeal wash with povidone iodine solution in patients with throat foreign body.
5) For patients with ear foreign body, asking the patient to wear N95 mask is sufficient as the risk of aerosol transmission in very low.
6) ENT surgeons should wear full personal protective Equipment (PPE), consisting of FFP2(filtering face piece) mask, overcoat, cap and protectiveglasses[6-8].
7) Trained personnel should attempt removal of foreign body through the improvised mini examination table in order toreduce the contact time between the patient and doctor.

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Conclusion:

Foreign bodies are one of the commonest emergencies in the field of Otorhinolaryngology. Delayed presentation leads to increased morbidity and mortality. Before performing any emergency/elective procedure, COVID-19-specific preoperative planning and preparation is important, considering the high transmission rate and prolonged aerosolization of this virus. The above mentioned protocols will help in reducing the aerosol exposure to the health care personnel, thus reducing the risk of transmission.

Conflict of Interest: None

Funding Support:Nil

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