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"I'm sensing some tension here!"

A case report of tension empyema

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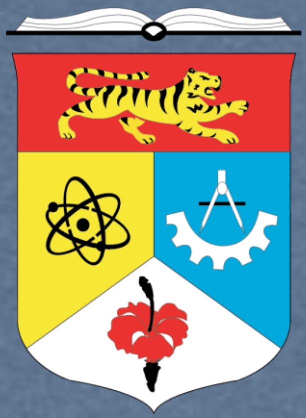
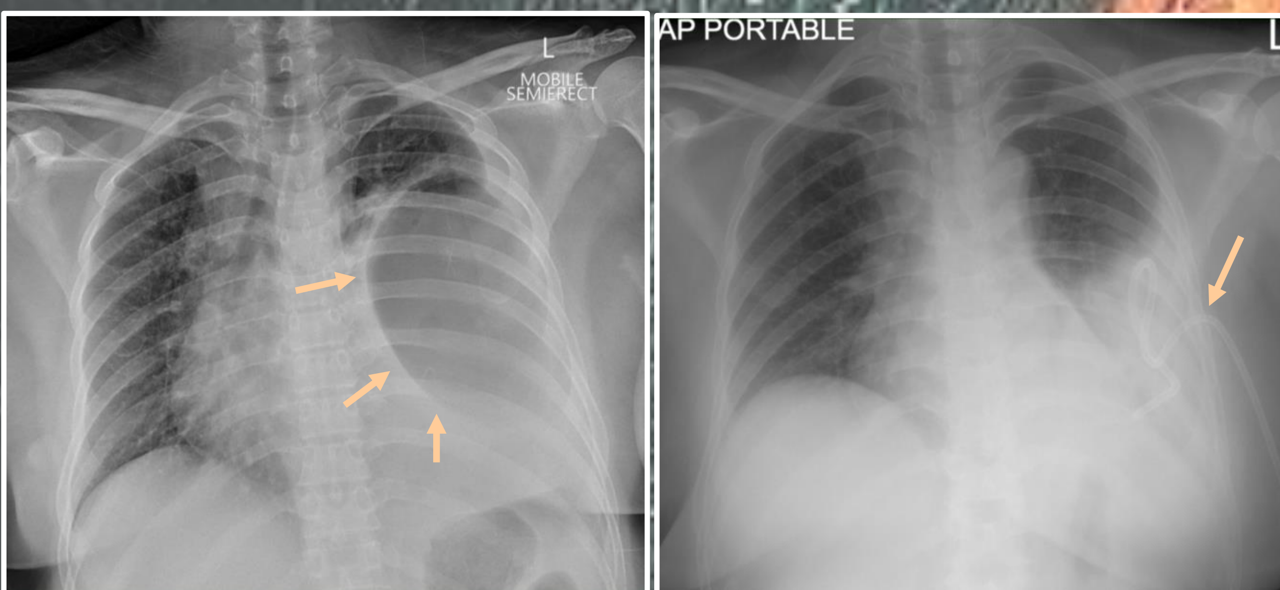


INTRODUCTION

Tension empyema is both a rare complication of pneumonia and a medical emergency. Accumulation of gas is the most common aetiology for expanding intrapleural space. However, other substances such as pus, fluid or blood could cause similar pathology and compromise patient's haemodynamic status. We would like to present a case of tension empyema that has presented to our hospital.

