



## Fogarty Catheters-An Important Asset in Rounded Airway Foreign Bodies-A Case Report

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### Abstract

Foreign bodies of the airway present a life threatening situation especially in small children. The gold standard procedure for extraction of tracheo-bronchial foreign bodies has been rigid bronchoscopy. Certain foreign bodies with round and smooth surface pose a significant challenge to the bronchoscopist as these objects are tough to retrieve using conventional grasping forceps available. We present the case report of an 8 year old boy who aspirated a round plastic cylindrical bead lodged in the right main stem bronchus. Following unsuccessful attempts at removal by available instruments, the foreign body was removed safely using Fogarty balloon catheter with minimal trauma. We conclude that Fogarty catheters are an important and suitable alternative for removal of rounded foreign bodies in the airway. These catheters should be considered as an important part and asset of the armamentarium of a practicing bronchoscopist.

**Keywords:** Airway Foreign Body; Fogarty Catheters; Rigid Bronchoscopy; Pediatric Population

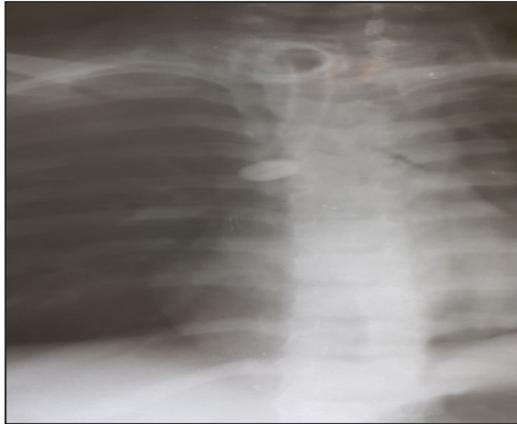
### Introduction

Foreign bodies of the tracheobronchial tree present a life threatening situation with highest incidence in the pediatric population of less than 5 years [1]. Characteristics of the foreign body lodged and duration of foreign body decides the course of illness. Most commonly found foreign bodies are of organic nature like peanuts, cashew nuts, seeds while other objects are also found occasionally [2]. Rigid bronchoscopy has been the standard procedure of choice for removal of foreign bodies [3]. Rigid bronchoscopic removal of foreign bodies is a technically challenging prospect in the pediatric population. Several ways to extract a foreign body from the airway have been documented over the years which include using various grasping forceps, use of dormia baskets and foley's catheters [4]. With newer types of foreign bodies continually presenting themselves, removal is tough despite previous experience in the removal of similar objects and availability of vast array of instruments.

Fogarty's balloon catheters have long been used for removal of foreign bodies of the airway, but usually as a last resort when other methods of retrieval have been unsuccessful [5]. Through this case report, we aim to emphasize the importance of this method in removal of rounded objects and assert the importance of having them at an easy reach for a routinely practicing bronchoscopist in such tricky situations.

### Case Report

An 8 year old boy presented with history of aspirating a foreign body 2 days back for which he underwent emergency tracheostomy elsewhere in view of acute stridor and failed retrieval of foreign body by rigid bronchoscopy. Chest X ray PA view was done which revealed the presence of foreign body in the right bronchus. Refer figure 1 below depicting the Chest X ray PA view showing tracheostomy tube *in situ* with rounded opacity in right bronchus.



**Figure 1:** Chest X ray PA view showing tracheostomy tube *in situ* with rounded opacity in right bronchus.



**Figure 2:** Retrieved foreign body (plastic bead) with fogarty catheter.

He was thus planned for rigid bronchoscopy and foreign body retrieval under general anaesthesia. Size 4.0 mm ventilating rigid bronchoscope was introduced and a smooth round plastic bead was seen occluding the right main stem bronchus. The bead was snugly fitting the lumen with no space between it and the bronchial wall. Decision to remove the bead using No 3 French Fogarty balloon catheters was taken. Ours being a tertiary care hospital, these catheters were available with the urology department and we could borrow them without much of time lapse. The catheter was carefully inserted through the lumen of the bead and inflated beyond the bead. The catheter and the bronchoscope was removed together en-bloc as the bead was too large to pass through the bronchoscope with the bead held between the balloon and the bronchoscope safely. Check bronchoscopy revealed no further trauma to the trachea and bronchus. Refer figure 2 below for Retrieved foreign body (plastic bead) with fogarty catheter.

## Discussion

Retrieval of foreign bodies of the tracheobronchial tree by rigid bronchoscopy is a technically tough prospect in small children [2]. Various instruments are routinely available at the disposal of a bronchoscopist like serrated forceps, cup forceps, dormia baskets, foley's catheters [4]. However, spherical foreign bodies such as plastic beads pose a significant challenge to the bronchoscopist [5]. In these situations, Fogarty catheters have proven to be valuable ad-

juncts in removal of such foreign bodies. The presence of lumen in these beads allows passage of catheters with subsequent inflation of the balloon [6]. With the aid of fogarty catheters these objects can be removed safely and easily with minimum time consumption for the retrieval as the lung reserve is very small in young children. This catheter is additionally less traumatic to the bronchial mucosa [7,8]. These balloon tipped catheters have been in use since many years, however they are rarely present at an easy disposal to a bronchoscopist in case other methods fail. For a practicing bronchoscopist, these catheters should be available at hand's reach and be an important part of the armamentarium especially in the setting of removal of rounded objects

## Conclusion

We conclude that Fogarty balloon catheters are an important and suitable alternative for removal of spherical foreign bodies in the airway. They should be considered a valuable part of the armamentarium of a practicing bronchoscopist. We assert the importance of having a fogarty's catheter at an easy reach for a practicing bronchoscopist in such tricky situations.

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