An Unusual Case of Epigastric and Back Pain
Expanding Descending Thoracic Aneurysm Resulting From Tertiary Syphilis Diagnosed With Positron Emission Tomography

Paola De Rango, MD, PhD; Giuseppe Vittorio De Socio, MD, PhD; Valeria Silvestri, MD; Gioele Simonte, MD; Fabio Verzini, MD, PhD, FEBVS

A 63-year-old African woman immigrated to Europe presented to our hospital with increasing epigastric pain radiating to back, unresponsive to proton-pump inhibitors, lasting for a week. There was no nausea, vomiting, diarrhea, or fever. History was positive for diabetes mellitus, hypertension, and previously treated pulmonary tuberculosis. On examination, the patient was afebrile, and there was no lymphadenopathy. Amylase and lipase levels were normal, whereas erythrocyte sedimentation rate (120 mm/h) and C-reactive protein (14 mg/dL) were increased. Superior endoscopy showed normal findings; abdominal ultrasound was negative. Computed tomography (CT) angiography revealed a 10x23-mm saccular aneurysm of thoracic aorta (D9 level) with localized dissection and thickening of the aortic wall (Figure 1). There was lymph node enlargement at hilum and along bronchopulmonary, thoracic, and lumbosacral chains. Apical pleural thickness and multiple calcifications, findings of previous pulmonary tuberculosis, were detected. Fluorine-18 fluorodeoxyglucose positron emission tomography–CT showed marked radiotracer enhancement at the periaortic level D8 to D9 (Figure 1). These findings of increased glucose metabolic activity were indicative of inflammatory aortic process (aortitis). Full serological tests were performed. Gram staining and acid-fast stain of the sputum did not show evidence of organisms. Two sets of blood cultures and urine cultures to prompt early diagnosis of syphilitic aneurysms, and the most important examination relies on syphilitic serology. Positive treponemal assays and fluorine-18 fluorodeoxyglucose positron emission tomography–CT findings of mycotic aneurysm allowed presumptive diagnosis of syphilis aneurysm in this woman despite the infrequent location and the lack of other features of tertiary syphilis. Negative serology and acid-fast stain did not show evidence of organisms. Two sets of blood cultures and urine cultures, as well as HIV test, were negative. Syphilis serology revealed rapid plasma reagin titer of 1:4, with IgM negative, a positive fluorescent treponemal antibody test, and treponema pallidum particle agglutination assay titer of 1:320. Antibiotic therapy, starting before stent grafting, and careful surveillance with serology and CT angiography evaluation after repair, are required. Syphilis serological screening is still important to rule out the disease in Western countries, especially in the presence of increased erythrocyte sedimentation rate and C-reactive protein values and fluorodeoxyglucose positron emission tomography–CT angiography imaging suggestive of mycotic aneurysms.

Disclosures

None.

References


**Key Words**: aneurysm, aortic aneurysm, thoracic aortitis, syphilis, cardiovascular

---

**Figure 1.** Computed tomography angiography scan: axial and 3-dimensional reconstruction revealing a saccular aneurysm of thoracic aorta at D9 level with localized dissection. H indicates head; F, foot; L, lateral; and P, posterior.

**Figure 2.** Thoracic aortic stent graft (angiography).

**Figure 3.** Computed tomography angiography (CTA) imaging follow-up after 4 months (B) compared with preoperative CTA scan (A).

**Figure 4.** Pathogenesis of syphilis aneurysms.
An Unusual Case of Epigastric and Back Pain: Expanding Descending Thoracic Aneurysm Resulting From Tertiary Syphilis Diagnosed With Positron Emission Tomography
Paola De Rango, Giuseppe Vittorio De Socio, Valeria Silvestri, Gioele Simone and Fabio Verzini

doi: 10.1161/CIRCIMAGING.113.001136

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circimaging.ahajournals.org/content/6/6/1120