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CASE REPORT

AN INTERESTING CASE OF HAEMOPNEUMOTHORAX – SECONDARY TO BOERHAAVE'S SYNDROME

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ABSTRACT: A 30 year old male patient presented with sudden onset right sided chest pain, breathlessness and shock, he was diagnosed to be having hemopneumothorax the cause of which was rupture of esophagus. Patient improved with intercostal drainage tube insertion and supportive treatment.

KEYWORDS: Boerhaave's syndrome, Hemopneumothorax.

INTRODUCTION: Boerhaave's syndrome is a severe form of transmural tear with perforation of esophagus occurring in response to an acute increase in intra-abdominal pressure and accentuation of the intragastric-to-intrathoracic pressure gradient. It is precipitated by severe vomiting and retching, abdominal straining, blunt trauma, and coughing. It is catastrophic event with shock and sepsis due to a large esophageal perforation. We report a case of rupture of esophagus presenting as hemopneumothorax.

CASE REPORT: A 30 year old male patient presented to the emergency room with right sided chest pain and breathlessness of sudden onset since 17 hours, this was preceded by severe retching and vomiting 4 episodes. History revealed patient indulging in an alcohol binge for 3 days prior to onset of symptoms during which he consumed minimum food. There was no history of trauma to chest, hematemesis, melena and no history of any significant medical illness or surgeries in the past.

On examination the patient was conscious and in distress. Pulse and Blood pressure were not recordable. Carotid pulsations were feeble. Patient was tachypneic, respiratory rate was 40 per minute. There was no cyanosis, icterus, edema or marfanoid habitus.

Respiratory system examination revealed fullness and decreased movements of right hemithorax, hyper resonant and absent breath sounds over right hemithorax. Nervous system, cardiac and abdominal examination was insignificant.

INVESTIGATIONS: Chest X-Ray showed Rt.sided complete pneumothorax, with mediastinal shift to left. (Fig-1) ECG - showed sinus tachycardia. His total WBC count was -22,600 cells/dl, renal and liver function tests were normal. CT thorax revealed Right hemopneumothorax, lower 1/3rd of esophagus was thickened and few tiny extra-luminal air pockets were noted in the mediastinum in the vicinity of lower esophagus (Image-1). CT thorax with barium contrast swallow showed a mucosal laceration in the lower end of esophagus, there was no leakage of contrast, probably indicating spontaneous closure (Image-2). Coagulation profile was normal. HIV: non-reactive.

Esophago gastroduodenoscopy: Performed on 2th day, after stabilization of the patient which showed a normal study, no mucosal tear.

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Course in the hospital: Intercostal drainage tube (ICD) drained frank blood of 1950ml, this improved his respiratory distress. The patient became hemodynamically stable. He was given broad spectrum antibiotics and transfused with 3 units of packed red cells. Check x-ray done after ICD insertion showed significant lung expansion (Figure-2). Gross examination of ICD drain didn't reveal any abnormal contents like food particles. ICD was removed 28 hours later, when the drain was minimal with significant expansion of right lung (Figure-3). Patient made a remarkable recovery without any complications and was discharged on the 10th day of his admission. He is healthy and symptom free on follow-up.

With the available history and investigations, a diagnosis of right hemopneumothorax secondary to esophageal rupture was made. Absence of leakage of contrast was attributed to probable spontaneous closure of esophageal rupture by the time the study was done.

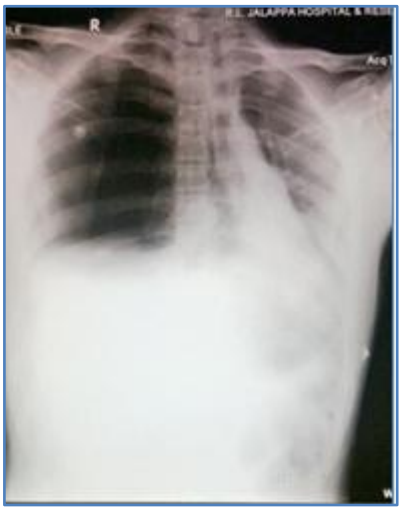

Fig. 1: CXR AP View: Right complete Pneumothrax with shift of mediastinum towords left

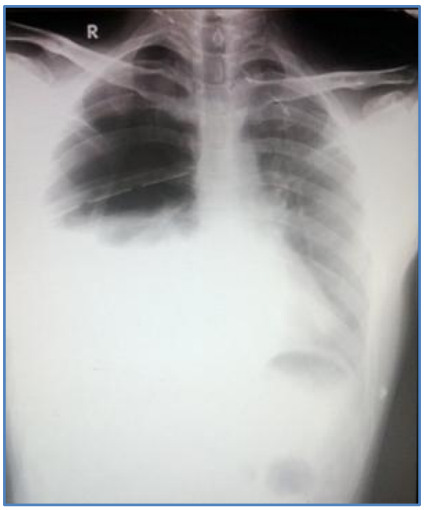

Fig. 2: ICD Tube insitu with right lung expanded and obliterated right costo-phrenic angle

