

Case Report

SURGICAL BLADE: AN UNUSUAL INTRAPLEURAL FOREIGN BODY

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ABSTRACT

Foreign bodies (FBs) in the pleura and chest wall have been rarely reported in the literature. They are reported as case reports, and so a definitive treatment plan for this entity is not readily available. Here we are reporting a case of a surgical blade in left pleural cavity, dropped accidentally during intercostal chest tube insertion for left pneumothorax. A rigid esophagoscope was used in this case for successful removal of the surgical blade. This is the first case report of surgical blade in pleural cavity. In addition rigid esophagoscope was used for the first time as 'thoracoscope' for removal of the surgical blade.

Key Words: Foreign body (Pleural Cavity), Thoracoscopy / VATS, Thoracic Trauma, Trauma (Blunt/ Penetrating)

INTRODUCTION

Foreign bodies (FBs) in the pleura and chest wall have been rarely reported in the literature. Iatrogenic foreign body (FB) in the pleural cavity is a known complication. Here we are reporting a case, in which surgical blade was dropped accidentally in the pleural cavity during inter costal chest tube insertion. This blade was successfully removed from pleural cavity using a rigid esophagoscope. To the best of our knowledge this is the first case report of surgical blade inside the pleural cavity and use of esophagoscope for its removal.

CASE REPORT

A 27 years old male patient was admitted in Pulmonary Medicine Department of Chatrapati Shahuji Maharaj Medical University, Lucknow with the complaints of dyspnea since last 7 days. On admission, the patient was conscious, hemodynamically stable without any respiratory distress. Clinical examination of the chest revealed decreased air entry on the left side of chest. He had a oxygen saturation of 94% on room air and chest x-ray revealed a left sided pneumothorax. A left inter costal chest tube insertion was planned, under local anaesthesia. A chest tube was inserted on the left side of chest in 5th inter costal space in anterior axillary line. The procedure went well and patient was shifted to ward. Oxygen saturation of patient improved to 98% on room air. Air entry on both side of his chest was normal and equal on auscultation. On the following day, his intercostal chest drain accidentally came out in the ward. A repeat chest x-ray showed an expanded lung. In addition, it showed a surgical blade in the left side of the chest in left costophrenic angle (**Figure 1**). This blade was probably slipped into the left pleural cavity during inter costal chest tube insertion. The patient was referred to cardiothoracic and vascular surgery department for further management.

After proper evaluation and investigation, patient was posted for video assisted thoracoscopic removal of the surgical blade under general anaesthesia with single lung ventilation. In the operation theatre it was decided to put a rigid oesophagoscope, instead of video assisted thoracoscope, through the same chest tube drainage site for the removal of the surgical blade, thus avoiding making 2-3 additional holes for video assisted thoracoscope. With this plan a 12 x 16 rigid esophagoscope (Karl Storz GmbH & Co, Tuttlingen, Germany) was put through the same intercostal chest tube incision site. Surgical blade was located nicely and it was removed after holding with the grasper (**Figure 2**).

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A 28 French chest drain was then placed through the same incision and the patient was shifted to the ward. Chest tube was removed on the 1st postoperative day after proper evaluation and patient was discharged from the hospital on the same evening.



Figure 1: Chest x-ray PA view showing surgical blade in left chest

DISCUSSION

Numerous articles and case reports are available regarding presence of FBs in the tracheo bronchial tree, gastrointestinal tract, peritoneal cavity and at other locations, but FBs in the pleural cavity have rarely been reported in the literature. They are mainly reported as case reports, so there is no consensus about its presentation or management (Weissberg, 2008). Review of literature showed different types of FBs in the pleura like catheter tip, glass , bullet, knife, gauze piece , washer, oat head , zinc oxide ointment mass , metallic foreign body etc (Weissberg 2008, Abid 2003, Marsico 2008, Lang-Lazdunski 1997, Bartek 1997 , Paddle 2010, Dilege 1997). To the best of our knowledge presence of a surgical blade in pleura has not been reported so far.

A FB in pleural cavity are usually iatrogenic and traumatic which may be intentional and accidental (Weissberg, 2008). Duration of presentation or intervention varied between hours to years. Empyema is the most common presentation, although incidental finding during routine chest x-rays had been reported. FBs in the pleura should be removed whenever possible.

Massard and colleagues (1997) recommended removal of FBs to prevent its migration and possibility of infection. This is particularly applicable to FBs in the close proximity to major vessels, heart, or esophagus. Removal is necessary in cases of non-metallic FBs, as well as in cases of large metallic

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objects or objects with sharp edges. Small, blunt and peripherally located FBs may be left behind, if difficulty at extraction are anticipated (Weissberg 2008, Marsico 2008).



Figure 2: Removal of surgical blade from left chest using esophagoscope (Karl Storz GmbH & Co, Tuttlingen, Germany)

Different approaches have been used for removal of FBs like pleuroscopy , video assisted thoracoscopy , flexible endoscopy, mini thoracotomy or thoracotomy (Weissberg 2008, Marsico 2008, Lang-Lazdunski 1997, Bartek 1997).

Presence of surgical blade in pleural cavity is an indication for its removal due to the possibility of repeated injury to lung and major vessels, leading to pneumothorax / bleeding. As reported in this case report, we used esophagoscope for removal of surgical blade from the pleural cavity.

In conclusion, video assisted thoracoscopic removal of FBs is a safe and established procedure, although it needs an expensive equipment and expertise. Rigid esophagoscope is a relatively cheap, time tested equipment in the armamentarium of cardiothoracic surgeons. Its use can be extended for removal of FB from the pleura.

This case report also highlights the importance of instrument count and inspection during any of the procedure, and all the staff member of the team should follow the protocol of the procedure strictly. It is important to notify the accidents, rather hiding it to prevent major catastrophe.

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