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A rare cardiovascular cause of fever of unknown origin: Infected thoracal aortic aneurysm

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SOUHRN

Aortitida může vyvolat horečku neznámého původu. Vyšetření pacientů prokazuje přítomnost sepse. Pokud jsme nedokázali určit její příčinu, zvažovali jsme použití transthorakální echokardiografie, která však obtížně prokazuje postižení sestupné aorty. Proto je vhodné u pacientů s aortitidou mít na paměti možnost diagnostiky pomocí CT angiografie.

Popisujeme případ pacienta, který byl dopraven do naší nemocnice se sepsí. Vyšetření odhalilo přítomnost sakulárního aneurysmatu, periaortálního abscesu a nahromadění vzduchu v oblasti hrudní aorty v důsledku infekce gram-pozitivní bakterií *Staphylococcus aureus*.

ABSTRACT

Aortitis can cause fever of unknown origin. Those affected patients had presented with sepsis. It is an important consideration that when we could not identify the origin of transthoracic echocardiography. However, it is difficult to be revealed of descending aorta by transthoracic echocardiography. Therefore computed tomography angiography may be kept in mind for diagnosis in patients with aortitis. We report a patient presenting to our hospital with sepsis and detected a saccular aneurysm and periaortic abscess and air collection in thoracal aorta due to *Staphylococcus aureus*.

Case presentation

A 73-year-old man was admitted to emergency department with fever and palpitation. His past medical history included diabetes mellitus, hypertension and mild coronary artery disease. Temperature was 38.2 °C with pulse of 110/min. His physical examination was unremarkable except mental confusion and hypotension,102/68 mmHg. There was no heart murmur and he had no hepatomegaly or splenomegaly. His lung examination included decreased respiratory soundsat right basal segment. Electrocardiography revealed atrial fibrillation with rapid ventricular response. Chest radiography showed cardiomegaly and pleural effusion in right lung. On admission laboratory studies included a white blood cell count of 23 K/μL (4.8–10.8 K/μL, neutrophils = 75%, lymphocytes = 24% and monocytes = 0.8%), and his platelet count was 321 K/μL (150–400 K/μL). Serum transaminases and electrolytes were normal. C-reactive protein was 457 mg/L ($n \leq 5.0$ mg/L). Serum ferritin level was 1 425 ng/ml (23–33 ng/ml). Transthoracic echocardiography revealed normal systolic function, mild diastolic dysfunction and mild mitral regurgitation. He had no vegetation or abscess in his heart. Blood cultures

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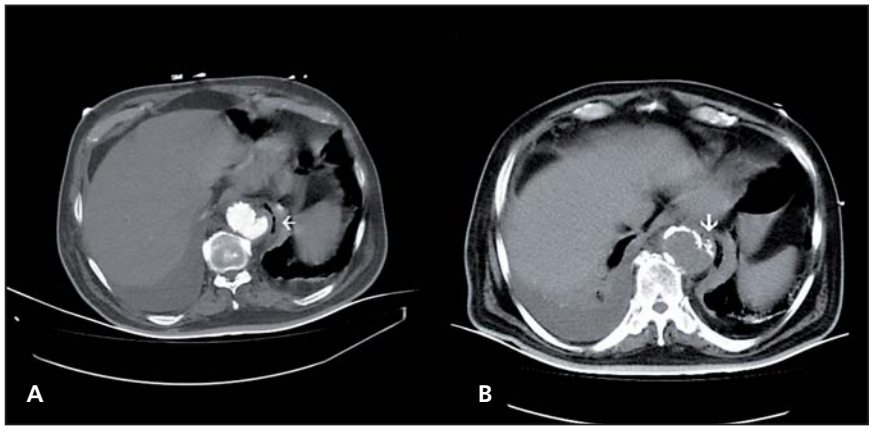

Fig. 1 – Computed tomography angiography of the thoracal aorta demonstrating saccular aneurysm with associated periaortic inflammation and air collection (arrow) suggestive of aortic abscess (A). On non-contrast CT image, the aneurysm is surrounded by atherosclerotic calcific plaque and the plaque (arrow) replace to periaortic tissue suggestive of rupture (B). CT – computed tomography.

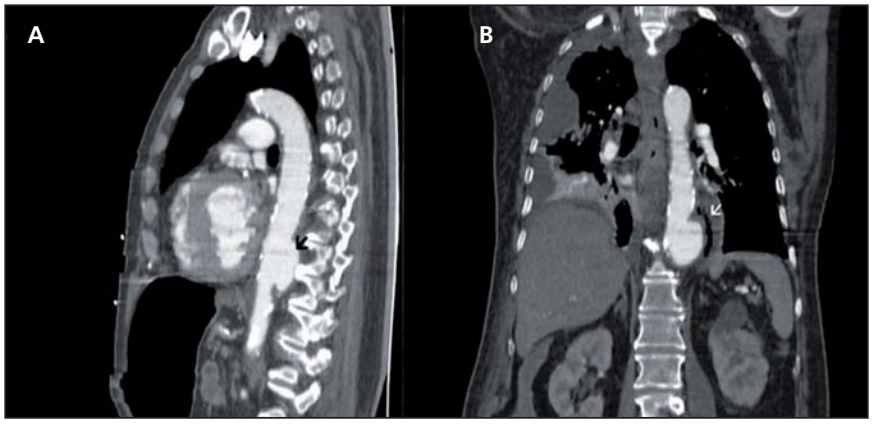

Fig. 2 – Computed tomography angiography sagittal maximum intensity projection showing a large saccular aneurysm at diaphragmatic level of thoracal aorta (A, black arrow) and coronal images reveal periaortic air collection and inflammation (B, white arrow).

were drawn and moxifloxacin was prescribed empirically. Methicillin-sensitive *Staphylococcus aureus* has detected in the blood culture. We continued the same antibiotic regimen according to antibiogram.

Computed tomography (CT) angiography was planned for search the origin of bacteraemia. CT angiography on day 3 revealed thoracal aortic saccular aneurysm at diaphragm level with a maximal diameters of 41×21 mm (craniacaudal x transfers) along with associated periaortic inflammation and air collection near the aneurysm due to abscess (Fig. 1A). The aneurysm is surrounded by atherosclerotic calcific plaque and the plaque replace to periaortic tissue suggestive of rupture (Fig. 1B). Sagital and coronal images revealed similar findings (Fig. 2). Besides the patient was deteriorated and he rapidly died of multiple organ failure on the same day. The patient's relatives did not accept the autopsy. These findings were suggestive of an infected thoracal aortic aneurysm rupture as a cause of the patient's death.

Transthoracic echocardiography may be insufficient to diagnosis in patients with suspected thoracoabdominal aortitis due to the anatomical away. These patients must be evaluated with advance imaging methods as CT angiography, magnetic resonance imaging. As a result aortitis may be kept in mind as a cause of fever of unknown origin.

Conflict of interest
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