A 57-year-old man presented to the emergency department with an 8-day history of abdominal and suprapubic pain radiating in the back associated with fever (38.6°C), myalgia, and a painful rectal examination. A treatment with ofloxacin had been prescribed for a suspected prostatitis. His past medical history included overweight and current cigarette smoking (30 pack-year). Clinical examination found a tense and non-pulsatile abdomen without nausea or vomiting. On auscultation, he had an abdominal vascular murmur.

Computed tomography angiography performed on day 1 revealed a moderate aneurysmal dilation of the infrarenal abdominal aorta with a maximal diameter of 25 mm along with a thickened wall, a periaortic infiltration, and thrombus (Figure 1A). Biological investigations revealed an elevated leukocyte count (14780/mm³ with 92.5% neutrophils) and a high C-reactive protein level (256.4 mg/L), but no serological evidence for syphilis, HIV, hepatitis B or C infections, and negative standard bacterial and mycobacterial blood cultures. The persistence of abdominal pain and biological inflammation led to that performance of a new computed tomography angiography on day 4. It revealed an enlargement of the aneurysm (34 mm) and aortocaval lymphadenopathies (Figure 1B); these findings were suggestive of an infective aortitis. Then, we switched the antibiotic regimen to intravenous piperacillin-tazobactam (12–1.5g/d) and ciprofloxacin (2.5 g/d). Histological examination of the excised aorta with an abscess formation along with a thickened discontinuous aortic wall enhanced after contrast injection (Figure 3A and 3B). Another computed tomography angiography performed on the same day confirmed these findings; the maximal diameter and length were increased (42×87 mm) (Figures 1C, 4A, and 4B). Surgery went well on day 19, consisting of an open repair of the infrarenal abdominal aorta with a straight Dacron tube. Ciprofloxacin was changed to intravenous vancomycin (2.5 g/d). Histological examination of the excised aorta showed an abscess of the aortic wall, marked atherosclerosis with necrosis and calcified plaques, fresh thrombus, and enlarged lymph nodes (Figure 5A and 5B). Nine days after surgery, we observed a major reduction of biological inflammation (leukocyte count reduced to 7410/mm³ and C-reactive protein markedly reduced to 11.7 mg/L). Although bacterial culture of the aortic wall remained negative, a sequence of Haemophilus influenzae was obtained after amplification of 16S rDNA. Antibiotherapy was then switched to oral amoxicillin-clavulanic acid (3 g to 375 mg/d) and ofloxacin (600 mg/d) for 1 month.

Infected (mycotic) aneurysms of the descending aorta attributable to H influenzae are an uncommon, but a life-threatening condition, because these aneurysms tend to grow rapidly and thus rupture. In our case, the final diagnosis was delayed because blood cultures performed after the initiation of antibiotics were negative. The diagnosis of infected aneurysm was suspected from the rapid growth on imaging and finally confirmed by identification of H influenzae 16S rDNA on the aortic wall. Although ≈90% of atherosclerotic aneurysms are located in the infrarenal aorta, only one-third of infected aneurysms are found in this location. Regarding treatment, an alternative to open surgery could be endovascular ultrasound on day 18 that revealed an irregular thrombus with a multiloculated hypoecogenic image within, suggesting an abscess formation along with a thickened discontinuous aortic wall enhanced after contrast injection (Figure 3A and 3B). Another computed tomography angiography performed on the same day confirmed these findings; the maximal diameter and length were increased (42×87 mm) (Figures 1C, 4A, and 4B). Surgery went well on day 19, consisting of an open repair of the infrarenal abdominal aorta with a straight Dacron tube. Ciprofloxacin was changed to intravenous vancomycin (2.5 g/d). Histological examination of the excised aorta showed an abscess of the aortic wall, marked atherosclerosis with necrosis and calcified plaques, fresh thrombus, and enlarged lymph nodes (Figure 5A and 5B). Nine days after surgery, we observed a major reduction of biological inflammation (leukocyte count reduced to 7410/mm³ and C-reactive protein markedly reduced to 11.7 mg/L). Although bacterial culture of the aortic wall remained negative, a sequence of Haemophilus influenzae was obtained after amplification of 16S rDNA. Antibiotherapy was then switched to oral amoxicillin-clavulanic acid (3 g to 375 mg/d) and ofloxacin (600 mg/d) for 1 month.

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aortic repair associated with antibiotics; indeed, a recent European multicenter study showed that endovascular aortic repair of mycotic aortic aneurysms was a feasible and durable treatment option. However, this latter option needs to establish diagnosis before the procedure, which is not always possible, and the outcome of endograft placement in an unsuspected mycotic aneurysm may be unfavorable.

Consensus guidelines on bacterial aneurysms are still needed to provide diagnostic criteria and the choice of adapted therapeutic strategies according to clinical presentation and imaging findings.

Disclosures

None.

References


Figure 1. Thoracic computed tomography angiography showing the growth of an infrarenal abdominal aortic aneurysm along with a peri-aortic infiltration and a thrombus from 25 mm on day 1 (A, arrow) to 34 mm on day 4 related to an enlargement of the thrombus (B, arrow) and with a maximal diameter increased to 42 mm on day 18 (C, arrow).

Figure 2. A positron emission tomography scan on day 9 visualized a FDG uptake of the periaortic fat and the aortic wall in axial section (A) extending over an 8-cm longitudinal section (B). FDG indicates fluorodeoxyglucose.
Figure 3. Abdominal ultrasound revealed on day 18 an irregular thrombus (A, cross) with a multiloculated hypoechogenic image along with a thickened discontinuous aortic wall enhanced after contrast injection (B, arrow).

Figure 4. Computed tomography angiography reconstruction of the aneurysmal dilation of the infrarenal abdominal aorta with a maximal diameter and length of 42×87 mm (A, arrow) along with an irregular thrombus (B, arrow).

Figure 5. Microscopic section of the excised aorta showing suppurative atherosclerotic plaque. A, Hematoxylin and eosin ×1.2 aortic aneurysm with fibrin deposition (cross) and periaortic lymph node (arrow). B, Hematoxylin and eosin ×100 suppurative (polynuclear neutrophil, cross) atherosclerotic plaque (cholesterol crystals, arrow).
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