Delayed Presentation of Foreign Body Aspiration in An Adult Requiring Lobectomy

Abstract

Foreign body (FB) aspiration in adults is usually associated with predisposing risk factors like old age, alcohol and/or sedative abuse, obtunded neurological status, psychiatric illness or poor dentition. Generally, the manifestations of the symptoms of FB aspiration are immediate. We present a case of unsuspected FB aspiration in an adult female with no predisposing factors who presented with recurrent pnuemonitis after 6 years of aspiration. Failure to remove the embedded foreign body endoscopically on multiple attempts necessitated lobectomy under balanced general anesthesia technique

Keywords: Aspiration; Lobectomy; Foreign body

Case Report

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Introduction

Aspiration of foreign body (FB) in adults is not uncommon, though the incidence in paediatric age group is higher [1-4]. Its presentation mimics respiratory tract pathologies like bronchitis, bronchiolitis, pnuemonitis [4,5]. Delay in diagnosis and treatment is associated with serious and sometimes fatal complications [6]. A case of delayed presentation of a FB aspirated in an adult patient in whom failed endoscopic removal necessitated lobectomy is reported.

Case Report

A 38-year old 65 kg female presented with history of fever and cough off and on for the past one and half year with gradually progressing dyspnoea over last 5 months. She was given antibiotics and a course of antitubercular treatment (ATT) as empirical therapy without any benefit. On investigation, the chest X-ray revealed a metallic FB with streak artefacts in the region of right upper lobe bronchus with atelectatic changes in anterior and apical segments of right upper lobe (Figure 1 & 2). On intense questioning, she recalled history of waking up one night six years back with mild cough and severe pricking sensation in throat. The symptoms had subsided a bit after taking water and she went back to sleep thereafter. Next morning, she discovered that her nose pin was missing.

Fibreoptic bronchoscopy under conscious sedation confirmed the presence of a metallic foreign body at the opening of right upper lobe bronchus but the pulmonologist was unable to retrieve it despite multiple attempts. She was thereafter referred to our hospital for surgical removal. After an informed consent and adequate fasting, she was premedicated with morphine 10 mg and promethazine 25 mg intramuscularly 1 hour prior to surgery. In the operating room, a large bore venous access and radial artery cannulation were performed under local anaesthetic infiltration. Anaesthesia was induced with thiopentone (150 mg) and fentanyl (150 µg).

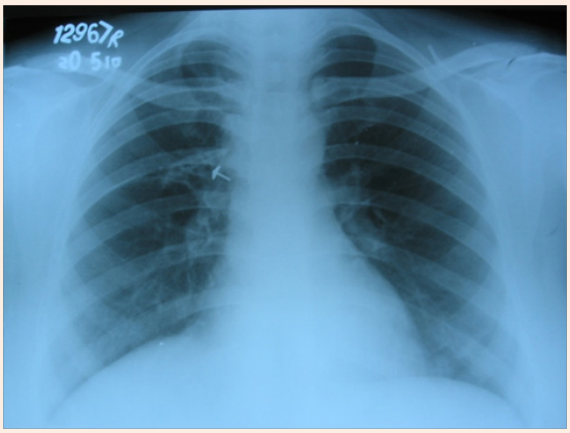

Figure 1: Chest X-ray PA view showing the foreign body.

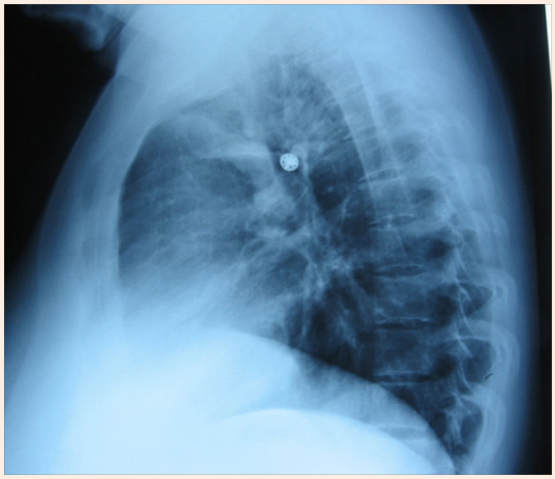

Figure 2: Chest X-ray lateral view showing the foreign body with atelectatic changes in the right upper lobe.

