A 37-year-old man presented to our department complaining of severe chest pain triggered by the slightest physical exercise. The symptoms appeared 6 months previously and have gradually worsened. His medical history was unremarkable, and he had no cardiovascular risk factors except smoking. A 6-lead ECG at rest was normal, as was the chest x-ray. The ultrasonography examination revealed severe aortic regurgitation and a moderately enlarged left ventricle with normal systolic function. The treadmill test was positive for myocardial ischemia. He subsequently underwent a catheter examination that diagnosed severe right and left main coronary ostial stenoses along with severe aortic valve incompetence (Figure 1A and 1B). A computed tomographic examination confirmed these findings (Figure 1C and 1D), revealing an ascending aorta with a maximum transverse diameter of 3.5 cm, an irregular intima, and a thickened wall (6 mm) (Figure 1C). He was referred for urgent replacement of the aortic valve and triple total arterial coronary bypass.

At surgery, the ascending aorta had a hyperemic, inflammatory adventitia that adhered firmly to the surrounding structures. Cross-clamping revealed a markedly thickened wall, with extensive longitudinal wrinkling all the way into the aortic root, deforming and narrowing the coronary ostia (Figure 2). The aortic valve leaflets were thickened and retracted, resulting in severe, central incompetence. Aortic valve replacement with a 25-mm mechanical prosthesis and a triple total arterial coronary bypass with the use of the radial and both internal thoracic...
arteries was performed. The pathological examination revealed
endarteritis obliterans of the vasa vasorum, a chronic inflamma-
tory infiltrate in the medial layer with disruption of the elastic
fibers, and a severely thickened intima (Figure 3A and 3B). See
the online-only Data Supplement for additional information. A
Venereal Disease Research Laboratory test was performed and
was intensely positive, as was the Treponema pallidum hemagglu-
tination test. For further confirmation, we attempted to
identify treponemal DNA in the pathological sample by means
of the polymerase chain reaction. However, this test did not
reveal traces of living treponemal spirochetes. The patient had an
uneventful recovery and was treated with 2.4 million units of
intramuscular benzathine penicillin G for 3 weeks. Subsequent
testing remained negative at 1 year. The patient is followed up
by periodic computed tomography scans to detect any enlarge-
ment of the thoracic aorta.

Discussion
Better sexual education and treatment have contributed to a
marked reduction in the incidence of syphilis. However,
migration of the workforce in a globalized world, drug use,
and sexual promiscuity have created conditions for sexually
transmitted diseases to recur.

Untreated syphilis can reach the tertiary phase with cardio-
vascular and neurological manifestations. The classic clinical
symptom is that of an ascending aortic aneurysm that is typically
large and saccular. Progression may lead to erosion of the
sternum, pseudoaneurysm formation, or outright dissection.
Intramural hematoma of the ascending aorta has also been
described recently in this context. The pathological hallmark is
endarteritis obliterans of the vasa vasorum with a chronic
inflammatory infiltrate, ischemic necrosis, and fibrosis of the
medial layer. Scarring of the aortic media leads to longitudinal
wrinkling of the aortic wall (tree barking); however, extension
of the disease into the aortic root with coronary ostial stenosis
appears to occur in a minority of cases. Tree barking of the
ascending aorta is also seen in systemic lupus erythematosus and
other systemic inflammatory diseases. Aortic valve regurgita-
tion results from inflammation, fibrosis, and retraction of the
cusps as well as from dilatation of the sinotubular junction. Death is
a consequence of aortic wall rupture, chronic heart failure, cerebro-
vascular accidents, or acute myocardial infarction.

Definitive diagnosis of tertiary syphilis is based on indirect
(Venereal Disease Research Laboratory test) or direct (Trepon-
ema pallidum hemagglutination test) methods. Identification
of living spirochetes by polymerase chain reaction in tissue
samples of patients has been described recently; however,
the sensitivity of this method appears to be low.

Tertiary syphilis remains a diagnosis to be considered in
patients with aortic pathology, especially if it is associated
with coronary ostial stenosis with a normal coronary bed.

Disclosures
None.

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