

Mycotic aneurysm of the descending aorta due to *Aspergillus* species

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Introduction

Mycotic aneurysms of the aorta are rare, and carry a poor prognosis unless detected and treated promptly [1]. Aneurysms caused by *Aspergillus* species usually occur due to invasive pulmonary aspergillosis, septic embolisation or direct extension from the lung, mainly in immuno-compromised individuals [2]. We report a case of descending aortic aneurysm caused by *Aspergillus* species in a previously immuno-competent individual.

Case report

A 45-year old previously healthy man complained of episodic fever for four weeks and sudden onset weakness of the left lower limb. He had a history of risky sexual behaviour and occasional inhalation of cannabis. He was pale and had gangrene of toes of the left foot. There was grade 4/5 weakness of the left lower limb with normal reflexes. He was afebrile and haemodynamically stable, with no organomegaly or lymphadenopathy.

Erythrocyte sedimentation rate was 146 mm/first hour. Haemoglobin was 8.4 g/dl and total leukocyte count was $20 \times 10^6/\mu\text{l}$ with 82% neutrophils. Platelet count was $785 \times 10^6/\mu\text{l}$. Blood picture was suggestive of a bacterial infection. Urine showed a trace of protein with 5-6 pus cells per high power field. Blood culture was sterile. Echocardiography showed no evidence of infective endocarditis, but the descending aorta was dilated (3.8 cm). CT scan of the head showed a right internal capsule infarct compatible with the left lower limb weakness. Renal and liver function and chest radiography were normal. Sputum for acid fast bacilli, Mantoux test and HIV serology were negative.

The patient was treated with intravenous ceftriaxone but his general condition deteriorated. Systemic vasculitis causing monoplegia and aneurysmal dilatation of the aorta was suspected and high dose prednisolone was started after temporal artery biopsy. After five days of immunosuppressant therapy, the patient developed hypotension and shortness of breath and died. Pathological post-mortem showed a ruptured thoracic aorta due to a mycotic aneurysm (Figure) and acute pyelonephritis with abscess formation.

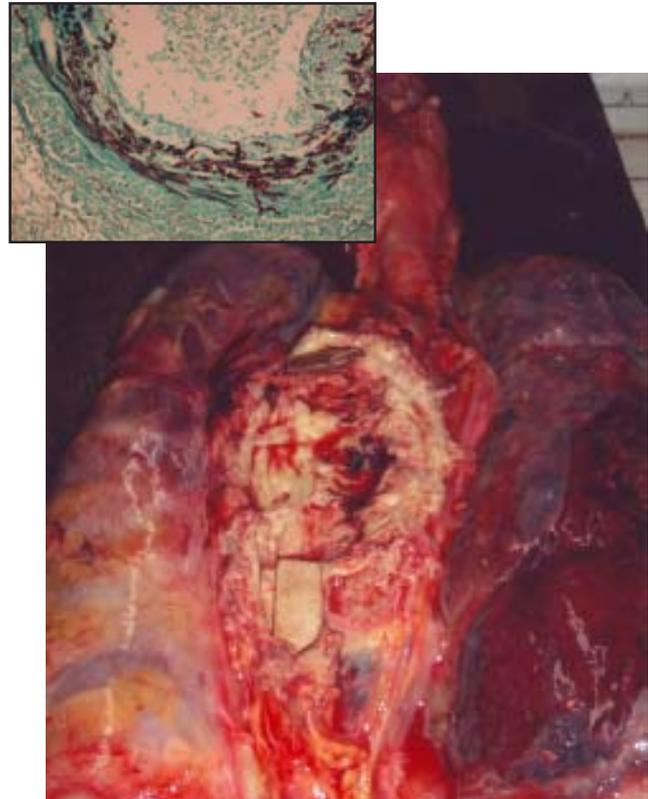


Figure. The ruptured mycotic aneurysm. Inset: Vessel wall invaded by *Aspergillus* fungal hyphae (Growth stain).

Discussion

Mycotic aneurysms can arise from a wide variety of clinical causes. The aorta is most often affected, but such aneurysms may arise in any artery [3]. Mycotic aneurysms are classified as primary when there is direct extension from a surrounding area of infection, secondary when due to septic embolisation, and cryptogenic or de novo when the cause is unknown [1].

'Mycotic' by definition is a disease caused by a fungus. A permanent dilatation of the aorta due to fungal infection is conventionally referred to as a 'mycotic aneurysm'. However, such an aneurysm may occur due to non-fungal organisms as well [3]. Aortic aneurysms caused by *Aspergillus* species are rare and usually occur due to

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invasive pulmonary aspergillosis, septic embolisation or direct extension from the lungs [2]. Ascending aorta or the aortic arch are the most likely locations [1]. *Aspergillus fumigatus* is isolated more frequently, mainly affecting patients on immuno-suppressant therapy [4].

Clinical features of a mycotic aortic aneurysm are non-specific and can vary from septicaemia to manifestations secondary to distal embolisation. The diagnosis requires a high clinical suspicion, given its rarity and the presence of vague symptoms [5].

When clinically apparent, infected aneurysms are often at an advanced stage of development or are associated with complications such as rupture. Non-treatment or delayed treatment of infected aneurysms has a poor outcome, due to fulminant sepsis or haemorrhage. Multi-detector computed tomography and magnetic resonance imaging have replaced conventional angiography as minimally invasive techniques for detection of infected aneurysms [6]. The treatment of a mycotic aneurysm is wide resection of the infected aorta and grafting followed by long term antifungal treatment. However, hospital mortality rate following surgery approaches 40% [7]. Endovascular stent-graft repair can be performed in selected cases. In our patient oral prednisolone given to treat a suspected vasculitis probably aggravated the undetected fungal infection, leading to rupture of the aneurysm. Why our patient became immuno-

compromised to develop disseminated Aspergillosis remains unclear.

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