



Case report

Iatrogenic “buffalo chest” bilateral pneumothoraces following unilateral transbronchial lung biopsies in a bilateral lung transplant recipient



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A B S T R A C T

Keywords:

Lung transplant
Pneumothorax
Transbronchial lung biopsy

We present a 54 year old male patient who had a bilateral lung transplant sixteen years ago for Alpha-1 Antitrypsin Deficiency-related emphysema. He was referred for flexible bronchoscopy with transbronchial biopsies to evaluate new mild exertional dyspnea and worsening of his FEV₁. Eight transbronchial biopsies were done from the right middle lobe and the right lower lobe. Post procedure he developed bilateral pneumothoraces that required emergent bilateral pleural ‘pigtail’ catheters. To our knowledge, this is the first reported case of bilateral pneumothoraces that developed after a unilateral procedure in a bilateral lung transplant recipient relatively late after the transplant.

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Introduction

Bronchoscopy with inspection of the tracheobronchial tree, bronchoalveolar lavage and transbronchial biopsy is a valuable tool for evaluating lung allograft complications. The relative safety and efficacy of transbronchial biopsy in lung transplant recipients has been established [1,2]. The risk of pneumothorax following bronchoscopy in lung transplant recipients has been reported around 1.5% [1,2].

Case report

We report a 54-year-old male bilateral lung transplant recipient sixteen years ago for Alpha-1 Antitrypsin Deficiency-related emphysema who was referred for flexible bronchoscopy with transbronchial biopsies to evaluate new mild exertional dyspnea and recent worsening of his FEV₁. He had three transbronchial biopsies in the past without any complications, including one about 4 years prior. His transplant surgery was done using an anterior chest “clamshell” incision.

This most recent procedure was done under moderate sedation. Bronchoalveolar lavage was done from the right middle lobe, followed by eight transbronchial biopsies taken from the right middle

lobe and right lower lobe under fluoroscopic guidance. The patient appeared to tolerate the procedure well without immediate complications.

About 30 min post-procedure, he started complaining of right-sided pleuritic chest pain. The chest X-ray (Fig. 1) at that time revealed a right side pneumothorax; he was continued on supplemental oxygen. However, his chest pain worsened, and he exhibited worsening pulse oximetry and complained of rapidly worsening dyspnea. Another chest X-ray (Fig. 2) done 1 h after the initial X-ray confirmed bilateral pneumothoraces. He was then intubated for severe respiratory distress and hypoxia. Bilateral pleural ‘pigtail’ catheters were placed emergently, and the bilateral pneumothoraces rapidly improved, with complete resolution of dyspnea and hypoxia.

Discussion

Lung transplantation has become the standard of care for select patients with advanced lung diseases of various non-malignant etiologies. Bilateral lung transplantation has become the procedure of choice for most indications. Bilateral sequential operation performed through a transverse thoracosternotomy (“clamshell”) incision was introduced in 1989.

The pleural spaces are completely separated from each other in human beings. Pleuropleural communication has been termed as “buffalo chest” in reference to the single pleural cavity seen in the North American buffalo or bison; this communication can be congenital, iatrogenic or traumatic [3]. Iatrogenic “buffalo chest”

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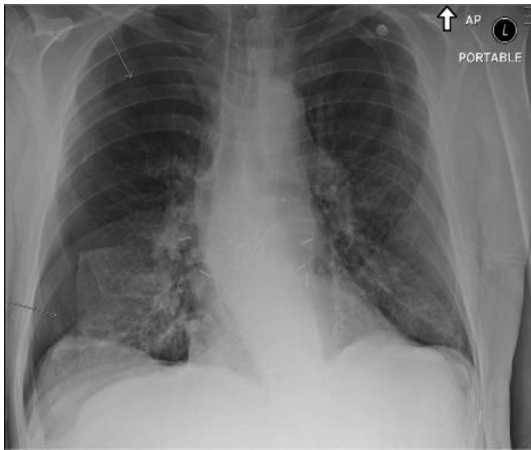


Fig. 1. Chest X-ray 30 min post-procedure. Right side pneumothorax.

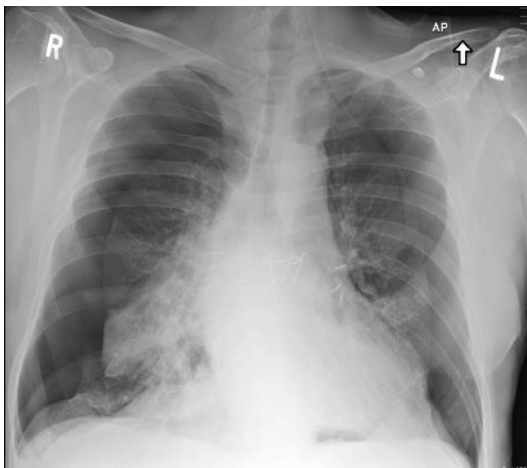


Fig. 2. Chest X-ray 1 h after the first Chest X-ray. Bilateral pneumothoraces.

has been reported following procedures involving median sternotomy [4], laparoscopic surgery [5] and heart-lung transplantation [6] relatively soon after these procedures. During these procedures, the two parietal pleurae may become severed, resulting in communication between the two pleural spaces [3]. We think that our patient developed a bilateral pneumothorax after a unilateral procedure due to a residual defect from his transplant surgery sixteen years ago that never healed.

To our knowledge, this is the first reported case of bilateral pneumothoraces that developed after a unilateral procedure in a bilateral lung transplant recipient relatively late after the transplant. With the increase in the number of transplant recipients, much of the subsequent follow up care is now conducted by non-transplant pulmonologists at substantial geographic distances from the transplant centers. Our case draws the attention of non-transplant pulmonologists providing care at a distance from transplant centers to this possible complication, even several years after transplant surgery, in bilateral lung transplant recipients.

Disclosure statement

The authors have no conflicts of interest to disclose.

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