Flowering Plant Matter in the Right Lower Lobe Bronchus of a 7-Month Old: A Unique Foreign Body

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Abstract

Objective: To discuss the management of a unique foreign body (FB) which evaded diagnosis by first-line care providers and required modification of commonly used instrumentation for successful removal. We also describe, using illustration, the unique interplay of the characteristics of this FB and normal bronchial dynamics which served to propel and impact the foreign body to the deepest extent of the infant’s airway and caused a rarely seen complication - a pneumatocele.

Method: Endoscopic removal of a 5cm long foxtail weed from a segmental bronchus at the right lower lobe. The cephalad end of the weed was barely visible at the entry of the segment and very nearly evaded endoscopic visualization. Since traditional instrumentation for retrieval was far too large to reach this distal area due to the patient’s small size, tiny optical cup forceps typically used for mucosal biopsy were used to remove the foxtail weed.

Result: Endoscopic retrieval of the FB was achieved safely and successfully. Due to the nature and position of the FB which ruptured the bronchus, the child experienced a pneumatocele followed by a prolonged stay in the PICU. He was successfully treated with decompensation using a pig tail catheter. Conclusion: This case demonstrates how the unique properties of a foreign body can create a challenging clinical management scenario. This situation required creative use of available instruments and multi-disciplinary care in the treatment of a rare complication of an aspirated FB.

Background

Foreign body ingestion or aspiration was responsible for 17,000 ED visits in 2000. More than 80% of aspirated FB in children occur in those younger than 3 years of age, most between the ages of 1-2 years. There is a male predominance, ranging from 1.5-2.4:1 (males:females). Treatment with endoscopic bronchoscopy and removal is successful in 95% of cases, with a reported <1% complication rate. Common complications include atelectasis, post-obstructive pneumonia and bronchiectasis.

Initial Presentation

DP is a 7 month old male who was brought to the emergency department after an overheard choking episode at home. The patient underwent clinical evaluation including chest radiograph (CXR), and was diagnosed with upper respiratory infection and discharged to home. The patient went on to develop fever and cough, which resulted in evaluation by his pediatrician two days later. He was diagnosed with pneumonia by CXR and antibiotics were started. The patient’s fever persisted and subsequent CXR worsened despite antibiotic therapy, thus he was returned to the ED for further evaluation.

Post Operative Course

The patient remained intubated and was transferred to the pediatric intensive care unit. He continued to have fevers and required ventilator support. Chest radiograph was initially concerning for pneumothorax. On POD #2, CXR was now concerning for pneumatocele, therefore CT scan was obtained.

It is believed that the weed was initially inhaled into the trachea and right mainstem bronchus. Its position was moved distally with each respiration such that it was lodged by the shape of the weed and the change in bronchus diameter with inspiration and expiration, as evidenced below.

Conclusions

Due to the nature of the foreign body along with dynamics of respiration, this child suffered an unusual and rare complication of airway foreign body. The dried foxtail weed acted as a rigid sharp instrument that punctured the bronchus allowing for development of the pneumatocele. Pneumatocele is distinct from pneumothorax:

- Pneumatocele: air and purulence is introduced in the intraparenchymal space due to bronchus rupture
- Pneumothorax: result of extraneous air in the pleural space

In addition to the nature of the foreign body, its location, deep in the right lower lobe bronchus, as demonstrated in figure 4 contributed to the complex nature of the case.

References