

## Migratory Foreign Body in Bronchus of an Adult

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### ABSTRACT

Foreign body inhalation is a clinical emergency requiring prompt action to ensure speedy recovery and minimize the complications. This is common in children rather than in adults. We hereby report a case of a foreign body bullet which remained in the bronchus of an adult and migrated from right main bronchus to left main bronchus due to posture. The diagnosis was made and appropriate treatment was given.

**Key words:** Bronchial, foreign body, bronchoscopy

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### INTRODUCTION

Foreign bodies in the air passages are a challenging clinical problem. In spite of recent advances in anesthesia and instrumentation, removal of a foreign body is not an easy procedure and demands skill and expertise on the part of the surgeon. Grave complications like cardio respiratory arrest may ensue unless prompt treatment is given. We would like to present our experience of such a case with a migratory bullet in the bronchus of an adult.

Inhalation of foreign bodies is seen more commonly in paediatric age group and nearly 94% of them occur in infant and children. The highest incidence occurs between the age of 1-3 years that is 77% and it is rare in adults<sup>1</sup>. The major issues involve the timely and accurate diagnosis for speedy and safe removal of foreign bodies. The accurate diagnosis may be missed even by experienced clinician because often the initial choking episode is not witnessed and also the delayed symptoms may mimic other common conditions like asthma, recurrent pneumonia, upper respiratory infection and persistent cough. Foreign body aspiration is a condition with a wide spectrum of clinical presentation, patients often present in the emergency with acute onset respiratory distress and occasionally in a cyanosed state. At the other end of the spectrum is the patient who walks in with nothing more than a history of aspiration and on investigation is found to have a foreign body in his bronchus. The symptoms and signs produced depend upon the nature, size, location and time since lodgment of the foreign body in the tracheobronchial tree. A large foreign body occluding the upper airway may lead to sudden death whereas a small foreign body lodged in the bronchial tree may present with less severe symptoms. Early diagnosis and treatment are imperative to prevent mortality as well as complications.

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### CASE REPORT

An 18 year old young male motorcycle mechanic by profession came to casualty department with a history of foreign body inhalation 04 days back. He was cleaning his gun and keeps that bullet in mouth just for nothing. Suddenly somebody called him from back he turned his neck to see at the back, he get choking and accidentally inhaled that bullet. He developed complaints of difficulty in breathing and cough soon after that. He consulted to local doctor for his complaint but after getting symptomatic treatment he did not relieved of pain and discomfort. He came in emergency with complaints of shortness of breath, cough and chest tightness. Immediate emergency treatment was given; oxygen at 2 liters started, intravenous steroids and nabilization was given. As patient become stable, as shown in figure: 1 he shifted to male ENT ward. After re-evaluation there was decreased air entry and decreased chest movements on the right side of the chest on close inspection as comparing with left side of chest on deep breathing. Rest of examination was unremarkable. Hematological was reported to be normal. X-rays chest was done in emergency department as shown in figure:2 the presence of foreign body bullet in right main bronchus.



Figure 1: (Patient stable soon stable after emergency treatment)



Fig.2. X-ray chest (P.A view) (Showing foreign body in right bronchus.)

Patient remained in the ward and rigid bronchoscopy was planned on the next operating day. As patient becomes improved of symptoms he left the ward without medical advice. After four days he came back with the complained of pain and chest tightness on the left side, pt re admitted and on reevaluation on the basis of history his chest auscultation was done and there was decreased breath sounds and decreased air entry and wheezing on left side of chest with no respiratory distress. On this strong clinical suspicion X-rays chest PA view was advised which shows migration of bullet in the left main bronchus as shown in figure: 3

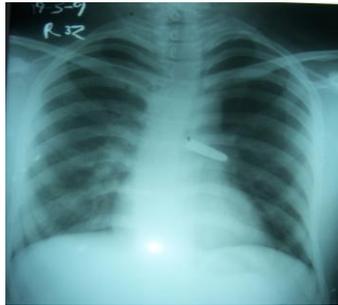


Figure: 3. (X-ray chest PA view, showing bullet moves on left main bronchus.)

