

Cardiovascular syphilis complicated by Lower thoracic and upper abdominal aneurysm – A rare case report

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Abstract

A 50-year-old male presented with left lower abdominal pain, visible pulsation below xiphoid process, and tenderness in the left iliac fossa for the past 10 days. Chest X-ray revealed blunting of left cardiophrenic angle. Echocardiogram revealed descending thoracic aortic pseudoaneurysm. Contrast-enhanced computed tomography of the chest and abdomen revealed dissecting aneurysm of lower thoracic and upper abdominal aorta. Thoracoabdominal aortogram revealed erosion of D12 vertebra and infected aneurysm of adjacent thoracoabdominal aorta. Serum venereal disease research laboratory assay was positive in 1:4 dilution *Treponema pallidum* hemagglutination assay was positive. The patient was treated with Injection procaine penicillin for 20 days under cover of steroids. Cerebrospinal fluid analysis was normal. Aortic aneurysm repair with reconstruction was done. Histopathology was in favor of syphilitic etiology. This case is being presented as descending thoracic and upper abdominal aortic aneurysm due to syphilis complicated by dissection and erosion of vertebral body is rare and has not been reported nowadays to the best of our knowledge.

Key words: Abdominal aorta aneurysm, aneurysm, cardiovascular syphilis

INTRODUCTION

The incidence of cardiovascular syphilis (CVS) in cases of late untreated syphilis is 10%. The interval between infection and cardiovascular involvement is 10–40 years. Three main categories of CVS syphilis are syphilis of heart, great vessels, and medium-sized arteries. Aortic involvement by syphilis can present as uncomplicated aortitis, coronary ostial stenosis, aortic regurgitation, and aortic aneurysm.^[1] Ascending aorta is the most common segment affected (50%) followed by arch (35%) and descending aorta (15%).^[2] Abdominal aneurysm is mostly due to atheromatous etiology. Although a few cases of syphilitic aneurysm

have been reported in developing countries, descending thoracic and upper abdominal aortic aneurysm due to syphilis is very rare and has not been reported in the past decade, to the best of our knowledge. Here, we report this rare case of CVS syphilis complicated by lower thoracic and upper abdominal aortic aneurysm with dissection, peripheral thrombus formation, and erosion of vertebral body.

CASE REPORT

A 50-year-old male, a known smoker and alcoholic, presented with complaints of left lower abdominal

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How to cite this article: Gayathri K, Shankar SV, Venkatesan S, Kalaivani S. Cardiovascular syphilis complicated by Lower thoracic and upper abdominal aneurysm – A rare case report. Indian J Sex Transm Dis 2016;37:75-7.

Access this article online

Quick Response Code:



Website:

www.ijstd.org

DOI:

10.4103/0253-7184.180295

pain for past 10 days. Pain was insidious in onset, gradually increased in severity, continuous, pricking type, and radiated to back and both shoulders. No history of genital ulcer or skin rashes has been reported in the past. His last marital contact was 1 month back. Patient denies pre- and extra-marital contact. There was no history of hypertension, diabetes mellitus, atherosclerosis, coronary artery disease, and peripheral vascular disease in the past.

On examination, his general condition was stable. His general and systemic examination was normal. Peripheral arterial pulses were normal and equivocal on both sides. There was visible pulsation below xiphoid process. Tenderness was present in the left iliac fossa. No audible murmur was detected on CVS examination. Genital and dermatological examination was normal and did not reveal any signs of syphilis.

On investigation, hematological and biochemical parameters were normal. Chest radiograph revealed blunting of cardiophrenic angle on the left side [Figure 1]. Electrocardiogram revealed sinus bradycardia and normal axis. Echocardiogram revealed descending thoracic aortic pseudoaneurysm.

Contrast-enhanced computed tomography of the chest and abdomen revealed aneurysmal dilatation of lower thoracic and upper abdominal aorta from D9 to origin of coeliac trunk. Dissection was noted in aorta at D9 to D12 level with false lumen showing peripheral thrombus and erosion of D12 Vertebra [Figure 2].

Thoracoabdominal aortogram revealed well-enhancing saccular outpouching having a broad neck seen arising from posterior wall of thoracoabdominal aorta. The neck is opposite to D11 and D12 vertebral bodies with lower border at the level of coeliac artery origin. The sac along with surrounding inflammatory tissue and hematoma was seen from D10 to D11 level. There is lytic destruction of anterior vertebral body and adjacent endplates of D10 and D11 vertebra with surrounding sclerosis and reduction in height of D11 vertebral body, erosion of D12 vertebra, and infected aneurysm of adjacent thoracoabdominal aorta [Figure 3].

