

# Glottic foreign bodies in infants: A series of four cases

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## ABSTRACT

**Foreign body in glottis especially in infants is rare. Retrieval of foreign body is a rather simple procedure but sharing of the airway with the anaesthetist and impeding complication makes it more challenging and dangerous. Making a diagnosis of foreign body is most challenging in delayed cases. Complete history and detailed physical examination along with high index of suspicion, in cases of persistent cough, fever, non-resolving respiratory infection, are needed to rule out airway especially laryngeal foreign body. This series of 4 cases is being reported because of the rarity of the glottis foreign body in infants.**

**Keywords:** Foreign Body; Bronchoscopy; Infant; Glottis

## 1. INTRODUCTION

Aspiration of foreign bodies in trachea-bronchial tree is common. Most patients are younger than 4 years old [1]. In literature, incidence of foreign body of the larynx has been reported from 0.7% to 6.1% among all aero-digestive foreign bodies [2-4]. Delay in diagnosis of the foreign body in airway has the potential to make a difficult situation even more serious [5].

## 2. PATIENTS AND METHODS

We reviewed the data of 79 patients with suspected history of foreign body aspiration who presented to the ENT casualty and pediatric emergency during a period of one year from August 2011 to August 2012.

## 3. RESULTS

In 6/79 (7.59%) patients foreign bodies were retrieved

from glottis, in among these 4/6 (66.67%) patients were under the age group of one year. All the four patients presented with the complaint of breathing difficulty of two days to two months duration (**Table 1**). Two of them had a history of choking and change in voice while two of them had a history of coughing and cyanosis. One of the patients was being treated for upper respiratory tract infection in some peripheral hospital with antibiotics and nebulisation for two months. Another patient was referred from the pediatric department for non-resolving respiratory distress of more than one week, the child had undergone fiberoptic laryngoscopy and was reported to be normal.

On examination all children were having respiratory distress of varying proportion however apparent suprasternal and intercostal retractions with biphasic stridor was present in 2 of the patients. Children were afebrile having no cyanosis. No abnormal cry or palpatory thud was noted over the trachea in any case. On auscultation bilateral air entry was equal in all cases with conducted sound in 2 cases. Rest of ENT examination as well as systemic examination was unremarkable.

Routine haematological and urine examinations were normal. X-ray of antero-posterior and lateral view of soft tissue neck revealed foreign body in the larynx in only three patients (**Figure 1**). Considering the possibility foreign body these children were subjected to microlaryngoscopy/bronchoscopy under general anesthesia on emergency basis.

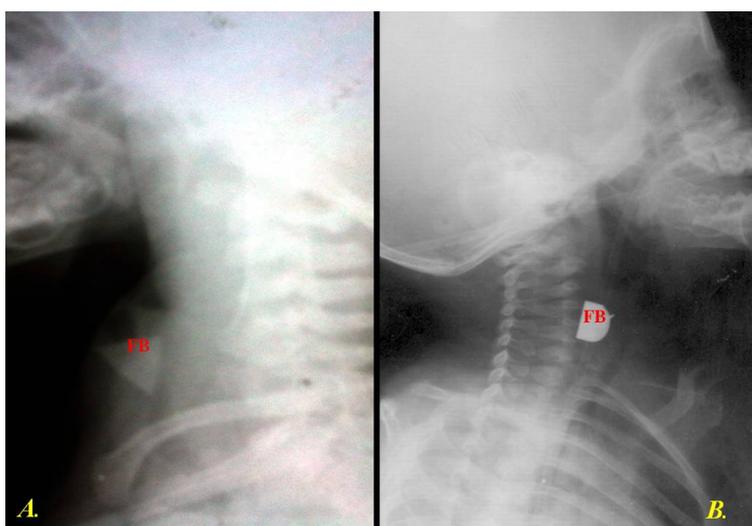
During the anesthesia, the children were induced using inhalational sevoflurane only with oral mask. No endotracheal tube was introduced throughout the procedure. Under deep inhalational anesthesia, direct laryngoscopy was done with videolaryngoscope and the foreign body was visualised entrapped in the endolarynx (**Figure 2**), which were removed using the appropriate forceps. The retrieved foreign bodies included a triangular piece of

glass, foil of the strip of medicine, a piece of plastic toy, buckle of belt (**Figure 3**). Check bronchoscopy was done after the foreign body removal which was unremarkable in all except in patient with long standing complaints

