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Case Report

Intercostal Lung Herniation Secondary to Thoracotomy: A Case Report

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Abstract

Intercostal lung herniation is defined as a protrusion of the lung parenchyma through a defect in the intercostal muscles between adjacent ribs. The authors report a case of intercostals pulmonary hernia in 45-year-old male patient, smoker (30 pack-years), presented to the emergency department with dyspnea He had the history of pulmonary emphysema complicated of a total right pneumothorax in 2015 treated by minithoracotomy with bullectomy and pleural abrasion. In 2019, He was admitted to the hospital for left chest pain The computed tomography scan of the chest revealed bilateral emphysema with Intercostal lung hernia through the fourth intercostal space The patient was operated, a left thoracotomy with repair of intercostal muscle defect was performed without complications.

Keywords: *Hernia; Lung; Chest; Surgery*

Introduction

Intercostal lung herniation is defined as a protrusion of the lung parenchyma through a defect in the intercostal muscles between adjacent ribs. It presents as a soft, subcutaneous nontender bulge visible on coughing or straining [1]. Acquired lung hernias are usually posttrauma or postsurgery. It can present immediately after the trauma or surgery or be discovered long after initial injury [2]. They may be asymptomatic, or present with pain and hemoptysis if incarceration or strangulation are present.

We present a case report of post thoracotomy intercostal lung herniation.

Case Report

A 45-year-old male patient, smoker (30 pack-years), presented to the emergency department with dyspnea on exertion, cough and left chest pain for five days. He had the history of pulmonary emphysema and his computed tomography scan revealed paraseptal and centolobular emphysema which was bilateral (Figure 1). It was complicated of a total right pneumothorax in 2015 (Figure 2) treated by minithoracotomy with bullectomy and pleural abrasion. In 2016, He had a total left pneumothorax treated by thoracotomy with bullectomy, his postoperative course was simple and his pulmonary function tests, were normal, demonstrated an FEV1 of 2.35 liters (71% predicted) and FCV of 2.69 liters (68% predicted).

In 2019, He was admitted to the hospital for left chest pain. Clinical examination revealed subcutaneous crepitation and emphysema on the level of the 4^{th} and 5^{th} ribs. He had a mild leukocytosis, a normal rate of D-dimers. The chest X-ray showed a parietal subcutaneous gas along the left lower chest wall (Figure 3). The computed tomography scan of the chest revealed bilateral emphysema with Intercostal lung hernia through the fourth intercostal space (Figure 4). The patient was operated, a left thoracotomy with repair of intercostal muscle defect was performed. His postoperative course was simple and he was discharged on hospital without complications.

