



Case Report

An Interesting Case of Right Sided Haemorrhagic Pleural Effusion.

Anitha A^{1*}, Prabhakar K², Sindhu BR³

1. Associate Professor, Department of General Medicine, Sri Devaraj Urs Medical Collage, Sri Devaraj Urs Academy of Higher Education and Research, Kolar.
2. Professor, Department of General Medicine, Sri Devaraj Urs Medical Collage, Sri Devaraj Urs Academy of Higher Education and Research, Kolar.
3. Assistant Professor, Department of General Medicine, Sri Devaraj Urs Medical Collage, Sri Devaraj Urs Academy of Higher Education and Research, Kolar.

Abstract

Hemorrhagic pleural effusions is common in our clinical practice and its usually due to trauma, malignancy and pulmonary embolism. Other rare causes are Bleeding diathesis, Spontaneous hemopneumothorax, Aortic dissection or rupture, Aneurysm rupture or dissection of internal mammary artery, Post-cardiac injury syndrome, Infections like dengue hemorrhagic fever, pulmonary tuberculosis, etc. Aortic dissection is uncommon, a high index of suspicion for acute aortic dissection must be kept in mind when evaluating patients with unexplained chest or back pain. Here by presenting a case of elderly male patient with acute onset right sided chest pain with right haemorrhagic effusion and whose CT thorax revealed aortic dissection. Pleural effusion in aortic dissection is mainly due to inflammation and is a rare presentation.

Keywords: Hemorrhagic pleural effusion, Pancreatitis, Cause.

Introduction

Hemorrhagic pleural effusions is common in our clinical practice and its usually due to trauma, malignancy and pulmonary embolism. Other rare causes are Bleeding diathesis, Spontaneous hemopneumothorax, Aortic dissection or rupture, Aneurysm rupture or dissection of internal mammary artery, Post-cardiac injury syndrome, Infections like dengue hemorrhagic fever, pulmonary tuberculosis, Thoracic endometriosis with catamenial hemothorax, Vascular and connective tissue anomalies (Ehlers-Danlos type 4, neurofibromatosis, hereditary hemorrhagic telangiectasis), Exostoses, Catamenial hemothorax, Extralobar pulmonary sequestration,

Extramedullary hematopoiesis, Congenital diseases such as Ehlers-Danlos type 4, neurofibromatosis, hereditary hemorrhagic telangiectasis, and Bean's blue rubber nevus syndrome.¹

Pleural effusion in aortic dissection is mainly due to inflammation. Left sided pleural effusion is more common followed by bilateral effusion. Here by presenting a case of aortic dissection who presented to us with right haemorrhagic effusion with no risk factors.

Case Report

A 65 year old male patient, known smoker presented to EMD with history of right sided chest pain of 2 days duration which was continuous, dull aching in nature, lateralized, increased with respiration and reduced with right lateral decubitus position, no diurnal variation and fever of 2 days duration with no chills or rigors and mild grade. No history of breathlessness, palpitations, nausea, vomiting, loose stools, loss of weight or appetite. No history of diabetes, hypertension, IHD, TB.

On examination Pulse-102/minute, regular, normal in volume and character. Blood pressure-130/80 mmHg in both upper limbs. Respiratory rate:20/min. Trachea was central, Right infrascapular, infra axillary area was dull on percussion and absent breath sounds in right

*Corresponding Author

Dr. Anitha A

Associate Professor, Department of General Medicine, Sri Devaraj Urs Medical College, Sri Devaraj Urs Academy of Higher Education and Research, Tamaka, Kolarr-563101.

Mobile No: 8971710766

E-mail: anithasdumc@gmail.com

Conflict of Interest: None

Financial Aid: Nil

Submitted: 01-07-2022

Accepted: 10-07-2022

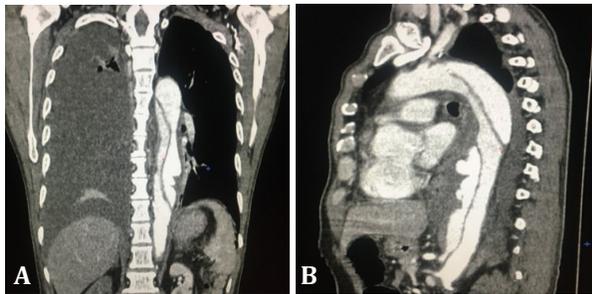
Published: 20-07-2022

infra-axillary and infra scapular area. Chest X-ray showed obliteration of cost phrenic angle on the right. Provisional diagnosis of Right sided pleural effusion was made and patient was admitted to Medicine ward and started on empirical antibiotics and thoracentesis was advised. Complete haemogram: Haemoglobin-10.6gm%, Total WBC count-29,280/mm³

Platelet count-2.18L/mm³, Renal and Liver function tests were Normal. Pleural fluid was haemorrhagic and it was analysed.

