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**Kavita Lohani**  
PG Resident, Government  
Medical College Haldwani,  
Uttarakhand, India

**Vaibhav Kuchhal**  
Head of Department ENT,  
Soban Singh Jeena Medical  
College, Almora, Uttarakhand,  
India

**Shahzad Ahmad**  
Head of Department ENT,  
Government Medical College,  
Haldwani, Uttarakhand, India

## Pre COVID and COVID era foreign bodies in ENT: A case series

**Kavita Lohani, Vaibhav Kuchhal and Shahzad Ahmad**

### Abstract

Foreign bodies (FB) in ENT department are readily encountered. As a front line health workers ENT specialists has to encounter the COVID patients as a firsthand experience. Foreign body examination and management was a challenge in COVID times because of use of bulky PPE kits, head gears and protective spectacles. Here in this case series we emphasize the comparative management of managing same before and during COVID era. We carried out a retrospective analysis of 08 patients with diagnosis of atypical foreign body in ENT and there presentation, attended in the emergency/OPD of the Dr. Sushila Tewari Hospital haldwani & SSJ Base hospital haldwani in pre and post COVID era. Case series includes management of 3 pre COVID and 5 post COVID atypical foreign bodies in ENT. FBs in the ear and nose were found more frequently in children, and the throat was the most common site of FBs. In COVID era parents are advised for being more vigilant and monitor the children while playing at homes. Proper personal protective equipment with face shield should be used while dealing with FB's in COVID times.

**Keywords:** Foreign body, pre COVID, COVID, ENT FB

### Introduction

Foreign bodies represented a large category among ENT emergencies (30%)<sup>[1]</sup>. A foreign body (FB) is any object in a region it is not meant to be, where it can cause harm by its mere presence if immediate medical attention is not sought<sup>[2]</sup>. FB may be classified as animate (living) and inanimate (nonliving). The inanimate FBs can further be classified as organic or inorganic and hygroscopic (hydrophilic) or non-hygroscopic (hydrophobic)<sup>[3]</sup>. Foreign body impaction continues to impose a heavy burden of patients for otorhinolaryngologist which have been estimated to account for approximately 11% of the total cases seen in ENT services<sup>[4]</sup>. We all encounter foreign bodies in our routine clinical practices in ear, nose, and throat (ENT) region. Some of them are common like nuts, jewellery and grain particles. It is commonly seen in children who have habit of inserting nearby objects in their nose, ear or mouth. This can cause minor irritation to life threatening problem. Removal of FB requires good light, a cooperative or fully restrained patient and a gentle approach by the clinician. An accurate diagnosis of the FB should be made prior to attempts to remove it<sup>[5]</sup>.

### Aims and Objectives

To establish a comparative analysis in approach of examination and management of foreign bodies presenting in ENT department before and during COVID period.

### Materials and Methods

We carried out a retrospective analysis of 08 patients with diagnosis of atypical foreign body in ENT and there presentation, attended in the emergency/outpatient department of the Dr. Sushila Tewari Hospital Haldwani & Soban Singh Jeena Base hospital Haldwani in pre and post COVID era.

### Inclusion criteria

We took into consideration the age, sex, location of the foreign body, time of insertion and removal of the foreign body, type of foreign body, complications and most common symptoms.

The material used for removal of foreign bodies includes nasal and auricular specula, tongue depressor, flexible and rigid optical fibers of 4mm of diameter (70o, 0o and 30o), optical fiber laryngoscope, rigid and flexible bronchoscope, Hartmann and alligator tweezers, ear washing syringes and removal in the surgical center with general anesthesia where ever required.

### Exclusion criteria

Pre attempted foreign body expulsion in excluded from study.

**Kavita Lohani**  
PG Resident, Government  
Medical College Haldwani,  
Uttarakhand, India

**Study duration**

November 2019 to October 2020.

