Alba Palacios [a,*], Ana M. Llorente [a], Olga Ordóñez [a], Ana Martínez de Aragón [b]

[a] *Unidad de Cuidados Intensivos Pediátricos, Departamento de Pediatría, Hospital Universitario 12 de Octubre, Madrid, Spain*
[b] *Neurorradiología Pediátrica, Servicio de Radiodiagnóstico, Hospital Universitario 12 de Octubre, Madrid, Spain*

* Corresponding author.
E-mail addresses: alba_palacios@hotmail.com, alba.palacios@salud.madrid.org (A. Palacios).

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Mycotic abdominal aortic aneurysm due to *Listeria monocytogenes*☆

Aneurisma micótico abdominal debido a Listeria monocytogenes

Listeria monocytogenes is a rare pathogen that principally affects neonates, pregnant women and immunosuppressed patients. It most commonly causes gastroenteritis in healthy adults and central nervous system infection in immunosuppressed patients. Cardiovascular infection due to *Listeria monocytogenes* is rare and tends to cause endocarditis.[1] This article presents the case of a mycotic aortic aneurysm due to *Listeria monocytogenes*.

A 76-year-old man with a history of hypertension, type 2 diabetes mellitus, dyslipidaemia and ischaemic heart disease attended the emergency department following 2 months of general discomfort, hyporexia, low back pain and 7 kg weight loss in the previous 2 weeks. The patient was afebrile and the physical examination revealed no significant findings. The vascular examination found distal pulses in both lower limbs. Bloods were normal, except for blood glucose at 460 mg/dl. The chest and abdominal X-rays were normal. After normalising the patient's blood glucose levels, he was discharged and referred to internal medicine with a diagnosis of constitutional syndrome to be investigated.

Internal medicine ordered a computed tomography scan (CT scan), which revealed an infrarenal saccular aortic aneurysm. He was admitted to the vascular surgery department, where a CT angiography confirmed the presence of aortic pseudoaneurysm on the left anterolateral side, 8 mm below the renal arteries.

Surgery was performed, with resection and placement of a straight graft (20 mm Silver Graft). Repeat blood cultures taken 6 and 3 days before surgery were negative and afebrile, and a transthoracic echocardiogram found no valve vegetation. An arterial tissue sample was taken during the surgery and sent to Microbiology. The culture in blood agar and chocolate agar showed growth of greyish colonies with beta-haemolysis, identified by Bruker® MALDI-TOF mass spectrometry as *Listeria monocytogenes* with a score of 2.2. The infectious diseases department started intravenous treatment with ampicillin 2 g/4 h and gentamicin 240 mg/24 h. Gentamicin was suspended after 2 weeks, while intravenous ampicillin was maintained for one further week. Sequential therapy was then started with oral amoxicillin 1 g/8 h and the patient was discharged, continuing treatment at home for 3 more weeks. Patient outcome was satisfactory, remaining asymptomatic one year after surgery.

Mycotic aortic aneurysms account for just 1–3% of all aortic aneurysms and may manifest in a previously healthy aorta, although the presence of a prior aneurysm has been reported to be a predisposing factor.[2] The microorganisms most commonly involved are *Salmonella* spp., *Streptococcus* spp. and *Staphylococcus* spp.[3] Aneurysms infected by *Listeria monocytogenes* are very rare.[4] This Gram-positive bacillus is usually transmitted through food. As the main infection pathway is the ingestion of contaminated food, it tends to produce self-limiting symptoms of gastroenteritis in healthy subjects.[5] In rare cases, predominantly in immunosuppressed or elderly patients, it can lead to severe conditions such as sepsis, central nervous system infections and endocarditis.[6] Nevertheless, cases have been reported in immunocompetent patients, and in the case presented here, the only immune deficiency was diabetes mellitus.

Diagnosis is established by contrast CT scan, together with *Listeria monocytogenes* isolation in blood cultures or arterial tissue biopsy.[4] Blood cultures are negative in more than 50% of cases, while the pathogen is isolated in the biopsy in more than 75% of patients.[7] In our case, the blood cultures were negative and *Listeria monocytogenes* was only isolated in the arterial tissue culture extracted during surgery.

The best therapeutic option is the combination of surgery (usually excision of the infected aorta segment and placement of an aortic prosthesis or graft), and prolonged antibiotic therapy.[4] Ampicillin continues to be the treatment of choice, although trimethoprim-sulfamethoxazole, erythromycin, vancomycin or rifampicin are also appropriate treatment options. Treatment duration has not been fully established, but at least 6 weeks is recommended as recurrences have been reported in up to 15% of patients.[5] The outcome of our patient was favourable 12 months after undergoing surgery and receiving intravenous ampicillin and gentamicin, followed by oral amoxicillin for a total of 6 weeks of treatment.

Finally, while excision and replacement by aortic prosthesis or aortic homograft is the most commonly-used procedure, use of endovascular prosthesis is also widely reported in the literature. Most of these cases are elderly patients with significant comorbidity or suprarenal involvement from South-east Asia (the majority involving *Salmonella* spp.). These cases go against the traditional "axiom" of not placing prosthetic material in sites of infection.[8,9]

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Elena Laín Miranda [a,*], Isabel Ferrer Cerón [a], Desiré Gil Pérez [b], M. José Revillo Pinilla [a]

[a] *Servicio de Microbiología, Hospital Universitario Miguel Servet, Zaragoza, Spain*
[b] *Servicio de Infecciosos, Hospital Universitario Miguel Servet, Zaragoza, Spain*

* Corresponding author.
E-mail address: elenalainm@gmail.com (E. Laín Miranda).

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