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Case Report

Chemical Pneumonia Following Accidental Iron Pill Inhalation

Manoj Singh*, Priyank Pradipbhai Patel, Jay Narendrabhai Kothari and Maharshi Bipinchandra Desai

Department of Pulmonary and Critical Care Medicine, Apollo Hospital Ahmedabad, India

***Corresponding Author:** Manoj Singh, Department of Pulmonary and Critical Care Medicine, Apollo Hospital Ahmedabad, India.

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Abstract

A 57 years old lady admitted with alleged history of accidental aspiration of iron tablet 2 days back, presented with complaints of right side severe chest pain, difficulty in breathing and excessive coughing. She received the Iron tablet as a part of routine health checkup workup suggestive of anemia. Patient was primarily managed outside on OPD basis. On the first consultation, the Chest X-ray was not reported to have a foreign body in the lung and she was given symptomatic treatment by General Practitioner (Figure 1). Subsequently she had dramatic worsening of her sign and symptoms the next day. Chest X ray repeated was suggestive of complete collapse of right lower lobe (Figure 2). Due to worsening respiratory distress, patient came to Apollo hospital, Ahmedabad for further management.

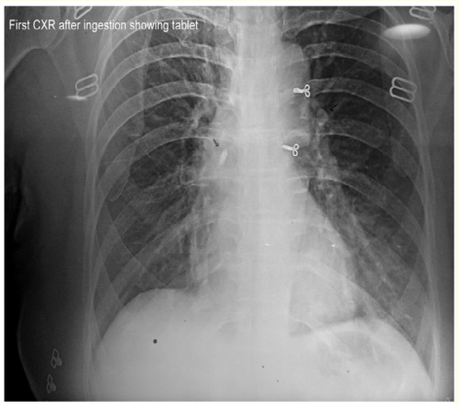

Figure 1: *First chest x-ray showing foreign body (iron pill) in right lung.*

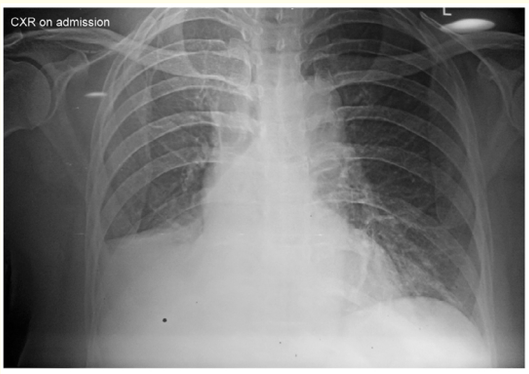

Figure 2: *Chest X-ray on presentation showing complete collapse of right lower lobe.*

Keywords: *Iron Pill Aspiration; Chemical Pneumonitis; Early Bronchoscopic Intervention*

Introduction

Aspiration of tablets in adult tracheobronchial tree is uncommon and less commonly reported. Symptoms may be mimicking to any disorder leading to chronic cough and wheeze. The event may be so sudden or during intoxication of other substance that it may go unrecognized. We represent a case of iron pill ingestion causing respiratory distress, airway damage and subsequent aggressive pulmonary care leading to favorable outcome.

Case Report

She was in respiratory distress and needed immediate stabilization with oxygen, propped up position and nebulization along with hydration. Urgent fiberoptic bronchoscopy was performed which was showing Severe chemical pneumonitis, complete obstruction of right bronchus intermedius (Figure 3A and 3B). She reported to have taken the tablet hurriedly.

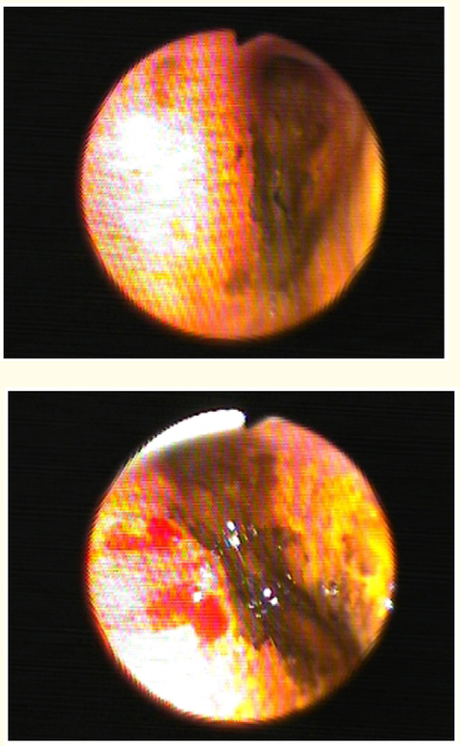

Figure 3A and 3B: *FOB showing severe chemical pneumonitis with complete obstruction of right bronchus intermedius.*

Simple saline wash was given and BAL sample was taken for analysis. But scope can't be negotiated further. Patient withstood the procedure well. Post procedure patient was kept in ICU for observation, and was started on prophylactic antibiotics, nebulisation, oxygen and steroid therapy (Dexamethasone 2 mg IV TID). BAL C/S was showing moderate growth of klebsiella pneumonia and streptococcus. BAL cytology was s/o acute on chronic inflammation. She improved significantly with supportive care, antibiotics and oxygen.