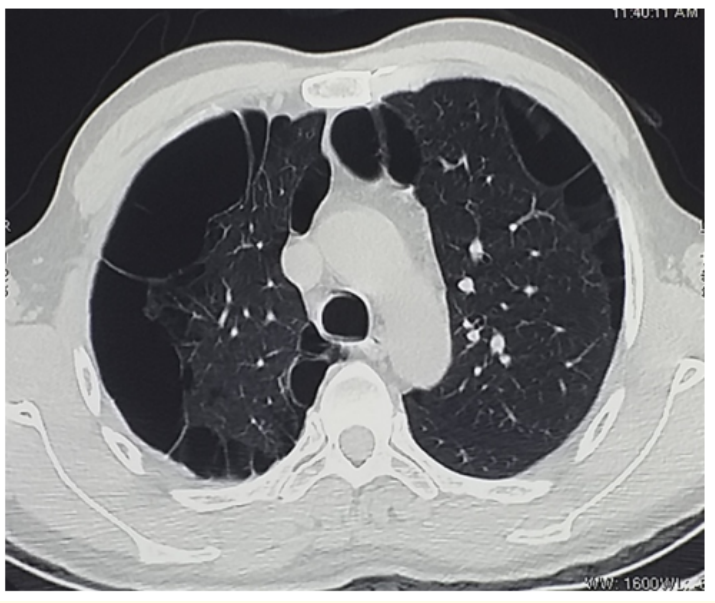

Figure 1: *Computed tomography scan: pulmonary emphysema.*

Figure 2: *Total right pneumothorax.*

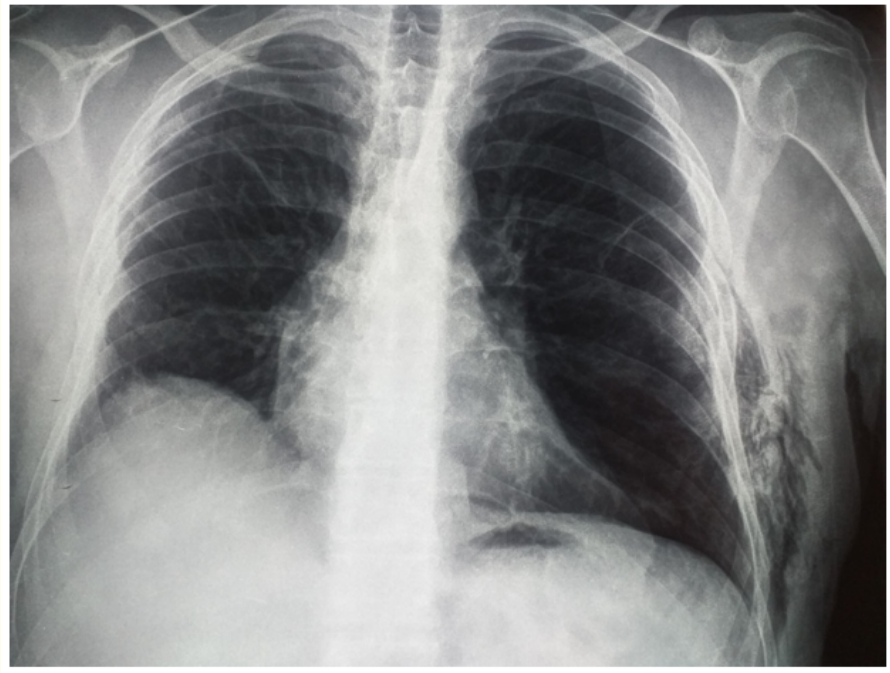

Figure 3: *Chest X-ray: parietal air image.*

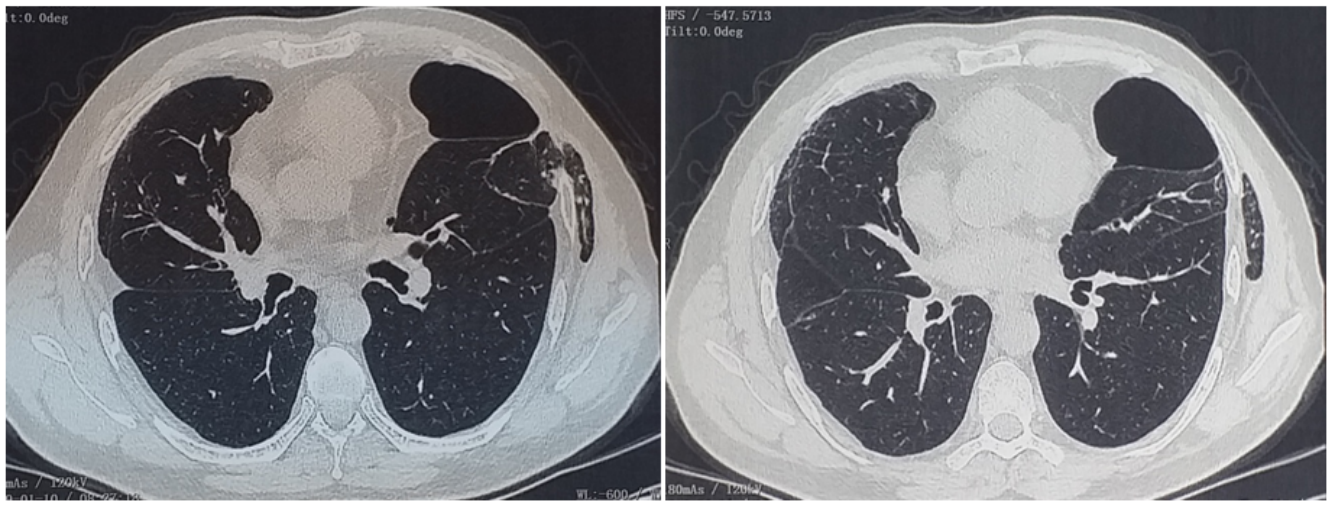

Figure 4: *Computed tomography scan: intercostal lung hernia.*

Discussion

Thoracic hernias are rare abnormality with protrusion of lung parenchyma outside the chest wall [3]. In 66% of cases pulmonary hernia was intercostal which push through a weak area in the thoracic cage, it acquired after thoracic trauma [4,5].

Roland described the first case of thoracic herniation in the 15th century. The classification of Thoracic hernias was based on localization and etiology [4]. Several cases have been reported [4,6]. 64 cases of spontaneous thoracic hernias were reported by Minai and classified by etiology [6].

Trauma is the most common cause of pulmonary hernia in most of cases [7,8]. Chronic obstructive pulmonary disease is one of the frequent causes of spontaneous acquired thoracic herniation. Post-surgery hernias are also frequent. Congenital abnormalities and Connective tissue disorders in the chest wall may be the cause of spontaneous lung herniation [9]. The majority of pulmonary hernias are completely asymptomatic but it may be revealed chest pain, cough, shortness of breath and hemoptysis [10]. Computed tomography is the gold standard for thoracic herniation, it show defect protruding through the thoracic wall of the lung parenchyma [11].

The management of this disease was not codified. The therapeutic indication depends on the patient, the symptoms and extent of the lesion [12]. Complicated hernias with incarceration and strangulation are candidates for surgical treatment [13-15].

Conclusion

Lung herniation should be considered in the differential diagnosis of patients who present with localized pain and subcutaneous emphysema after thoracic surgery. A conservative management is usually enough for mild and moderate herniation but for larger herniations surgical approach may be necessary.

Conflicts of Interest

The authors have no Conflicts of interest.

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