**Study design**

Retrospective study

**Foreign body in pre COVID times**

**Case 1**

A 68 year old male, resident of Rajendra nagar Nainital, presented in ENT OPD, with the chief complaint of swelling in center of forehead \* 8 month, painless discharge from forehead \*6 month. There was no history of seizures, dizziness, loss of consciousness. History of trauma was there 2 years back. On ENT examination there was painless swelling in the forehead with a discharging sinus. Systemic

examination was not significant. Contrast Enhanced Computed Tomography Nose & Para Nasal Sinuses revealed? Osteomyelitis of frontal bone and localized pus collection. A large fistula with an external opening in mid of forehead region communicating with left frontal sinus and ethmoidal sinus, was reported on fistulogram. With inputs of history, clinical examination and investigations diagnosis of ‘Frontal Osteomyelitis with retained foreign body was made’ was made. After initial iv antibiotics for 3 days, ‘fistulectomy and obliteration with omental fat’ was done. Patient recovered well after surgery with no discharge and Swelling also subsides. This case is interesting and rare as the cause of foreign body was organic foreign body (wood) recovered during surgery not visualized during investigations.



Figure elaboration from right to left

**Fig 1:** Patient with discharging sinus in forehead.

**Fig 2:** Contrast Enhanced Computer Tomography nose & PNS showing? osteomyelitis of frontal bone and localized pus collection.

**Fig 3:** Fistulogram showing large fistula with an external opening in mid of forehead region communicating with left frontal sinus and ethmoidal sinus.

**Fig 4:** Frontal sinus with foreign body *in situ*.

**Fig 5:** Obliteration of frontal sinus with Omental fat.

**Fig 6:** Foreign body with sinus tract.

**Fig 7:** Post-operative day 8.

**Fig 8:** Foreign body.

**Case 2**

A 26 year old male, tailor by occupation presented in the causality of Sushila Tiwari Hospital with pain right side of neck since 2 hrs. Pain was severe and gradually progressive and the patient started having difficulty swallowing. Patient gives history of something inserted in neck while going to sleep. Patient was under the influence of alcohol. Vitals of the patient were normal and all the emergency investigations were sent. X- RAY neck AP and lateral were done where a needle was seen at C6 level obliquely at left side. Urgent CECT neck of the patient was done where the foreign body

(needle) was found lying obliquely in prevertebral soft tissue at level of body of C6 vertebrae medial to the carotid sheath on left side of neck. During management general anaesthesia was induced. Foreign body (needle) position accessed with C ARM. A horizontal incision around 5cm was given on left side of neck 2cm above suprasternal notch. Subplatysma flap was elevated and blunt dissection done. Foreign body was identified medial to carotid sheath behind thyroid. Foreign body removed, suturing done and scalp vein drain inserted. After achieving haemostasis dressing was done.



Figure elaboration from right to left

**Fig 1:** Patient with swelling in right side of neck.

**Fig 2:** Exploration of neck for foreign body.

**Fig 3:** Foreign body (Needle).

**Case 3**

Fifteen year old male came to causality of Sushila Tiwari Hospital, Haldwani with complaint of accidental foreign body insertion in nose while doing air firing in his farm.

Patient was complaining of pain in nose. Vitals of patient were normal. Immediately X ray nose lateral view and X ray

paranasal sinus was done suggesting of radioopaque foreign body in nasal cavity.

After all emergency investigations, preanaesthetic checkup was done and foreign body was taken out from right nasal cavity. Postoperative period was uneventful.

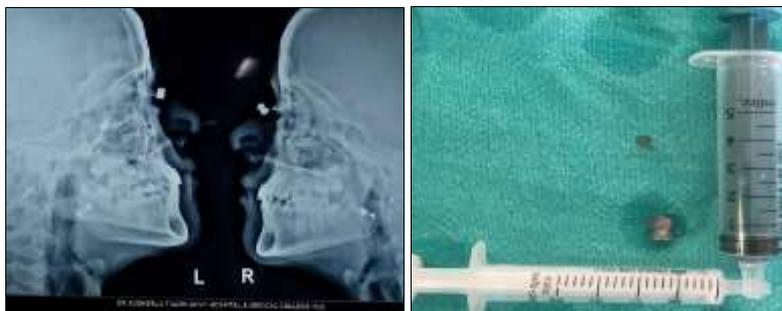


Figure elaboration from right to left

**Fig 1:** X-ray nose lateral view suggesting radio opaque foreign body in nasal cavity.

**Fig 2:** Foreign body (metallic bullet).

**Foreign body in COVID times**

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), firstly known as the 2019 novel Coronavirus (2019-nCoV), started in Wuhan in China at December 2019 [6]. Since that moment, the new virus, also known as Coronavirus Disease 2019 (COVID-19), has dramatic spread all over the world crossing all countries' borders till the World Health Organization (WHO) confirmed it as a pandemic disease on March 11, 2020 [7].

