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Airway FB

Below the age of three foreign body (FB) aspiration or ingestion is one of the leading causes of accidental death. Most FB that lodge in the airway tree creates a ball-valve phenomenon in the affected bronchus that allows bidirectional but unequal flow of air. Air flows preferentially into the bronchus with inspiration and less is allowed to flow out during expiration resulting in significant air-trapping and hyperinflation of the affected lobe or lung. The mediastinum shifts to the opposite site of the FB. Alternatively, with a total blockage of the bronchus there is loss of volume with atelectasis and shift of the mediastinum to the same side. Diagnosis relies on clinical judgment, history, physical exam and radiographic evaluation. The child present with an aspiration event followed by coughing, wheezing, dyspnea, fever, wheezing or decrease breath sounds over the affected hemithorax. After chest films confirmation management consists of rigid bronchoscopy for extraction of the FB. With history of choking crisis and mild symptoms bronchoscopy should also be done. Peanuts, corns, beans and seeds are the most common offending agents causing further damage by virtue of an associated inflammatory reaction. A forceps during bronchoscopy will help extracted most FB. Other times a fogarty retraction is needed in case of segmental bronchus position. Longstanding foreign body in the airway may be responsible for irreversible complications (bronchiectasia).

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Pulmonary Sequestration

Pulmonary sequestrations refer to masses of abnormal lung parenchyma with anomalous systemic blood supply not communicating with the normal tracheobronchial tree. The abnormal lung parenchyma may be Intralobar (IS) or Extralobar Sequestration (ES). Intralobar is contained within the visceral pleural of a lower lobe receiving the blood supply from the abdominal aorta or other thoracic vessel. It is believed IS are acquired postinfectious process due to their association with chronic recurrent lung infection and

reactive airway disease. ES is a congenital malformation with variable ectopic blood supply (aorta) having its own pleural investment separate from normal lung, containing typical features of CCAM-2 (40%) and associated malformations (40%). Both types can have patent communication with foregut. Prenatal diagnosis can be obtained with real-time US with Doppler imaging (can cause fetal lung compression, mediastinal shifts and hydrops). Postnatally, contrast-enhanced CT may establish the diagnosis eliminating the need for more invasive imaging (arteriography). Most presents in early infancy with a soft tissue opacity in the posterior basal segments of the lung on simple chest films. Management consists of resection to alleviate symptoms and avoid complications. ES can be managed with resection alone, while IS needs lobectomy. Anecdotal cases of partial or total disappearance of these masses while asymptomatic has been reported.

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Pectus Carinatum

Pectus carinatum (pigeon breast, keel chest) is an infrequent chest wall deformity. Rarely produce cardio-respiratory derangements as the thoracic cavity enlarges symmetrically with the defect. The child (most commonly a boy in his early teens) will be brought by the parents because of cosmetic and psychologic concerns. Satisfactory subjective long-term results of most patients justify surgical correction. Repair is performed through a transverse or submammary incision with subperiosteal resection of the lower costal cartilages from sternum to costochondral junction bilaterally. The sternum is fractured to straighten it and there no need for sternal strut use in this deformity. Complications can include seroma, atelectasis and pneumothorax. In a well-motivated, skeletally immature individual body cast bracing can be an effective treatment for cosmetically displeasing pectus carinatum.

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* Edited by: **Humberto L. Lugo-Vicente, MD, FACS, FAAP**

Associate Professor/Administrative Director of Pediatric Surgery, University of Puerto Rico School of Medicine and University Pediatric Hospital, Rio Piedras, Puerto Rico.
Address - P.O. Box 10426, Caparra Heights Station, San Juan, Puerto Rico 00922-0426.
Tel (787)-786-3495 Fax (787)-720-6103 E-mail: *titolugo@coqui.net*
Internet: http://home.coqui.net/titolugo
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