CT chest plain was suggestive of significant air space opacification involving right middle and lower lobe with marked collapse; severe stenosis of right intermediate bronchus just distal to origin of right upper lobe bronchus; marked hyperdensity around right intermediate bronchus.

Post procedure Chest X ray was showing gradual improvement of right lower lobe collapse. Check bronchoscopy was done after 4 days (Figure 4) and again saline wash was given. After that scope can be negotiated further in lower and middle lobe bronchus. Patient started improving after that. Post procedure X ray was showing opened right lower lobe. Patient was kept in hospital for around 1 week. During discharge patients status was better with marked radiological improvement (Figure 5), ambulatory and she was having occasional cough. She was discharged on tapering dose of steroids and supportive care. Follow up bronchoscopy a week later showed marked improvement (Figure 6). One year follow up of patient is normal and has no cardiorespiratory complaints.

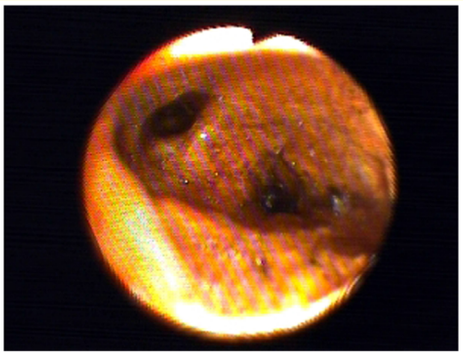

Figure 4: *Check bronchoscopy showing partially opened right bronchus intermedius.*

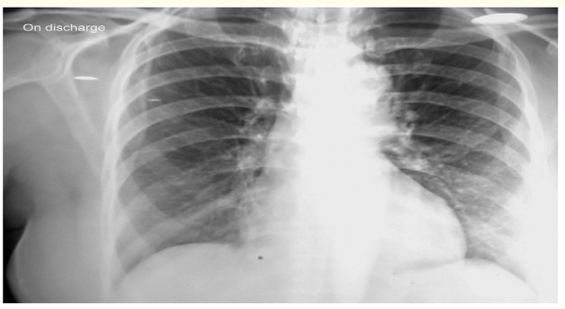

Figure 5: *Post procedure x-ray showing opened right lower lobe.*

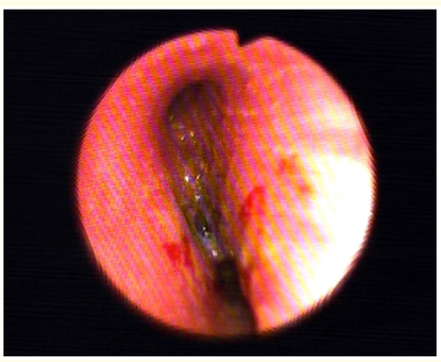

Figure 6: *Follow-up bronchoscopy showing marked improvement in pneumonitis.*

Discussion

Airway injury secondary to pill aspiration is a known phenomenon. With more than 3.7 billion drug prescriptions, the incidence of pill aspiration are much higher than reported in literature [1]. The extent of damage depends upon the chemical properties of the pill and patient's characteristics. The reported common symptoms post pill aspiration in lungs are cough, occasionally hemoptysis, dyspnea, wheezing and chest pain [2,3].

Tablets which dissolve within bronchial airway are ferrous sulphate, alendronate, tetracycline and nortriptyline. Medications recovered intact which don't dissolve are calcium carbonate, sucralfate and ciprofloxacin [4].

The mainstay in treatment is supportive and bronchoscopy plays a crucial role in identifying the extent of damage, need of endobronchial interventions and overall prognosis [5]. The missed chest x-ray finding showing intact tablet must be one of the rare radiological picture given the immediate chemical reaction which ferrous sulphate does on the airway. Early bronchoscopic interventions have been shown to minimize the chemical related local deleterious effects of the pills on the airway [6].

A variety of methods have been described to deal with local effects of the pill including forceps, snares, baskets, balloon catheters for aspiration of the non-absorbed pills; for those causing local damage cryoprobe, cautery, laser fulguration, bronchial dilatation, balloon bronchoplasty and endobronchial methylprednisolone also have been used; few cases have been dealt with rigid scope and in few sick patients lobectomy also have been performed [7.9].

Local effects of iron pill range from inflammation to stenosis and irreversible parenchymal damage. A case of massive hemoptysis leading to shock and death secondary to iron pill also has been reported [2,8,10].

Although benefits of steroids have been unknown so far; our case represents a dramatic recovery along with long term follow up of such case treated with 3 weeks of steroids. The absence of comorbidities, early presentation and local saline wash may be the factors associated with good outcome.

Conclusion

Pill aspiration although not frequently reported in literature, is a significant lung problem. Interventional pulmonology has a definitive role in managing the local complications due to its chemical toxic effects. Iron pill aspiration is surprisingly the most common reported pill aspiration in the literature and is a medical emergency due to severe chemical injury to tracheobronchial mucosa1. Close follow up after early intervention is the key to prevent long term effects. Short course of steroids may be one of the therapeutic arms given the anti-inflammatory effects.

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