AN INTERESTING CASE OF GIANT BULLA OF LUNG SIMULATING TENSION PNEUMOTHORAX
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Abstract: A 55 year old woman visited our hospital for exertional dyspnoea and dry cough for 2 months. Radiological investigations revealed a giant bulla of the left lung simulating tension pneumothorax, that was treated with video assisted thorascopic bullectomy. This case is reported as to include giant bulla in the differential diagnosis of tension pneumothorax.

Keyword: A 55 year old woman visited our hospital for exertional dyspnoea and dry cough for 2 months. Radiological investigations revealed a giant bulla of the left lung simulating tension pneumothorax, that was treated with video assisted thorascopic bullectomy. This case is reported as to include giant bulla in the differential diagnosis of tension pneumothorax. A 55 year old woman with no significant medical history in the past presented to our outpatient clinic with exertional dyspnoea and non-productive cough for 2 months duration. On physical examination she was a healthy looking woman, comfortable at rest. There was a slight asymmetry of the chest with hyperresonant percussion and decreased breath sounds on the left hemithorax. Her cardiac and neurological status was normal. Laboratory parameters did not reveal any abnormalities. A chest roentgenogram done revealed a large pneumothorax on the left side (Fig. 1).

Fig. 1. Chest roentgenogram showing left sided large pneumothorax. The differential diagnosis were tension pneumothorax and giant bulla, but due to the duration of symptoms for 2 months the differential diagnosis of giant bulla was considered. A High resolution computed tomography (HRCT ) of thorax confirmed the diagnosis of large bulla occupying the entire left hemithorax causing compressive atelectasis of the left lung with mediastinal shift to right side (Fig. 2).

Fig. 2. HRCT thorax showing Giant bulla of the left lung, causing compression of left lung. With the clinicoradiological features concluding the diagnosis of giant bulla, we referred the patient for surgical intervention condition, to cardiothoracic surgery team at our hospital. VATS bullectomy was performed with double lumen endotracheal tube with single lung ventilation, following bullectomy pleural space was drained with a single apical drain. After VATS left lung expansion was adequate (Fig. 3). Postoperative period was uneventful and the thoracic drain was removed on the third postoperative day. Patient was discharged with good status – Adequate lung expansion.

Discussion: Bullae are sharply demarcated, air filled spaces within the lung parenchyma, measuring one centimetre or greater in distended diameter, which are formed due to destructive process of emphysema or alpha-1 antitrypsin deficiency, usually restricted by a fibrous wall or can be trabeculated due to remnants of alveolar septa. [1,2] Giant bullae refers to the enlargement of one or more bullae to such a extent that they occupy more than one third of hemithorax. [3] They do not participate to a great extent in ventilation or gas exchange. [1] Bullae can produce clinical and radiological appearances of pneumothorax, therefore it is essential to differentiate them before treatment. [4] High resolution computerised tomography (HRCT) is the most useful and accurate imaging procedure and must be obtained before surgery. On computerised tomography, bullae, appear as avascular areas with curvilinear boundaries. [2] Without visualizing the outer wall of the bullae a large airspace in the chest could be pneumothorax. [5,6] Surgical treatment of giant bulla has received renewed attention because of the recent advances in minimally invasive techniques. [7] A broad array of surgical techniques have been proposed for management of giant bulla such as local excision of the bullae[8], plication[9], stapler resection[10], lobectomy[11], usually performed through an open approach such as thoracotomy or sternotomy[12]. Video assisted thoracoscopic surgery (VATS) has become the gold standard surgical approach for bullous disease. Surgical resection of giant bulla...
permits the compressed functioning lung to re-expand, thereby permitting better ventilation and perfusion, with resultant decrease in dead space and residual volume and ultimately improving chest wall mechanics[13]. We believe that bullectomy, when technically feasible should be performed by limited resections using a minimally invasive approach to preserve all the potentially functioning lung tissue with minimal surgical trauma.[14-16]. Our experience supports the safety and effectiveness of video assisted thorascopic approach for the management of giant bulla,[7]. Because of timely management with VATS bullectomy, our patient had an excellent outcome. This case report highlights the importance of HRCT to differentiate the pneumothorax and giant bulla, as the management is different in either cases.

References