The COVID-19 is presented mainly by lower respiratory tract related symptoms such as fever, cough, dyspnea and chest tightness that could progress rapidly to acute respiratory distress syndrome (ARDS) [8]. However, COVID-19 causes also different upper respiratory tract related symptoms including nasal congestion, sore throat and smell dysfunction [9].

Patients were screened for symptoms of COVID-19, like fever, dry cough, headache, myalgia, digestive disorders, acute anosmia without nasal obstruction, acute dysgeusia including history of travel and contact with positive patients. Foreign body examination and management was a challenge in COVID times because of use of bulky PPE kits, head gears and protective spectacles.

Initial examination of the patient was done with Personal Protective Equipment (PPE). Those patients with the history of FB ingestion/aspiration were subjected to plain X-ray of

the neck. Those patients with unsuccessful attempts of FB removal on OPD basis were admitted and subjected to the following preoperative and intraoperative protocols, where the FB removal was done in an operating room under suitable anaesthesia. Only essential personnel were allowed in the operating room and all staff including the anaesthetists wore Personal Protective Equipment (PPE) which comprised of FFP2 mask, gloves, gown, eye protection and a cap.

**Case 1**

Ten month old male patient presented to ENT OPD with complaint of difficulty in breathing since one day. Parents gave history that child was sitting comfortably with his mother while she was making food in kitchen, suddenly his child inserts a piece of coal in his mouth followed by cough. They rushed to nearby hospital and referred to higher centre.

As patient arrived immediate x ray was done which was showing narrowing of airway, but foreign body could not be visualized. General condition of patient was also deteriorating with spo2 of 88 (with oxygen), after sending all emergency conditions and rapid antigen test for COVID, patient was shifted to operation theatre, GA induced and diagnostic rigid bronchoscopy was done. Piece of coal was taken out from trachea at about 1 cm below vocal cord. Patient was discharged two days after the operation and this period was uneventful.



Figure elaboration from right to left

**Fig 1:** X-ray AP view neck and chest with mild narrowing of airway.

**Fig 2:** Foreign body (coal).

**Case 2**

A 3 yr old male patient came to emergency department with ingestion of foreign body (part of audio cassette) with complaint of breathlessness since 3 hours. Immediately X ray

was done and radio opaque foreign body was seen in airway at C6-C7 level. After sending all emergency investigations, bronchoscopy was done under general anaesthesia. Foreign body was seen and taken out in toto.



Figure elaboration from right to left

**Fig 1:** X-ray neck AP and lateral view showing radio opaque foreign body obstructing the airway partially at C5-C6 level.

**Fig 2:** Foreign body in toto.

**Case 3**

A 3 yr old Male patient came to emergency department at Sushila Tiwari Government Hospital Haldwani with foreign body ingestion followed by two episodes of vomiting. After sending all emergency investigations and rapid antigen test

for COVID 19. X ray neck and thorax AP and lateral view was done. A radio opaque foreign body was found to be at C7 C8 T1 level. Rigid oesophagoscopy was done and foreign body was identified (coin) and taken out in toto.



Figure elaboration from right to left

**Fig 1:** X ray neck and chest AP and lateral view showing radio opaque foreign body at C7 C8 T1 level.

**Fig 2:** Foreign body (Rs 5 coin).

**Case 4**

A 4 yr old Female patient came to emergency department with ingestion of foreign body (Coin). Immediately X ray was done and radio opaque foreign body was seen in airway at

C7-C8-T1 level. After sending all emergency investigations, oesophagoscopy was done under general anaesthesia. Foreign body was seen and taken out in toto.



Figure elaboration from right to left

**Fig 1, 2:** X ray neck and chest lateral and AP view showing radio opaque foreign body at C7C8 T1 level.

**Fig 3:** Foreign body (Rs 1 coin).

**Case 5**

A 3 yr old Female patient came to emergency department with ingestion of foreign body (coin) since one day. Patient complaint of difficulty in swallowing since four hours. X ray was done and radio opaque foreign body was seen in airway

at C7-C8-T1 level. After sending all emergency investigations, oesophagoscopy was done under general anaesthesia. Foreign body was identified and taken out in toto. Postoperative period was uneventful and patient was discharged after one day.



