

## A patient with shortness of breath and cough

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A 83-year-old gentleman presented to Accident and Emergency Department with cough and dyspnea. He was a non-smoker with history of asthma. Physical examination revealed decreased breath sound over left lung base. Blood tests were unremarkable except slight elevated neutrophils count. Chest X Ray showed small amount of left pleural effusion. He was treated as community acquired pneumonia with intravenous Amoxicillin/Clavulanate and oral Azithromycin. The patient developed hemoptysis and desaturation one day after admission. Repeated CXR showed increased left pleural effusion. Antibiotic was upgraded to Piperacillin/Tazobactam. Urgent Computed Tomography of Thorax showed left upper lobe of lung herniating anteriorly through defect between first costal cartilage and sternum, second costochondral separation, first and second intercostal space. Patient was taken over by cardiothoracic surgeons and surgical repair was performed.

Herniation of lung is defined as its protrusion through an abnormal opening in the chest wall. This rare condition is associated with increased intrathoracic pressure which either directly causes the lung herniation or weakens the thoracic wall. Symptoms of lung herniation include:

- A soft, tender, subcutaneous mass that enlarges or appears on physical strain or coughing

- Acute chest pain after coughing or sneezing
- Pain or tenderness upon palpating the area around the chest wall defect
- Ecchymosis

For the etiology of lung herniation, it can be classified into:

- Acquired (80%)
  - Traumatic (52%)
  - Spontaneous (30%)
  - Pathological (18%)
- Congenital (20%)

Trauma is the most common cause of lung hernia. Hernia usually occurs after surgery or blunt trauma. Spontaneous lung hernia is unusual. It requires an abnormal rise in intrathoracic pressure in addition to weakness in the thoracic wall. Pathological hernia is usually secondary to local active processes like neoplasm or inflammation. Congenital hernia results from attenuation of the endothoracic fascia.

Lung herniation can be diagnosed by CXR or CT with or without Valsalva manoeuvre. CT is useful in assessing the exact location and size of the defect and detecting local neoplastic or inflammatory processes. Complications of lung hernia include incarceration, strangulation, airway obstruction and recurrent

infection. Treatment may be required for symptomatic hernia. Simple measures such as compressive pads and corsets may be effective. Curative treatment is surgical repair.