**Surgical Procedure:** Rigid Bronchoscopy performed under General Anesthesia. Bronchoscope introduced through the laryngeal inlet, visualizing the trachea and both the right and left main bronchi. There was thick mucopurulent discharge in trachea and both main bronchi and after suction clearance of discharge. There was a metallic foreign body (bullet) seen in left main bronchus which was removed with the help of foreign body grasping forceps, as shown in figure:4. There was no granulation or mucosal trauma in laryngotracheobronchial tree. Air entry in all zones of both lungs was equal after removal of the foreign body. Antibiotics and intravenous steroids were given for three days and patient recovers smoothly.



Figure: 4 Removed bullet after rigid Bronchoscopy

## DISCUSSION

Foreign body aspiration is an accident with the highest incidence, morbidity and mortality in childhood. Children especially between one and three years of age appear to be more vulnerable to accidental aspiration<sup>2,3</sup>. This age group is particularly vulnerable because it lacks adequate dentition and has immature swallowing coordination<sup>4</sup>. Additionally these children explore their world by introducing objects into their mouth. It is rare to have an adult with foreign body in bronchus as in our case. An infinite variety of foreign bodies may be inhaled and may present a different diagnostic problem. The severity of the signs and symptoms depend on the site, size, composition and the period for which the foreign body has been lodged. Diagnosis and removal of an inhaled foreign body are required as quickly as possible in order to prevent respiratory sequelae<sup>5</sup>. The rapid fatigue of the cough reflex after the acute choking episode due to adaptation of the surface sensory receptors is followed by an asymptomatic phase that tends to create a false sense of security, parental negligence, misdiagnosis, lack of suspicions or even undue procrastination on the part of fellow professionals contributes significantly to the delay in reaching the hospital. Inhaled foreign bodies are mostly bronchial and right site is more commonly involved as compared to the left in adult. The foreign bodies encountered in the airway are commonly organic (67%) compared to inorganic (33%)<sup>6</sup>. Organic foreign bodies in the airway are much more serious as compared to metallic foreign bodies due to the severe lipid reaction caused by them which can result in chemical bronchitis, with fever and chest infections. Amongst inorganic foreign bodies those with sharp edges cause more symptoms as compared to those with smooth surface. Diagnostic imaging plays a variable role in identifying airways foreign bodies. Most of the foreign bodies are not radio opaque and small foreign bodies may cause symptoms but no radiographic signs. Plain films may be inadequate to document a

non radio opaque foreign body unless they are obtained in the expiratory phase. On expiration, air trapping, obstructive emphysema and mediastinal shift may be demonstrated as evidence of foreign body. Cohen has strongly advocated that all patients presenting with positive history of foreign body inhalation, even when the physical finding and radiological examinations is negative must be subjected to endoscopic evaluation<sup>7</sup>. The ventilating rigid bronchoscope remains the gold standard for the safe removal of tracheo-bronchial foreign bodies under general anesthesia. Proper communication between the surgeon and anaesthesiologist is a must; the credit of first bronchoscopic removal of a foreign body from the bronchial tree goes to Gustav Killian (Father of Bronchoscopy) in 1897. The familiarity and experienced of the surgeon with wide variety of available foreign body extraction forceps and selection of age appropriate equipment facilitates safe removal with decreases post-instrumentation edema. In the case of retained foreign bodies, the possibilities of granulation tissue and post-obstruction infection exist. Removal may be hampered by poor visualization associated with swelling, secretions, granulations and bleeding. These added challenges further reinforce the need for earlier interventions.

### CONCLUSION

Tracheo-bronchial foreign bodies constitute a serious and potentially fatal situation. The diagnostic triad of

a bronchial foreign body is cough, wheezing and decreased breath sounds on the affected side. This unusual case suggests a need to create an awareness regarding this potentially avoidable situation at the level of the family physicians and general practitioners. They need to do their part by referring all patients with positive history of foreign bodies inhalation to higher centers for the required endoscopic examinations.

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