Figure elaboration from right to left

**Fig 1:** X ray neck and chest lateral and AP view showing radio opaque foreign body at C5C6C7 level.

**Fig 2:** Foreign body (Rs 1 coin).

**Discussion**

Patients with various age groups, with various types of foreign bodies (FBs) and duration presents to ENT department. FBs may vary widely in shape, size, and composition, and the symptoms may range from asymptomatic to acute life threatening condition. Sometimes the history given by patients regarding foreign body is misleading and improper. In all such cases should be thoroughly evaluated, examined & investigated.

FBs are more common in younger children; this may be due to various factors such as curiosity to explore orifices, imitation, boredom, playing, mental retardation, insanity, and attention deficit hyperactivity disorder, along with availability of the objects and absence of watchful caregivers<sup>[10]</sup>.

In COVID times due to lockdown, schools were closed, children being at home were more indulged in house hold games with plastic and metallic foreign bodies especially coins. Children also have habit of putting foreign bodies in their mouth which gets slipped off in aero-digestive tract accidentally. This habit of children has increased as they feel bored being at homes all the times, not meeting with friends, not having outside food in restaurants, schools being closed. We encounter foreign bodies in aero digestive tract mostly in children.

Foreign body management in COVID times requires experienced surgeon with dedicated team as visualization of body with PPE kit, face shield, glasses and restriction of movement with PPE kit was a challenge for a surgeon.

It is necessary for physicians to be conversant with the common FBs ingested or aspirated in their communities of practice, and be prepared to render adequate and effective management, prevent complications and reduce morbidities<sup>[11, 12]</sup>.

**Impact of COVID 19**

While the effects of the COVID-19 pandemic have yet to be fully understood, it is already clear that, as of mid-May 2020, the number of daily deaths due to COVID-19 is greater than

that due to common causes such as malaria, suicide, road traffic accidents and HIV/AIDS<sup>[13]</sup>. The United Nations has called the COVID-19 pandemic “the greatest test that we have faced since the formation of the United Nations,” making it clear that it is more than a health emergency, it is a systemic crisis that is already affecting economies and societies in unprecedented ways. The managing director of the International Monetary Fund has anticipated “the worst economic fallout since the Great Depression. COVID 19 has impact on health, jobs, education, trade, environment, mental well-being of the society.

As a front line health workers ENT specialists has to encounter the COVID patients as a first-hand experience. COVID causes upper respiratory tract infections, anosmia, serous otitis media etc. Besides managing these conditions in COVID patients ENT specialist are actively involved in screening and sampling procedures of COVID. Wearing bulky PPE kits in summers in which ENT doctors have to stay for day and night in which one can't eat, drink, go to loo causing dehydration, dizziness, skin and mental problems etc. was a great challenge. Thus COVID has a great impact in lives of ENT Specialists, to be on toes in service of mankind in one of the biggest pandemic of human race be it in screening, sampling, OPDS, OT'S, and in emergency encountering the foreign bodies in aero-digestive tracts besides other emergencies. Impact of COVID 19 in managing foreign bodies in aero-digestive tracts involves extensive use of sanitizer, use of face shields and PPE kits. It was more challenging than before managing these FB's. FB's in ENT require a prompt and expertise skilled management of FB being in airway causing threat to life in no time. Air way being niche to COVID virus pose more challenge to get rid of these FB's without being infecting ourselves as we consider every patient being positive in COVID times. For us utmost patient care in every condition was the driving force like all other doctors, however we recommend use to masks, sanitizers and social distancing in fighting the menace of COVID and preventing in contacting the disease.

**Table 1:** Result

	Pre-COVID times	COVID times
Cases included	3	5
Sanitizer used	Yes	Yes
Face shield used	No	Yes
COVID testing	No	Yes
Examination with PPE	No	Yes
Difficulty in accessing foreign body due to face shield and PPE	No	Yes

**Conclusion**

FBs in the ear and nose were found more frequently in children, and the throat was the most common site of FBs.

**Recommendation**

In COVID era parents are advised for being more vigilant and monitor the children while playing at homes.

Proper personal protective equipment with face shield should be used.

All patients should be considered as COVID positive during first visit patients till their COVID negative reports as mostly we are dealing directly with the airway.

Adults and older children usually give a history of FB lodgement in ENT. But younger children are brought to the clinic by anxious parents or relatives. FBs may vary widely in shape, size, and composition, and the symptoms may range from asymptomatic to acute life threatening condition.

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