Serum venereal disease research laboratory test was positive in 1:4 dilution. *Treponema pallidum* hemagglutination assay was positive. Cerebrospinal fluid analysis was normal. Patient treated with injection procaine penicillin 12 lakh units intramuscularly (IM) once daily after test dose for 20 days undercover of oral steroids. Aortic



Figure 1: X-ray revealing blunting of left cardiophrenic angle



Figure 2: Contrast-enhanced computed tomography of the chest and abdomen revealed aneurysmal dilatation of lower thoracic and upper abdominal aorta from D9 to origin of coeliac trunk. Dissection noted at D9 to D12 level with erosion of D12

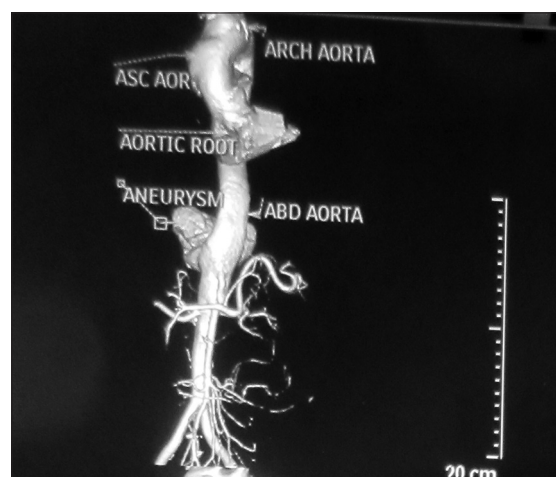


Figure 3: Thoracoabdominal aortogram revealed well-enhancing saccular outpouching having a broad neck seen arising from posterior wall of thoracoabdominal aorta

aneurysm resection with reconstruction was done. Histopathology revealed elastic tissue degeneration

of media and replacement with fibrous tissue, intima shows thinning. Adventitia shows thickening and fibrosis. Vessel wall shows lymphocytes and plasma cell infiltration. Thus, the histopathology is more in favor of syphilitic etiology. Patient has been discharged after surgery and is now on follow-up.

DISCUSSION

CVS manifests in 10% cases of late untreated syphilis. It is more common in men than in women. Its incidence is higher in those whose occupation involves heavy physical work. The interval from infection to the first sign of the disease is 10–40 years. At the time of diagnosis, reagin tests are positive in 90% cases. Specific test is positive in nearly all cases.^[1] In this era of early use of highly effective antibiotics, CVS syphilis has become rare. Aorta is the most common artery to be involved by syphilis. Aneurysm indicates marked degree of dilatation of aorta. The swelling may be fusiform or saccular in shape. Saccular aneurysm is more common than fusiform aneurysm. A saccular aneurysm may be connected to the aorta by a broad or narrow orifice. Fusiform aneurysm results from gross dilatation of one segment of aorta. The ascending aorta is the most common site of aneurysm due to syphilis. Aneurysm of descending thoracic aorta is rare. It is usually symptomless. Symptoms of deep-seated and continuous pain in the back, boring in character, may result from pressure on the body of thoracic vertebrae. Occasionally severe erosion leads to spinal cord involvement. Rupture of aneurysm at this site is rare. Rupture into various structures and obstructive pneumonia are common causes of death.^[3]

Aneurysm of abdominal aneurysm due to syphilis is rarer than thoracic aorta involvement. Patient may complain of pain in the abdomen or back, worse

at night, but relieved by change in position. It is prudent to rule out neurosyphilis in all cases of CVS syphilis as concomitant infection is found in 43% of cases.

Definitive treatment of aneurysm includes surgical treatment which involves resection of dilated portion of aorta and replacing with synthetic vascular grafts.^[4] Medical treatment of CVS syphilis includes Injection benzathine penicillin-G 2.4 million units IM weekly once for 3 weeks. Alternatively, procaine penicillin 12 lakh units IM for 20 days can be used. In penicillin-allergic patients, desensitization can be done. Other drugs include tetracycline 500 mg 4 times a day for 30 days, erythromycin 500 mg 4 times a day for 30 days, and doxycycline 200 mg daily for 30 days. This is a case of descending thoracic and upper abdominal aortic aneurysm due to syphilis with dissection and thrombus formation. This case is being presented for its rarity as CVS syphilis itself is a rare manifestation in this era of early usage of antibiotics and, in this case, descending thoracic and upper abdominal aortic aneurysm due to syphilis is rarer.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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