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Time-series changes in an infected aortic aneurysm treated only with antimicrobials

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A 71-year-old man hospitalized for aspiration pneumonia developed fever (38 ℃) and hypotension on hospital day 22. He received regular hemodialysis for diabetic nephropathy. Physical examination, laboratory tests, and computed tomography (CT) did not reveal the etiology of the fever; however, blood cultures identified Klebsiella aerogenes. Doripenem (DRPM) was commenced, with subsequent negative blood cultures. Repeated febrile episodes with negative blood cultures required empiric therapy with DRPM or vancomycin. On hospital day 55, he developed septic shock and K. aerogenes was isolated again. Despite no aortic abnormality on day 34 (Fig. 1A), CT on day 69 revealed a 29-mm aneurysm in the aortic arch (Fig. 1B) despite defervescence 12 days after DRPM initiation; thus, infected aortic aneurysm was diagnosed. Although antimicrobial therapy with complete surgical excision of the infected aorta is recommended, surgery was not possible due to his poor general condition and underlying comorbidities; thus, he was treated with antimicrobials alone. Treatment was switched to cefepime according to antimicrobial susceptibility. Regular follow-up blood cultures tested negative; however, CT showed that the aneurysm size had increased from 30 (day 76) to 42 mm (day 90) (Fig. 1C). Subsequently, he developed hoarseness and dysphagia probably caused by recurrent laryngeal nerve paralysis related to aneurysm enlargement. Two months after initiating antimicrobials, CT revealed that the aneurysm size remained stable with increase in mural thrombi (Fig. 1D). He was transferred to another hospital on day 151 without rupturing the aneurysm and will receive life-long oral antimicrobials.

Infected aortic aneurysms are rare, especially in the thoracic aorta, and associated with high mortality. Aneurysm-related mortality rate with medical treatment alone was reported as 11%– 67%

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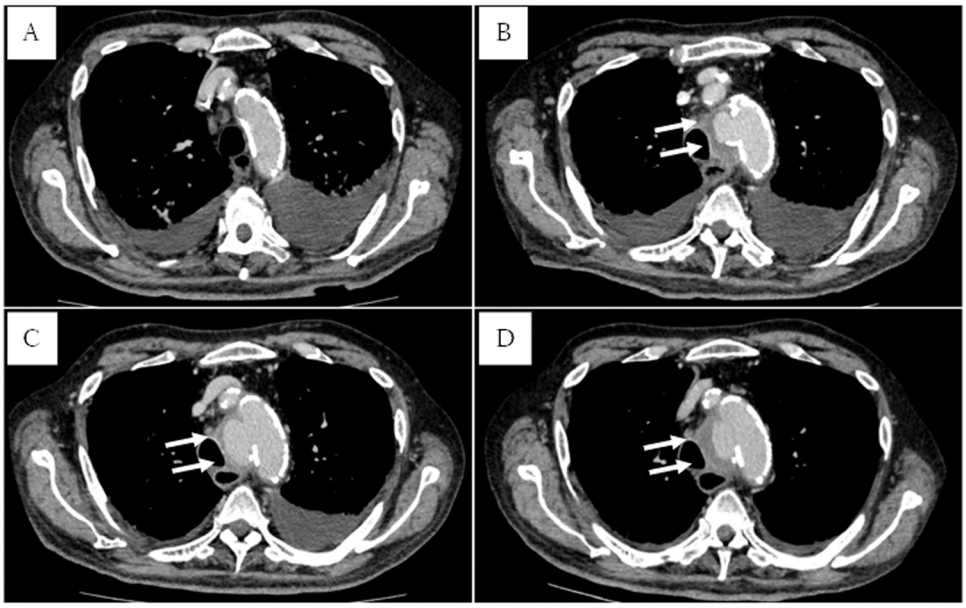

Fig. 1. Contrast-enhanced computed tomography findings, A: Day 34, no aortic abnormality, B: Day 68, 29-mm aneurysm in the aortic arch, C: Day 90, aortic aneurysm increased in size (42 mm), D: Day 111, slight enlargement of the aneurysm (44 mm) and increase in mural thrombi.

for whole aorta and 57% for thoracic aorta [1,2]. Diagnosis is challenging and once made, surgery is usually performed, but the speed of growth and natural course without surgery remain unclear.

Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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Consent

We obtained the patient consent from the patient for publication of this case report and accompanying image.

CRediT authorship contribution statement

YS wrote the first draft of the manuscript. KF and MK modified and reviewed the manuscript. NM supervised and revised the manuscript. All authors approved the final manuscript.

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