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Who is the culprit: Is it syphilis or is it hypertension. A case of acute aortic dissection

***Corresponding Author:** Shahmeer Lodhi*

Email: shahmeer.lodhi@ttuhsc.edu

Shahmeer Lodhi

TTUHSC Permian Basin, Midland, Texas, USA.

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Introduction

Although uncommon, Aortic Dissection (AD) is one of the late complications of syphilitic heart disease. Presentations may vary, but diagnosis is often incidental.

Case presentation

A 53-year-old woman with a history of hypertension, hyperlipidemia, active smoking, treated syphilis, and type 2 diabetes presented with sudden stabbing chest pain lasting an hour, radiating to the back and accompanied by nausea. On arrival, she was hypertensive (174/91). Laboratories were unremarkable, except for elevated D-dimer, 5.71 mcg/mL. Electrocardiogram showed nonspecific ST changes, and Computed Tomography (CT) angiogram revealed no pulmonary embolism but indicated potential acute aortitis or intramural hematoma. Subsequent CT scans confirmed intramural hematoma and type B dissection of the thoracic aorta.

A positive rapid plasma regain and Treponema pallidum antibody test suggested aortitis, leading to the initiation of benzathine penicillin and prednisolone. Initial treatment included intravenous labetalol drip to maintain systolic blood pressure <120 mmHg. Prednisolone was later discontinued, as repeated imaging showed no evidence of aortitis. Carotid duplex indicated moderate stenosis in left internal carotid artery, while other evaluations, including fundoscopy, CT head, and echocardiogram, showed no significant abnormalities. Vascular surgery advised switching to esmolol drip for blood pressure control, and cardiology suggested adjusting oral antihypertensives. The patient received 6 days of benzathine penicillin during admission. Discharge after 7 days with resolution of symptoms.

Discussion

In this case report, we describe the treatment of aortic dissection in a patient with a known history of hypertension and multiple treatments for syphilis. Syphilitic cardiovascular infection usually causes aortitis, which is the primary symptom, but it's rare for it to cause tertiary-stage infections that lead to aortic aneurysms in the modern age. However, an aortic aneurysm is present in about 71% of patients with syphilitic aortitis, according to a review by Drago et al. Hypertension is one of the most common causes of AD in males above 50 years of age. However, our patient did not show any other complications of hypertension that would indicate hypertension-induced AD. Although our patient showed aortitis on the initial imaging done through CTA, on repeat imaging-CT Chest, this finding was not reported. Histologic and laboratory data are typically combined to diagnose syphilitic aortitis, although instances of negative laboratory testing have been documented. According to Heggtveit, the ascending aorta accounts for 50% of aortic aneurysm

development in patients with syphilitic aortitis, followed by the aortic arch for 35%, and the descending aorta for 15%. Clinical manifestations vary depending on the aortic segment involved and are frequently atypical. Patients may go years without experiencing any symptoms. Imaging methods can also serve as the basis for a clinical diagnosis. Common findings on computed tomography angiography imaging include a fusiform aneurysm with a pattern of saccular projections, focal, crescentic intramural hematomas, and frequently a peripheral connection with an intercostal or lumbar artery. Our patient didn't undergo any histologic investigation since the AD was medically managed, and so the cause being syphilis wasn't confirmed. However, its role as an uncommon cause of this presentation cannot be ruled out.

This case report describes the treatment of aortic dissection in a patient with a known history of hypertension, who has also been treated multiple times for syphilis. The primary symptom of a syphilitic cardiovascular infection is aortitis; however, tertiary-stage infections that cause aortic aneurysms are extremely rare in the modern age [1]. An aortic aneurysm is present in about 71% of patients with syphilitic aortitis, according to a review by Drago et al., [2]. Hypertension is one of the commonest causes of AD although its more common in males and patient aged above 50yrs, our patient in this study did not have any other complication of hypertension that would point towards hypertension induced AD. Initial imaging done CTA revealed aortitis, however on repeat imaging-CT Chest, this finding was not reported.

Although instances of negative laboratory testing have been documented, histologic and laboratory data are typically combined to diagnose syphilitic aortitis [3]. According to Heggtveit, among patients with syphilitic aortitis, the ascending aorta accounted for 50% of aortic aneurysm development, followed by the aortic arch for 35% and the descending aorta for 15% [4]. Clinical manifestations vary depending on the aortic segment involved and are frequently atypical. Patients may go years without experiencing any symptoms [5]. Imaging methods can also serve as the basis for a clinical diagnosis. A fusiform aneurysm with a pattern of saccular projections, focal, crescentic intramural hematomas, and frequently a peripheral connection with an intercostal or lumbar artery are among the common findings on computed tomography angiography imaging. Our patient did not undergo any histologic investigation as the AD was medically managed, and so the etiology being syphilis wasn't finalized, its role as an uncommon cause of this presentation cannot be ruled out.

Conclusion

Aortic dissection is a common entity that has a variety of causes, when two plausible factors coexist, especially a common etiology and an uncommon etiology like syphilis, extensive evaluation needs to be done to properly evaluate the patients. Close lifelong surveillance is necessary due to the possibility of disease progression.

References

1. Roberts WC, Barbin CM, Weissenborn MR, Ko JM, Henry AC. Syphilis as a cause of thoracic aortic aneurysm. *Am J Cardiol.* 2015; 116: 1298–1303.

2. Drago F, Merlo G, Rebora A, Parodi A. Syphilitic aortitis and its complications in the modern era. *G Ital Dermatol Venereol.* 2018; 153: 698–706.

3. Roberts WC, Ko JM, Vowels TJ. Natural history of syphilitic aortitis. *Am J Cardiol.* 2009; 104: 1578–1587.

4. Heggtveit H. Syphilitic aortitis: a clinicopathologic autopsy study of 100 cases, 1950 to 1960. *Circulation*. 1964; 29: 346–355.

5. Bilman V, Bertoglio L, Melissano G, Chiesa R. Contained rupture of an aortic arch aneurysm in a patient with syphilitic aortitis. A case report. J Vasc Bras. 2022; 20: e20210160.