Pancuronium 8 mg was given for neuromuscular blockade and a 35 FG, left sided double lumen tube (DLT), (Bronco-Cath; Mallinckrodt Medical, Ireland) was inserted. Correct positioning was assessed on auscultation and was confirmed with fibreoptic bronchoscopy. Anaesthesia was maintained with oxygen, nitrous oxide (40:60) and isoflurane and top-up of fentanyl and midazolam. Heart rate, electrocardiography, invasive blood pressure, central venous pressure, $EtCO_2$, SpO_2, temperature, urine output, arterial blood gases and peak airway pressure were monitored. Right upper lobectomy was performed during which approximately 100 ml blood was lost. She was given 2500 ml of crystalloid solution and haemodynamics remained stable throughout the procedure. At the end of surgery, 0.25% bupivacaine was infiltrated along the incision for postoperative pain relief. Neuromuscular blockade was reversed with 3.5 mg neostigmine and 0.6 mg glycopyrrolate and trachea was extubated. She had an uneventful recovery and was discharged on the 10th postoperative day from the hospital (Figure 3 & 4).

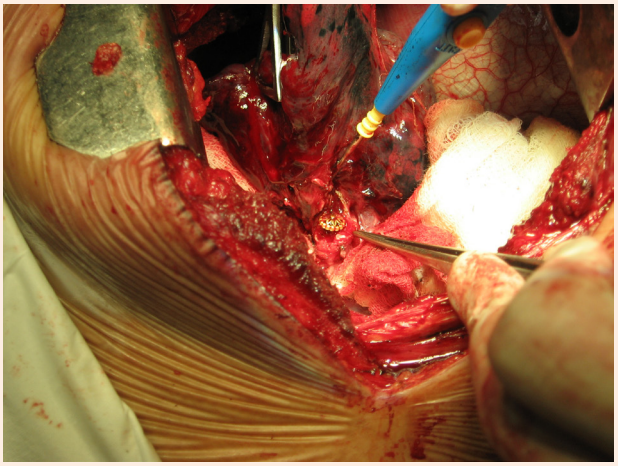

Figure 3: Nose pin visible in surgical field.

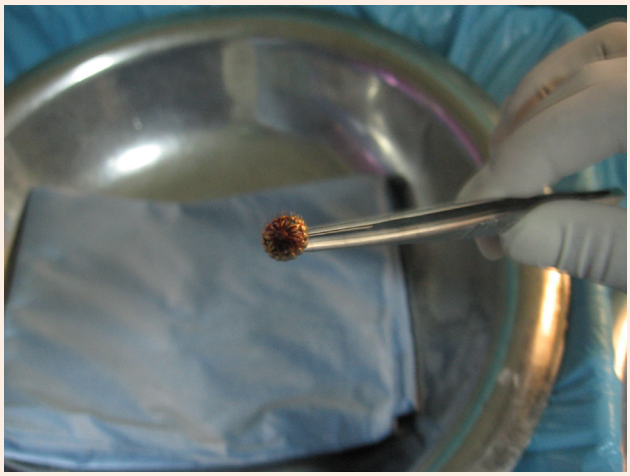

Figure 4: Nose pin after surgical extraction.

Discussion

FB aspiration is most common in children below 3 years of age [1-4]. However, it can occur in the elderly with obtunded neurologic status due to cerebrovascular accident, dementia, myasthenia gravis, poliomyelitis, etc [7-9]. Other factors which may be associated are alcohol consumption, sedative abuse, poor dentition and psychiatric illness [7,10]. A variety of foreign bodies are reported in adults including bones, seeds, nuts, broken teeth, dentures, plastic feed of a pen, knife and turban pin [7,10-14]. Generally, the patients can recall the event or at least remember the violent bout of coughing occurring at the time of aspiration [10,12]. In the present case, however, there was neither an obvious predisposing risk factor nor was there a history strongly suggestive of aspiration. Also, the aspiration of a nose pin is very unusual and the patient remained asymptomatic for an unusually long period before she presented with pneumonitis. All these factors could have led to a lack of suspicion of FB aspiration. This is reflected in missing the evidence of FB inadvertently on chest x-ray where she had presented earlier.

Foreign bodies with serrated margins can get embedded in lung tissue and pose difficulty in endoscopic removal necessitating surgical removal. The delay in diagnosis may have contributed to the failure of removal in the present case. The incidence of hypoxemia during one lung ventilation with 100% oxygen can be as low as 1% [15]. This is attributed to the use of balanced anaesthesia with low dose inhalational agents and routine use of fibreoptic bronchoscopy to position DLT [15]. In the present case, balanced anaesthesia technique with low dose isoflurane was employed as isoflurane is less inhibitory for hypoxic pulmonary vasoconstriction than halothane [15,16]. What makes the present case unusual is the delayed presentation after aspiration of a large foreign body.

Conclusion

This case highlights the fact that FB aspiration can occur in adults without any predisposing risk factors and healthy adults may tolerate the aspiration for a long time without serious complications. Aspiration of FB like nose pin should be suspected in females in Indian culture where these are worn as a tradition. Radiological investigation should be carefully done in cases with recurring chest infection. Surgical removal with one lung ventilation using balanced anaesthesia is safe in patients when endoscopic removal is unsuccessful.

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