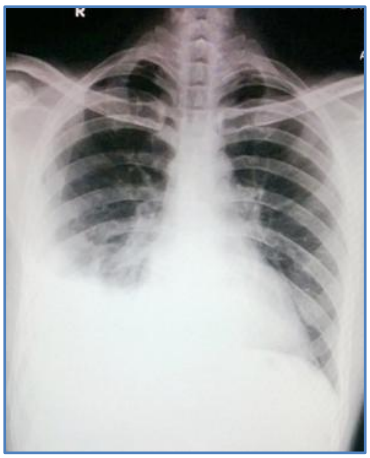

Fig. 3: CXR post ICD removal with obliterated right costo-phrenic angle

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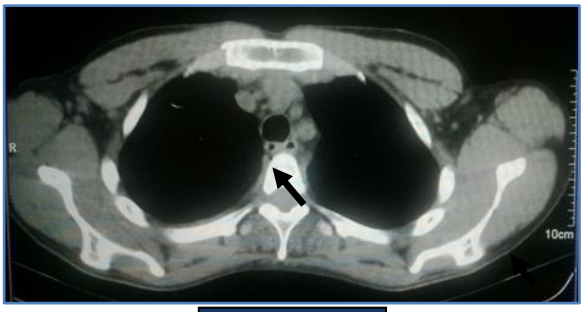

Image 1

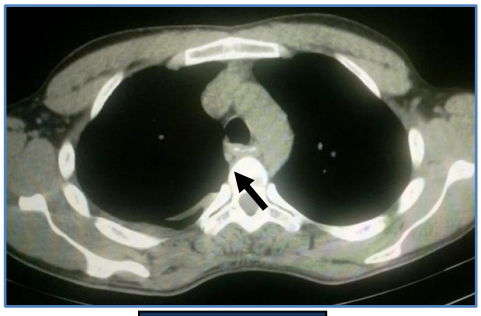

Image 2

Image 1 and 2 – CT Thorax(plain and contrast swallow) images showing pneumomediastinum marked by an arrow.

DISCUSSION: Boerhaave's syndrome refers to post emetic transmural esophageal perforation.[1] It is rare but potentially lethal condition. The perforation occurs in distal esophagus commonly in left lateral wall, rarely involving posterior and right lateral wall. Preceding symptoms such as severe vomiting and retching, abdominal straining, blunt trauma, and cough may precipitate perforation.[2] Classical symptoms are sudden severe chest pain and epigastric pain. The pathophysiology consists of mediastinal contamination by gastroesophageal contents leading to fulminant mediastinitis. Signs include subcutaneous emphysema, Hamman's sign (crunching, rasping sound, synchronous with the heartbeat, heard over the precordium produced by the heart beating against air-filled tissues) and clinical picture of severe sepsis.

Initial Chest radiograph usually reveals mediastinal or free peritoneal air. Later pleural effusion with or without pneumothorax, widened mediastinum and subcutaneous emphysema are typically seen. CT scan may show esophageal wall edema and thickening, extra esophageal air, peri-esophageal fluid with or without gas bubbles, mediastinal widening, and air and fluid in the pleural spaces, retroperitoneum or lesser sac.[3] Diagnosis is confirmed by a CT thorax with oral contrast swallow which shows leakage of contrast at perforated site. There are three strategies of treatment, endoscopic, open surgery and conservative. It is treated endoscopically when diagnosed within 48 hours, when there are no signs of sepsis. When a patient is diagnosed within 48 hours and has a septic profile, surgical correction is performed. When a patient is diagnosed after 48 h, conservative treatment should be followed, but if a patient has septic profile surgical treatment is indicated.[4]

Even though Boerhaave's syndrome typically manifests as mediastinitis and sepsis, there are reported cases of pneumothorax[5], hydropneumothorax[6], heamothorax[7,8] secondary to esophageal rupture.

Tension pneumothorax is the progressive building up of air within pleural space. Intrapleural pressure may become more than atmospheric pressure causing mediastinal shift, impairment of venous return and may result in cardiovascular compromise.[9] An intercostal drainage tube is the most definitive initial treatment.[10]

Our case presented with a right sided hemopneumothorax. The history was remarkable for antecedent alcohol consumption and repeated retching. Lack of evidence suggesting other common causes of hemopneumothorax, warranted further investigations. History and radiographic evidence suggested esophageal rupture as probable cause of hemopneumothorax. A diagnosis of right

hemopneumothorax secondary to Boerhaave's syndrome was made and managed conservatively with a favorable outcome.

False negative results in contrast swallow study were attributed to probable spontaneous closure of the small tear by the time study was conducted. The absence of gastro-esophageal contents in the drain was postulated to be due to his state of almost absent intake of food for the preceding three days.

CONCLUSION: This case re-emphasizes the importance of history and clinical examination in planning investigations and arriving at right diagnosis. This case also underlines the necessity to consider and confirm or rule out even uncommon causes of medical emergencies in the right clinical settings. Thus in every case of hemopnemothorax with a suggestive history, the possibility of Boerhaave's syndrome should be considered.

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