

A rare case of syphilitic abdominal aortic aneurysm: A case report from Ethiopia

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Abstract

Introduction

With the widespread use of antibiotics, syphilitic aneurysm has become rare but left untreated it can lead to serious complications including spontaneous rupture. The ascending aorta and transverse aortic arch are the commonly affected areas.

Case summary

We present A case of a 50-year-old male who presented with bilateral flank pain of 4 months who was found to have an infra-renal abdominal aortic aneurysm on imaging and serology revealed a positive results for syphilis.

Conclusion

Despite being considered a rare entity syphilitic aneurysms should still be considered in the differential diagnosis of aortic aneurysms

Key clinical message

In the modern era, syphilitic aneurysm is rare and its occurrence might be confused with more common causes of aneurysm such as atherosclerosis. We want to elucidate that it can still be a cause and raise awareness among medical professionals as early diagnosis and treatment can prevent catastrophic complications.

Key words

Syphilis, Syphilitic aneurysm, Syphilitic aortitis, abdominal aortic aneurysm, Infectious disease

Abbreviations

AAA- Abdominal aortic aneurysm

CDC- Center for disease control and prevention

RPR- Rapid plasma reagin

TPHA- Treponema pallidum hemagglutination assay

VDRL- Venereal disease research laboratory

Introduction

With the widespread use of antibiotics prevalence of late manifestations of syphilis has become rare, uncomplicated syphilitic aortitis can occur in 70-80% of untreated cases with complications including aortic regurgitation, coronary ostial stenosis and aortic aneurysms occurring in 10%, aneurysms may form over 15-30 years [1,2]. Serological testing is useful in diagnosis and untreated it can lead to serious complications [3].

The ascending aorta and transverse aortic arch are the two areas most commonly affected which might be due to the rich lymphatic networks in these segments. Treatment includes early antibiotic therapy and surgery [4]. There aren't many reports of syphilitic aneurysm in Africa and in Ethiopia.

Case Presentation

History

A 50-year-old male presented with bilateral flank pain of 4 months duration, which was dull aching and radiates to the rest of the abdomen. He also had loss of appetite, intermittent vomiting and easy fatigability. He was a smoker 12.5 pack year for more than 25 years and chewed khat on a daily basis but stopped 7 months prior to his presentation. He drank locally made alcohol (2-3 cups of Tela) occasionally during weekends. He had no history of sexually transmitted diseases and stated he practiced safe intercourse.

Examination

His vital signs are stable except for hypertension BP=145/98 .There were no pertinent findings on cardiovascular system . His abdomen was flat, soft, moved with respiration and diffuse tenderness all over the abdomen was noted butno organomegaly, sign of fluid collection or pulsatile mass. He also had no physical signs suggestive of Marfan syndrome or other connective tissue disorders.

Methods

3.2 Investigations

Laboratory work up revealed mild hypernatremia and elevated creatinine which was gradually subsiding to baseline attributed to contrast associated nephropathy. He came with abdominal ultrasound showing renal parenchymal disease and AAA which was confirmed with a contrast enhanced abdominal CT that showed a thrombosed saccular infra-renal AAA measuring 5.4

cm in its maximum transverse diameter with mass effect and stenosis of the left renal artery, small smooth left kidney with delayed enhancement and excretion secondary to left renal artery stenosis. Chest x-ray was unremarkable.

Echocardiography didn't show cardiac abnormalities, but the AAA with intraluminal thrombosis was noted.

Figure : Abdominal CT angiography

3.2 Differential diagnosis

Considered differential diagnosis include atherosclerotic and syphilitic aneurysm and workup was only remarkable for a positive syphilis screening test with reactive VDRL & RPR that was confirmed with a positive TPHA, he tested negative for HIV. The patient was diagnosed with tertiary cardiovascular syphilis and a decision was made to treat the aneurysm surgically as soon as possible because its growth could potentially rupture and risk the patient's life.

