Case Report

Syphilitic Non Ascending Aortic Aneurysm-Case Report


Department of Cardiology, Sri Jayadeva Institute of Cardiovascular Sciences and Research, India

Abstract

Thoracoabdominal aneurysms are an important cardiovascular disease. They are a complex disease with both genetic and environmental factors contributing to the disease process, which involves formation, growth, and rupture. Difficult surgical challenges not only because of the magnitude of the surgery but also the propensity of patients to develop renal and spinal cord dysfunction after repair. We report case of Thoracoabdominal aneurysm who presented with Dyspnoea on exertion, chest pain and back pain since 4 months. Patient was planned for surgical repair of the aneurysm.

CASE PRESENTATION

A 42 year old male patient, presented with chest pain, back pain and dyspnoea on exertion since 4 months. No history of fever, neck stiffness and neurological deficits. On examination, prominent epigastric pulsations are seen. Routine investigations were normal. HIV and connective tissue profile was normal. ECG done was showing normal sinus rhythm. Chest X-Ray revealed mediastinal widening. Echocardiography showed aneurismal descending thoracic and abdominal aorta, normal cardiac chambers and valves with normal LV function.

CT- Aortogram showed a large aneurysm involving distal descending thoracic aorta, proximal abdominal aorta with maximum dimensions measuring 11.4 X 14.4 cm. Sclerosis and scalloping of descending thoracic vertebra was seen. Suspicious vertebral draping was seen suggestive of contained leak. Left atrium is effaced and antero-superiorly displaced by the aneurysm. Ostium of the celiac artery was occluded. Mild heterogeneity was seen in relation to right psoas muscle sequelae of contained leak. Bilateral pleural effusion was seen (left > right). Patient was planned for surgical repair of the aneurysm.

Patient on further investigation was found to be VIRAL hepatitis - C positive, HCV RNA viral load revealed high and VDRL positive. TPHA test done for syphilis was also positive. Microhemagglutination assay (MHA-TP). The MHA-TP test was positive. Patient was managed conservatively. Benzathine penicillin G 2.4 million units Intramuscularly (IM) was given. Patient was having chronic history of symptoms for 4 months and was haemodynamically stable during hospital stay. Options of endovascular and surgical treatment were discussed with patient’s relatives; but they were opted to surgical repair.

A day before planning for the surgery, patient complained of severe chest pain, back pain and collapsed. Patient could not be revived due to rupture of the aneurysm.

DISCUSSION

Anatomically the thoracic aorta is divided into several distinct segments. The ascending aorta extends from the left ventricle (at the aortic annulus) and rises in the anterior mediastinum to the innominate artery. The portion of the ascending aorta above the root is narrower and tubular in shape. Distal to the ascending aorta is the aortic arch, which moves posteriorly and to the left in the superior mediastinum, extending from the innominate artery to the ostium of the left subclavian artery. Thereafter, the descending aorta courses posteriorly, adjacent to the vertebral column, and continues to the level of the diaphragm, after which it becomes the abdominal aorta [1].

Cardiovascular syphilitic infection has nearly disappeared in developed countries, although it remains a differential diagnosis in developing countries. Even in the developing countries, tertiary syphilis complicated with aortic aneurysm is rare in this era of early use of highly effective management [2]. Review of literatures was reported increase in cases of cardiovascular syphilis in patients with HIV infection (Figure 1A, 1B).

Syphilitic aortitis is reported in 70-80% of untreated cases after the primary infection, and in 10% of these patients, significant cardiovascular complications will occur, such as aortic...
aneurysm, aortic regurgitation and coronary ostia stenosis [3]. The ascending aorta is the segment most commonly affected (50%), followed by the arch (35%) and the descending aorta (15%). Ascending aorta has rich lymphatic supply that may predispose to greater meso aortitis which is believed to be the cause for larger involvement of this segment [4].

Cardiovascular syphilis is a late form of syphilis, which usually manifests in the 4th-5th decade of life, typically 5–40 years after the primary infection. Syphilitic aortic aneurysm may become symptomatic with thoracic pain or symptoms of compression of the surrounding structures. It can enlarge asymptotically until incidental finding in a chest X-ray or a fatal aneurysmal rupture. Without surgical treatment, the mortality rate at 1 year can reach 80% due to the high rate of rupture of these aneurysms [5].

The primary lesion of cardiovascular syphilis is aortitis, an inflammatory response to the invasion of the aortic wall by the *Treponemapallidum* [6]. Inflammation of the aorta is associated with the tertiary stage of syphilis infection. Syphilitic aortitis begins as inflammation of the outermost layer of the blood vessel, including the vasa vasorum that supply the aorta itself with blood. As aortitis worsens, the vasa vasorum undergo hyperplastic thickening of their walls thereby restricting blood flow and causing ischemia of the outer two-thirds of the aortic wall leading to loss of elastic support and dilation of the vessel. Dissection of the aortic arch is rare in syphilitic aortitis due to scarring of tunica media (Figure 2A, 2B).

The rarity of this aetiology makes the diagnosis difficult. In late syphilis, non-treponemal tests like VDRL test and rapid plasma reagin test are less sensitive (71–73%), when compared with treponema-specific tests such as TPHA, micro-haemagglutination test, fluorescent treponemal antibody absorption test (94–96%) [7]. Syphilitic serological testing is advised in younger patients with aortic aneurysm [8]. According to Kuramochi et al., serologic proved syphilis is necessary to make the diagnosis of syphilitic aortitis, the histologic findings of mesoaortitis by itself is not diagnostic. CT angiogram is the best imaging study to define the size and anatomy of the aneurysm. In the setting of an aneurysm, the echocardiogram and coronary angiogram are mandatory to exclude aortic regurgitation and coronary flow-limiting lesions [9].

Medical therapy for cardiovascular syphilis includes injection Benzathine penicillin 2.4 Million units IM once a week for 3 weeks. The definitive treatment of aortic aneurysm is surgical repair. The simultaneous presence of aortic regurgitation or significant coronary disease should be surgically treated at the same time [10].

Our case report is interesting because syphilis causing aneurysm of descending thoracic aorta and abdominal aorta without involvement of ascending aorta and aortic valve is very rare. There is only one case report of syphillis causing thoraco-abdominal aneurysm has been reported in the literature to the best of our knowledge by Gayathri et al. [11]. Hepatitis C virus can cause aortitis, but we could not find any case reports showing aortic aneurysm caused by hepatitis-C unless complicated by vasculitis.

**CONCLUSION**

Treatment of severe syphilitic aneurysm is surgical repair. The diagnosis and treatment of patients with descending thoracic or thoracoabdominal aortic aneurysms have improved with advances in technology. Because the risk of rupture, surgical treatment should be considered in all patients with aneurysmal disease. Medical treatment of CVS syphilis includes Injection benzathine penicillin-G 2.4 million units IM weekly once for 3 weeks. The advent of endovascular technology has significantly advanced to manage complex descending thoracic and thoracoabdominal aortic aneurysms in high risk patients.

**REFERENCES**


Cite this article