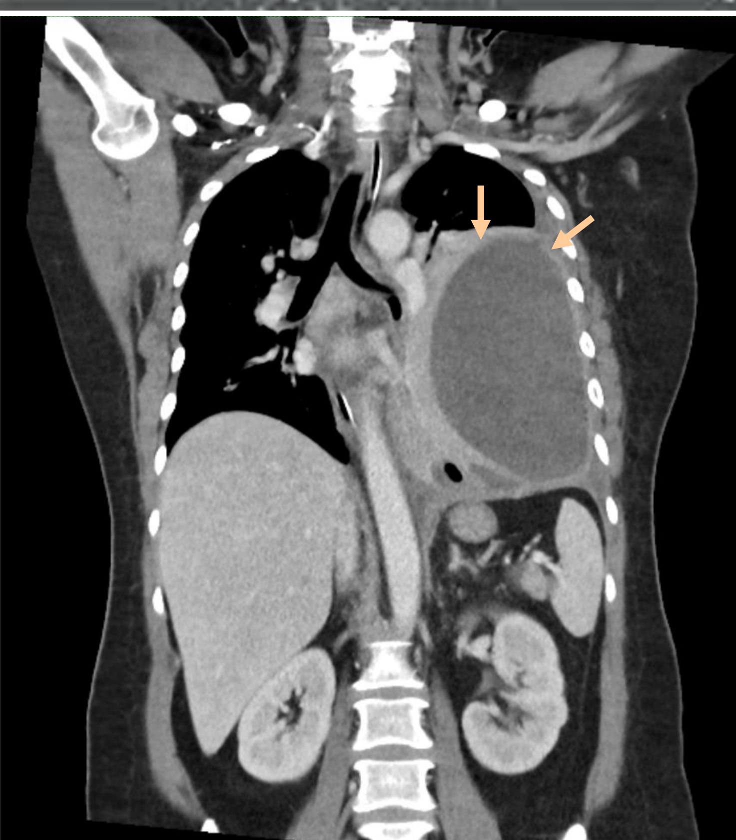
CASE DESCRIPTION

A 52 years old female with underlying hypertension, complained of feeling breathless and prolonged fever. She was hypotensive and tachypnoiec. There were no breath sounds over left lung. ECG showed sinus tachycardia. RUSH protocol revealed inadequate right ventricular filling with absent of pericardial effusion. Lung scan showed an anechoic lesion occupying the left lower zone. Chest x-ray (CXR) revealed a large round opracified lesion occupying left lower lobe. A left chest grain was inserted.

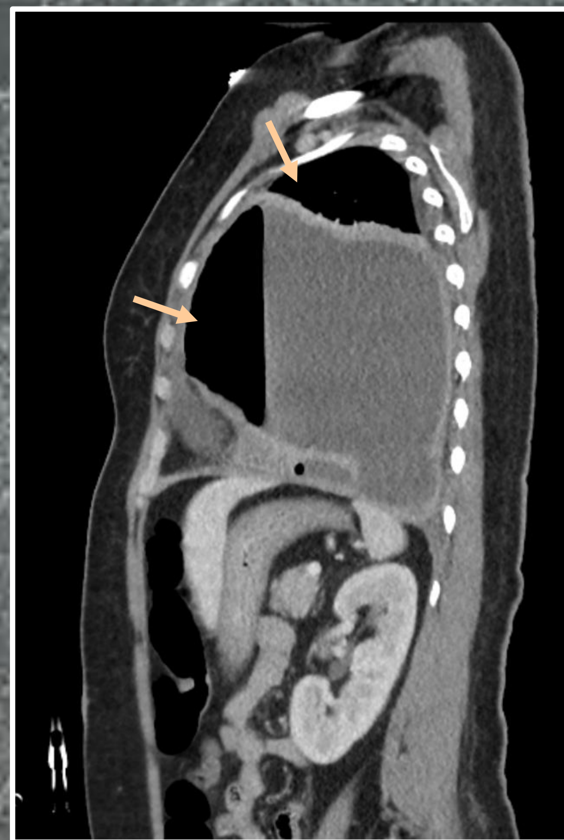


CXR upon arrival *CXR prior to removal of chest tube*

She then proceeded with Computed tomography (CT) thorax which reported as left lung abscess with rupture into the pleural cavity and mass effect (mediastinal and tracheal shift to opposite). Patient was subsequently discharged well after completed antibiotics for two weeks in ward.



CT thorax view of huge left empyema



CT thorax (sagittal view)

DECLARATION OF CONFLICT

There is no conflict of interest

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DISCUSSION

Empyema refers to the collection of pus in the pleural space. The causative organisms for this complication have been predominantly *Mycobacterium tuberculosis* and *Actinomyces israelii*. Tension empyema is a rare and life-threatening complication of pleural space infection requiring emergent drainage. The empyema subcommittee of Research Committee of the British Thoracic Society has listed diabetes mellitus as an independent risk factor for the development of empyema. In 2017, the American association for thoracic surgery has updated alcoholism and intravenous drug user as risk factor for developing tension empyema.

Due to acute accumulation of pus, tension builds up within the pleural space resulting in significant amount of positive pressure exerting onto the mediastinal structures. As a result, the increased intra-thoracic pressure later compromises venous return and essentially the cardiac output. Unlike tension pneumothorax, tension empyema differs by dull percussion note on physical examination. Both pathologies require urgent thoracostomy to relieve the escalating intrathoracic pressure. Immediate return of spontaneous circulation and blood pressure ensued with drainage of pus. There have been reported cases whereby patient developed cardiac arrest due to tension empyema and successfully reverted after thoracostomy was done.

Our intention of writing this case report is to highlight that tension empyema, though rare, is a significant tension thorax pathology that could result in mortality if emergent treatment is not given. We are grateful that this patient did not deteriorate into such state and has received timely management.

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