Treatment and follow up

He was surgically managed with aneurysmorrhaphy and thrombus evacuation, the aneurysmal section was resected and replaced with Dacron graft. The first dose of 2.4 million/unit IM Penicillin-G was given to be continued for 3 doses. He had a smooth postoperative condition and was doing well on 6 months post operative follow-up

Discussion

Tertiary syphilis, a non-contagious form, is nowadays rare in the industrialized world. The earliest report of syphilis in Ethiopia dates to 1968 which found 16% of patients visiting cardiovascular clinics were having cardiovascular syphilis. [5] Recent pooled prevalence is 1.35% with higher prevalence in HIV patients (9.4%). [6]

In the pre-antibiotic era cardiovascular syphilis occurred in 1/3 of untreated patients 10-40 years following primary infection with 10% having cardiovascular, 7% neurosyphilis and 16% gummas. [7] Spirochetes have predilection towards small vessels of vasa-vasorum supplying media and adventitia leading to end arteritis, patchy loss of elastic tissue, fibrous replacement and small microgummas may be visualized within the media. The affected intima thickens over areas of necrosis with intervening segments of wrinkling giving a "tree bark" appearance [1,8,9]

Syphilitic aneurysms commonly occur in ascending aorta (50%), aortic arch (30%), descending aorta (15%) and abdominal aorta in 5%. Most aneurysms are saccular and less commonly fusiform. [3]

The diagnosis of tertiary syphilis may be difficult because clinical features may be similar with other granulomatous disease and serologic titers specially the nontreponemal one could be low or negative [10, 11]. The approach of using treponemal test as screening test, first described in 2008 by the US CDC is gaining popularity because it can detect syphilis in some patients with syphilis who would not have been identified if a nontreponemal test was used initially. However, it results in higher rate of false positivity as well. [12, 13] To settle the diagnosis of confirmed cardiovascular tertiary syphilis, on top of a clinically compatible case it requires either identification of treponemes in tissue sections with silver or immunohistochemical staining or detection of *T. palladium* DNA in tissue with PCR. Our patient had positive serologic tests in the background of an abdominal aneurysm and no classic risk factors for atherosclerotic aneurysm like diabetes, hypertension or obesity which makes syphilitic aneurysm highly likely. [14] A possible limitation is that we did not have a histologic confirmation which may not be mandatory since mesoaortitis by itself is not diagnostic in the absence of serology. [15] Many case reports clinically diagnosed syphilitic aneurysm with an appropriate clinical presentation and high serum TPHA. [14, 16]

Cardiovascular syphilis left untreated it can lead to rupture of aneurysm, coronary ostial necrosis with sudden death and embolization. [3] Treatment of syphilitic AAA involves medical treatment with intramuscular penicillin and surgical intervention. Symptomatic AAA (abdominal, back, flank pain and limb ischemia) has increased risk of aneurysmal rupture, hence most require repair. Urgent or emergent repair is indicated for patients with ruptured AAA and symptomatic non ruptured AAA, provided the risk of repair is not prohibitive. [17, 18]

Conclusion

In industrialized countries specific treatment and use of antibiotics in treatment of other infections has made tertiary syphilis rare, except for the cases of neurologic involvement in HIV infected patients. However there are few case reports of syphilitic aortic abdominal aneurysm and syphilis should be considered in patient presenting with aortic aneurysm and no other identified risk factor for development of aneurysm.

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Author contributions

Feryat L. :Data curation; resources, writing - original draft

Beka A. :Conceptualization, data curation, supervision

Sebhatleab T. :Data curation, resources, writing- review and editing

Elias T. :Conceptualization, writing – review and editing

Eskedar F. : Data curation, resources and validation

Conflict of Interests

Authors have no conflict of interest.

Approval of the research protocol by an institutional review board

Not applicable

Informed Consent

Written informed consent was taken from the patient for the publication of the case report.

Registry and the registration number of the trial

Not applicable

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Figure : Abdominal CT angiography

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