Pleural fluid analysis: Protein -6.5gm/dl, Sugar-132mg/dl, chloride-102meq/dl, LDH-178. Light's criteria was suggestive of exudative pleural effusion.

Figure 1 (A&B) : CT thorax and aortogram.



Dissection of aorta extending from distal to ostium of left subclavian artery to aortic bifurcation, proximal, mid right common iliac artery. No significant extension of dissection to aortic arch/cephalad branches of aorta seen. Marked luminal irregularity with associated thrombus formation seen in anterior aspect of descending thoracic aorta in relation to false lumen. Multiple penetrating aortic ulcers seen in descending thoracic aorta.

Conclusion

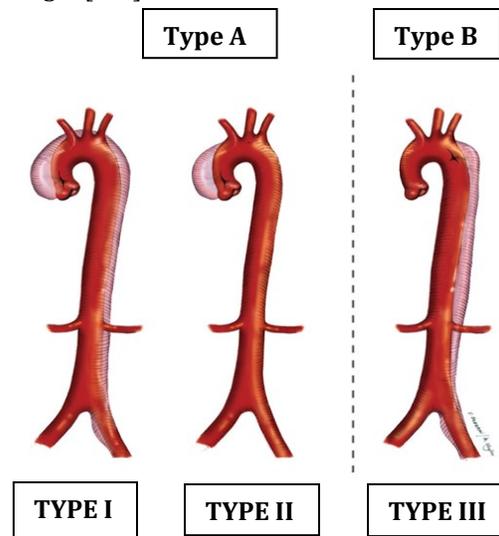
Aortic dissection is condition which is diagnosed with high index of suspicion. Left sided pleural effusion is seen more commonly with it. But aortic dissection presenting as right sided pleural effusion in a non-hypertensive patient is very rare and hence presenting this case.

Discussion

Aortic dissection is uncommon, a high index of suspicion for acute aortic dissection must be kept in mind when evaluating patients with unexplained chest or back pain or a syndrome complex compatible with this diagnosis. Immediate recognition of dissection and timely institution of medical and/or surgical therapy are necessary for improved survival. Descending aortic dissection more commonly seen in

older individuals, with a peak at 60 to 70 years of age.³

Two major classifications for aortic dissection-The DeBakey classification and the Stanford classification-are based on the location of the dissection. The DeBakey classification divides dissections into types I, II, and III. Type I dissections originate in the ascending aorta and extend at least to the aortic arch and often to the descending aorta-frequently all the way to the iliac arteries. Type II dissections involve the ascending aorta alone. Type III dissections begin in the descending aorta, usually just distal to the left subclavian artery, and may be classified further according to whether the dissection stops above the diaphragm [IIIa] or extends below the diaphragm [IIIb].



Aortic dissection may lead to a left-sided pleural effusion in approximately 20% of cases, usually related to an inflammatory response. Acute hemothorax may occur as a result of rupture, contained rupture, or leakage associated with aortic dissection. Pleural effusion in patients with Acute B type Aortic dissection (ABAD), with a reported incidence of between 9% and 88%. Inflammation is thought to be the underlying cause and inflammatory markers such as white blood cell count, serum C-reactive protein (CRP) concentration and body temperature may play a role in their development after acute dissections. Other causes may be congestive heart failure, renal failure, hypoalbuminaemia, infection, atelectasis and malignancy.

The apparent importance of laterality is intriguing, and could be explained by a local inflammatory response arising on the side closest to the descending aorta. Accumulation of an effusion on

the left might be more strongly affected by fibrinolysis in the adjacent aorta. In contrast, systemic parameters such as the concentrations of haemoglobin, serum CRP and albumin levels were associated with bilateral effusion volume. The propensity for pleural effusions to accumulate on the left may be due to a greater influence of aortic dilatation and local fibrinolytic events. These findings suggest that multiple mechanisms may underlie the development of pleural effusion in AAD.² Rupture of aortic dissection has high mortality of more than 50%. The important factors that predispose to aortic dissection are systemic hypertension³ and which is absent in our case. Other factors include cystic medial necrosis, Marfan syndrome, congenital aortic valve anomalies (e.g., bicuspid valve) and aortic trauma.³

References

1. Shamim S, Thakur SB, Sengupta A, Bhattacharyya SK, Sit N. Dissecting aneurysm of arch and descending thoracic aorta presenting as a left sided hemorrhagic pleural effusion. *Lung India* 2010; 27(4): 244–246.
2. Mann, Zipes, Libby, Bonow. *Braunwald's Heart Disease a Textbook of Cardiovascular Medicine*. 10th Edition. Philadelphia. John FKennedy Elsevier Publication 2015.
3. Yoshihiro Y, Jun T, Shintaro N, Takatoshi K, Takaaki S, Shigeyuki N. Clinical implications of pleural effusion in patients with acute type B aortic dissection. *Eur Heart J Acute Cardiovasc Care* 2016;5(7): 72–81.