Abstract:
Foreign body aspiration into the bronchus is not an uncommon event in the general population. It is more common in children than in adults. The patients vary in their presentation but they typically present as a medical emergency. Occasionally the event might go unnoticed leading to later complications. Herewith we report a case of an incidentally detected left sided endobronchial foreign body in an adult trauma victim which masqueraded as a post traumatic hemothorax.

Keyword: Bronchus, bronchoscopy, chest, computed tomography, foreign body
INTRODUCTION:
Foreign body entrapment in the airway is an emergency situation presenting more commonly in children after an accidental aspiration. Accidental aspiration occurs more often into the right main bronchus. A positive history of aspiration is usually complimented with the classical triad of cough, unilateral wheeze and decreased breath sounds on the affected side. The symptoms of cough and wheeze are similar in tracheal and bronchial foreign body aspiration. However, tracheal foreign bodies cause more dyspnoea and bronchial ones present with absent breath sounds more frequently. A long standing endobronchial foreign body presents with complications secondary to chronic luminal obstruction and the superadded infection. Rarely, the foreign body may be discovered as an incidental finding in a patient presenting with an unrelated illness.

CASE REPORT:
A 32 year old non alcoholic gentleman presented to the emergency department after sustaining blunt injury to the chest and abdomen when a heavy wooden log fell on him. Clinical examination revealed a conscious and well oriented patient with tachycardia, tachypnoea and reduced oxygen saturation on room air. There was decreased air entry over the left hemithorax with fine basal crackles on auscultation. He also had multiple pelvic bone fractures with no intra abdominal organ injury. Investigations for fat embolism were equivocal.

A chest roentgenogram revealed haziness of the entire left lung field with tracheal shift to the opposite side (FIGURE 1A &1B). A left intercostal drain (ICD) was inserted suspecting a haemothorax, but it drained around 700 ml of serous fluid only. A computed tomographic scan (CT) of the chest revealed complete collapse of the left lung with narrowing of the left main bronchus which was attributed to a possible bronchial injury (FIGURE 2). The oxygen saturation was low and the patient required intubation and ventilation. A bedside bronchoscopy revealed a mass in the proximal left main bronchus almost completely occluding the lumen with areas of necrosis in the bronchial wall. Attempts to core out the lesion revealed a plastic foreign body embedded in the mucosa of the proximal left main bronchus (FIGURE 3). The foreign body was successfully retrieved. Biopsy of the tissues surrounding the foreign body revealed squamous metaplasia with chronic inflammation, suggestive of a long standing foreign body impaction. Upon direct questioning, the patient gave a history of chronic intermittent cough since the past 2 years with no known history of a foreign body aspiration.

DISCUSSION:
Tracheobronchial foreign bodies can be life threatening if not managed expeditiously. They are seen to occur in both adults and children, more in the latter due to obvious reasons. Children of age around 1 to 3 years, have an inherent oral curiosity for things. This fact complemented by other factors, like not having molars to grind their food, eating while running around and a lack of co ordination between swallowing and glottic closure predispose to easier foreign body aspiration in this age group. Organic materials are more commonly aspirated.
In adults, neurological dysfunction, trauma, alcohol abuse or psychological disorders may lead to aspiration. Presentation may be immediate with uncontrolled coughing, wheezing or stridor. This initial symptomatic phase, if tided over without further medical consultation, may be followed by an asymptomatic phase when the foreign body settles in one of the bronchi. If still not discovered, it may be followed by a phase of complications weeks later.

Development of pleural effusion, pulmonary fibrosis and granuloma has been described after ingestion of nanoparticles also.\(^2\) Most organic foreign bodies, being radiolucent, do not show up in chest films. Radio opaque foreign bodies may be seen in less than 21% of the cases only.\(^3\) Air trapping may be seen initially caused by the ball valve mechanism of the obstructing lesion. As it gets wedged further a stop valve mechanism develops which leads to atelectasis. Foreign bodies with patent lumen, like a whistle, might not be symptomatic for many years since they allow ventilation and airway clearance till the lumen gets occluded due to inflammatory granulation tissue with or without superadded infection.

Multidetector CT scanning has been shown to have a sensitivity varying from 88% to 100%.\(^4\) Conventional bronchoscopy may not be indicated when CT scan and virtual bronchoscopy show no obstructive pathology.\(^5\) Bronchoscopy is mandatory in confirming the diagnosis and for the retrieval of such objects. Flexible and rigid bronoscopes may both be used. The use of flexible scopes, without their ability to ventilate are not advised in children because of their narrower trachea and glottis.\(^6\) In the adults, flexible scope can be done under topical anaesthesia, whereas a rigid scope often requires general anaesthesia.

Endoscopic graspers, baskets or Fogarty balloon catheters may be used to remove small foreign bodies with a flexible bronchoscope. However, larger objects can be taken out along with the scope and the endotracheal tube, followed by quick reintubation.

Our patient with a history of trauma was diagnosed to have a haemothorax with a passive lung collapse. When the ICD was inserted and serous fluid drained, the lung did not expand, making us suspect a different unrelated pathology. CT scan suggested an interruption of the left main bronchus and a bronchoscopy finally revealed a foreign body in the left main bronchus which was not visible in a CT scan of the thorax. The presence of multiple pelvic fractures may have caused a subclinical fat embolism adding on to the patients respiratory symptoms.

Bedside flexible bronchoscopy is indispensable in the diagnosis and treatment of airway foreign bodies. It is also helpful to have a rigid bronchoscope at hand in case of emergencies. Foreign bodies in the lung have been retrieved after decades, and a review of literature revealed a case wherein the object was removed after 39 years.\(^7\) In our case the history of foreign body aspiration was not obtained. The initial findings proved misleading like a red herring, obscuring the underlying intrabronchial lesion and masquerading as a traumatic haemothorax. The radio-lucency of the foreign body also complicated matters further causing a delay in the diagnosis.

CONCLUSION:

The myriad presenting features of an endobronchial foreign body may lead to perplexing clinical scenarios. A high index of suspicion will be necessary to arrive at the appropriate diagnosis.
if and when the findings don’t fit in. The use of computerised tomography and expedient bronchoscopy will lead to the correct oncologic diagnosis and appropriate timely intervention.

REFERENCES


FIGURE LEGENDS:

Figure 1A and 1B: Chest roentgenogram showing a left sided pleural collection in a trauma victim (Figure 1A) with persistent collapse of the lung even after an intercostal tube drainage (Figure 1B).

Figure 2: Computerised tomographic image of the thorax showing a collapsed left lung and narrowed left main bronchus (arrow).

Figure 3: Flexible bronchoscopic image of the foreign body (arrow) in the left main bronchus.