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MORBIDITY IN SLOW MOTION

Medicine

Dr. Rahul Rohan Junior Resident, Department of Emergency Medicine, Nizam's Institute of Medical Sciences, Hyderabad – 500082

Dr. Mohammed Ismail Nizami Assistant Professor, Department of Emergency Medicine, Nizam's Institute of Medical Sciences, Hyderabad – 500082

Dr.Ashima Sharma Professor & HOD, Department of Emergency Medicine, Nizam's Institute of Medical Sciences, Hyderabad – 500082

ABSTRACT

Acute onset dyspneain a patient with history ofblunt chest injury can be due to traumatic hemothorax.The most common cause of hemorrhagic pleural effusionis trauma.Apart from trauma, malignancy and pulmonary embolism are the other major causes of hemorrhagic pleural effusion.1 Herein we present a case of dissecting aneurysm of descending thoracic aorta presenting initially with shortness of breath due to right sided massive pleural effusion.

KEYWORDS

Dyspnea, Aortic dissection, Hemothorax.

Introduction

Acute dissection of the thoracic aorta is one of the most common causes of vascular emergencies requiring prompt diagnosis and treatment. 2Hemothorax is found hardly in 10% of aortic dissection and are mostly found in dissection of descending thoracic aorta.3Aruptured dissection usually causes left hemothorax.4 Herein we present a case of ruptured Stanford type B aortic dissection which caused right sided hemothorax.

Case report

A 32-year-old male with no known comorbidities attended the emergency room with grade III dyspnea. His shortness of breath was gradual in onset and started 15days back and progressive in nature. It was associated with right sided chest pain which was sharp, continuous andprogressivelyradiating to inter-scapular region. There was no history of cough, fever, palpitation, hemoptysis or weight loss. There was no significant past medical history. However, patient revealed a history of insignificant minor chest trauma 20 days back. At presentation, the patient was tachypneic with a respiratory rate of 28 breaths/min, pulse rate was 110 beats/min regular, equally palpable in all four limbs and blood pressure was 140/80 mm Hg in supine position in both the upperlimbs. The lower limb pressures were equal with upper limb. Pallor was noted. Upper respiratory tract examination was within normal limit. There was decreased movement in right hemi thorax. Trachea was shifted to left, vocal fremitus on right was decreased, dull percussion note was noted on the same side.

On auscultation breath sound and vocal fremitus were diminished on right side. Examination of other systems did not reveal any abnormality. His arterial blood gas revealed Type 1 respiratory failure with PaO2 of 55mmHg.e-FASTwas suggestive of decreased movements of hemithorax on right side with fluid noted in the right pleural cavity. ECG showed sinus tachycardia. X-ray revealed homogenous opacity in the right lung field with obliteration of cardio-phrenic angle suggesting massive right pleural effusion with contralateral shifting of the mediastinum (Figure 1). The medical routines were within normal limits. Transthoracicechocardiography (TTE) revealed dissection flap in the thoracic cavity.Pleural fluid aspiration was haemorrhagic in nature. We then performed CT scan of thorax and CT- aortogram, which revealed an aortic dissection just distal to the origin of the left sub-clavian artery and extended into the abdominal aorta until the level of the origin of the celiac truncus. It also showed massive right hemothorax and mediastinalhemorrhage.

DISCUSSION

Ruptureis a frequent complication of aortic dissection causing massive haemorrhage and is associated with more than 50% mortality.Hemothorax is seen in 10% of descending aorticruptures and is usually located on left side. Right hemothorax has been reported in the majority of cases to arise from a medial tear in the aortа at the level of the mid-thoracic spine, which bleeds into the posterior mediastinum and crosses the midline to rupture into the right pleural space.5Several imaging modalities including chest X-ray, trans-esophageal echo, CT aortography and conventional angiography can be used in the emergency department.The important factors that predispose to aortic dissection are systemic hypertension (a coexisting condition in 70% of patients), cystic medial necrosis, Marfan syndrome, congenital aortic valve anomalies (e.g., bicuspid valve) and aortic trauma.6 Our patient had no above comorbidities, but he had a history of recent trivial trauma which was the cause of dissection. Aortic dissection is classified according to the Stanford classification where it is either type A, in which the dissection involves the ascending aorta (proximal dissection), or type B, in which it is limited to the descending aorta (distal dissection). From the management point of view, classification of aortic dissections into type A or B is more practical and useful as type A dissections require surgery, while type B dissections may be managed medically under most conditions. Our case had type B dissection which could be managed medically.Acute aortic dissection presents usually with sudden onset of pain, which is often described as very severe tearing type of pain and is associated with diaphoresis.Chest pain was not severe in our case and it was not even the main presenting complaint. Rather it was shortness of breath with which the patient had presented to us. Leaking dissecting aneurysms usually present with hemorrhagicpleural effusions,anemia and low haematocrit. 7Trans-esophageal echo (TEE) is more accurate than TTE and is as sensitive and specific as CT scanning and magnetic resonance imaging.8 It will be able to assess the flow or no-flow in the false lumen.Computed tomography is the most frequently performed first imaging modality.9However it will not evaluate aortic valve insufficiency adequately. Contrast enhanced CT scan is reserved for situations in which both TEE and MRI are unavailable or contraindicated.MRI is especially suited for evaluation of chronic dissections, however it will not detect intimal tear (limited dissection) without hematoma and eccentric aortic bulge, which can only be diagnosed with aortography.Aortography is used when ascending aortic dissection is strongly suspected and non-invasive tests are unavailable or inconclusive. It is an invasive procedure and requires the use of contrast. Its use is limited in critically ill and unstable patients. Nevertheless, it remains the method of choice in diagnosing intimal tear without hematoma and eccentric aortic bulge.

In conclusion, type B aortic dissection with rupture is a fatal condition that may, on rare occasions, cause right hemothorax. This unusual presentation should always be considered in patients with acute chest pain. As identification of the rupture site and accompanying complications are crucial for planning surgery and TEE can result in a false-positive diagnosis, CT should be the first diagnostic test performed.

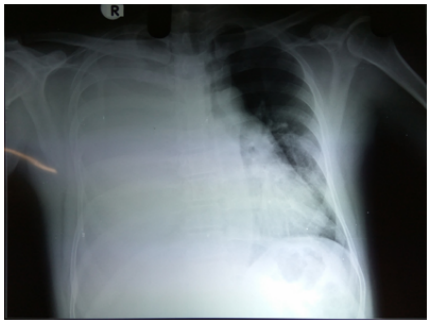

Figure 1. Antero-posterior chest X-ray showingopacification of the right hemithorax with widened mediastinum.

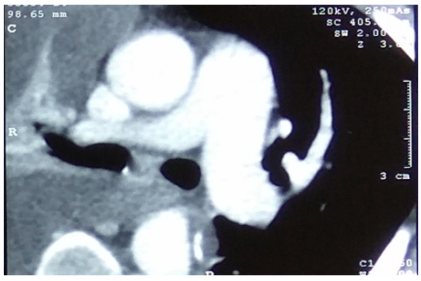

Figure 2. Axial CT view showing the dissection of the descending thoracic aorta.

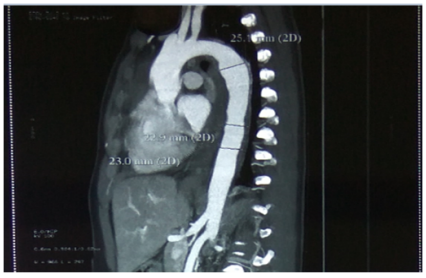

Figure 3. Sagittal view of the contrast CT outlining the aorta.

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