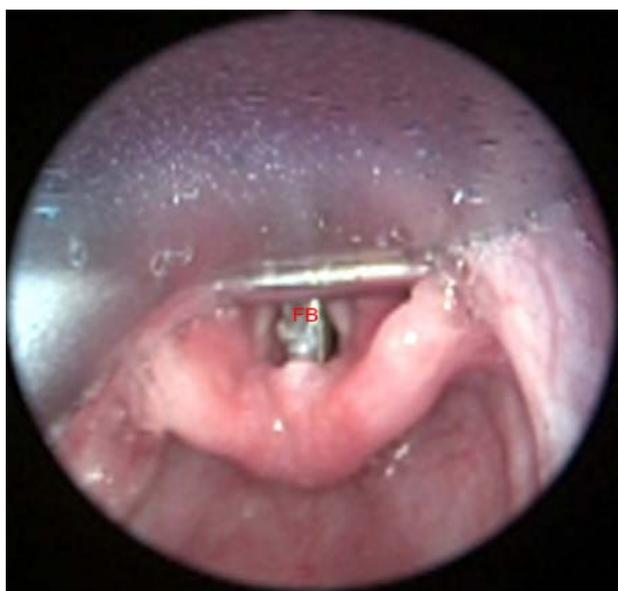
(Patient No 1) where raw areas on both cords at middle third were observed. Subsequently, all children were observed for overnight for any complication. Post-operative period was uneventful and children were discharged on

**Table 1.** Demographic profile of cases of foreign body larynx.

S. No.	Age/sex	Symptoms	Duration of symptoms	Type of foreign body
Patient 1	11 m, male	Breathing difficulty, change of voice, choking	2 months	Triangular glass piece
Patient 2	8 m, male	Breathing difficulty, change in voice	2 days	Foil of strip of medicine
Patient 3	5 m, female	Weak cry, breathing difficulty, cyanosis	5 days	Piece of plastic toy
Patient 4	9 m, male	Breathing difficulty, choking, cough	Few hours	Buckle of belt



**Figure 1.** X-Ray Soft tissue neck Lateral view showing the foreign body (FB). (A) Triangular glass piece; (B) Buckle of belt.



**Figure 2.** Foreign body (FB) covering the entire glottic chink.



**Figure 3.** Retrieved foreign bodies. (A) Triangular glass piece; (B) Pieces of plastic toy; (C) Foil of strip of medicine; (D) Buckle of belt.

next day without any medication.

#### 4. DISCUSSION

Foreign body larynx is not a common occurrence. Brkić [2], Lemberg [3], and Bittencourt [4] reported its incidence from 0.7% to 6.1% amongst all aero-digestive foreign bodies. It is prudent to diagnose aero-digestive foreign bodies as early as possible to minimize potential life-threatening complications in particular glottic foreign body. However, in many cases it is not easy to make the diagnosis as classical symptoms of choking, wheezing, and decreased breath sounds are absent [6]. The delay in diagnosis is attributable to patients' behaviour or circumstances where aspiration was unwitnessed [7]. Once the anaesthesia along with muscle relaxants is given, foreign body might fall down to subglottis or trachea which is a more difficult area to deal with.

The present case series reviews the prevalence of foreign body entrapped in the glottis in children, their presentation and duration of symptoms, and various types of foreign bodies encountered during their retrieval.

Making a diagnosis of foreign body is most challenging in delayed cases [5]. Complete history and detailed physical examination along with high index of suspicion, in cases of persistent cough, fever, non-resolving respiratory infection, are needed to rule out airway especially laryngeal foreign body. It also requires prior discussion and delibuation with anaesthetist due to potential diffi-

culty and complication that might occur during the procedure so that everybody in operating room is mentally prepared for the worst.

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