

CASE REPORTS

A RARE CASE OF AIRWAY FOREIGN BODY (CEMENT & SAND)

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INTRODUCTION

An object is considered a "foreign body" (FB) if the object is in a location in the body where it is not normally found. Common foreign bodies found in children include coins, small toys, foods (like peas, beans, nuts, or even candy), and, other small objects like beads or pills, dislodged teeth, even bugs, may be found. Probably the most concerning object is a button type battery (like camera and watch batteries), as these can leak harmful substances [1-3]. Foreign body occurrence is a commonest cause of accidental home death in the children under 6 years of age in USA [4]. Children are in a habit of putting every thing in their mouth to detect the taste and texture especially around teething age. Depending on the size, shape and type of FBs, they can impact in the larynx, trachea or more distally to bronchi. Children may experience symptoms differently; some children can even have vague symptoms that do not immediately suggest ingestion. The clinical presentation varies from acute severe respiratory syndrome to clinically no obvious signs. Usually the laryngeal and tracheal FBs are fatal and produce signs and symptoms of severe choking. While the more distal FBs usually present with more variable forms, starting from acute severe respiratory distress to minor wheeze. They may present in the form of persistent or recurrent pneumonia. Others may lie silent and are diagnosed accidentally on diagnostic bronchoscopy. Long standing FBs especially of organic in origin may present with haemoptysis. Parents should suspect their child might have swallowed a foreign object if breathing or swallowing

difficulties persist longer than two weeks despite medical treatment. For example, continuing asthma or upper respiratory treatment without seeing improvement [1-4]. Radiological findings vary from absolutely normal X-ray chest to emphysema, collapse of lung to opaque FBs [5]. The management of the FB varies depending upon the severity of the symptoms, site of impaction & type of the FBs. Tracheal & laryngeal FBs usually present in emergency conservative measures like Heimlich's may be tried but one should not persist with this method after the 4th try. The gold standard principal of FBs management is bronchoscopic removal. Even the most experienced endoscopists would agree that the prospect of having to deal with a very young child with a history of possible inhalation of FB fills them with some trepidation- not only because of the demands that the removal of a FB makes on their skill as an endoscopist, but also because of the unpredictability in the degree of difficulty in the nature of the procedure [6-7].

CASE REPORT

An eighteen months old girl was brought in the emergency room of the PAF hospital Mushaf in respiratory distress for the last two days. The child was playing in the courtyard of the home with her mother when she suddenly developed severe respiratory problem there was no history of eating or swallowing any item. She was pale, fatigued and in a state of obvious respiratory distress, there was tracheal tug, recession of the intercostal margin and spaces on the right side, while the left side of the chest was not moving with respiration and no breath sounds were audible on the left side. Her X-ray chest revealed that the left lung was

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completely collapsed with mediastinal shift. There was a doubtful; radio opaque shadow in the left main bronchus (fig.1). Bronchoscopy was done under general anesthesia by apneic technique. The child was maintaining his oxygen saturation at 85 to 90% even with 100% oxygen ventilation. Induction was done with Propofol 2mg per kilogram body weight. She was maintained with Halothane 1-2 % in 100% oxygen. The patient was kept relaxed with Atracarium 0.25mg/kg under monitoring of oxygen saturation with pulse oximeter. When ever child's saturation started falling down below 70%, the bronchoscopy was stopped and oxygen saturation was maintained at maximum level with positive pressure ventilation through mask before again restarting the procedure. Negus type of bronchoscope, size 25 cm length with 4.5 mm diameter at the front end was used. There was whitish to green discharge filling the left main bronchus. On aspiration there were cement and gravel particles filling the main lumen of the left main bronchus. The main pieces of cement particle were removed with chevalier Jackson forceps while the remaining sand was removed by applying strong suction through small pediatric nasogastric tube. The child started maintaining oxygen saturation at 100 % with assisted ventilation. His X- ray chest was done on the next day which showed fully aerated lungs bilaterally (fig.2). She was discharged symptoms free on the next day with a short course of antibiotics. Patient was followed in the OPD for 8 months with clinical examination and X-ray chest. There is no abnormality detected.

DISCUSSION

The rare FBs which has been described in the literature are marble impaction in the nasopharynx, laryngeal obstruction by the heroine packets, meat boluses ,& gums, gelatin candies, teeth & teething materials [8-10]. Other unusual presentation of the FBs is pneumothorax, mediastinal & subcutaneous emphysema and pneumoperitoneum [11]. X-



Fig.1: Preoperative X-ray chest, showing totally collapsed left lung.



Fig.2: Post operative X-ray chest, showing fully aerated left lung.

ray chest in these cases will not only show the FB but also help in the diagnoses of these complications. Problems are usually encountered when the FB is subglottic, located at carina or is bilateral (nut on the one side and shell in the other or bilateral FBs) or more than one FB are located at a little distance in the same airway. Patients who are very sick, tachypenic, asphyxiated and who are unable to maintain oxygenation pose

special problem at bronchoscopy. These cases need special back up in the form of well equipped intensive care units [6-7]. The cement & sand type of FB has not been reported earlier, to the best of our knowledge. This is the 1st case report of its kind. There was no definite history of ingestion or inhalation of FB in our case. Clinical presentation and X-ray findings led us to think of FB airway, which on bronchoscopic examination turned out to be sand and cement particles. The larger pieces of the cement & sand were manageable with the grasping forceps. But for the sand dust we used method of bronchial toilet. This method is classically used in the intensive care units to remove thick inspissated secretions from bronchial airway [12]. We applied suction through a small pediatric nasogastric tube. After this the same tube was placed more distal to the place of FB and bronchial toilet was done with 5ml of normal saline and the remaining sand dust was removed into suction bottle. The sucker was turned on before injecting the normal saline in order to prevent distal dissemination. This procedure was repeated thrice.

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