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Aortic composite tube valve graft infection due to *Streptococcus pneumoniae*

Shirt title: Aortic tube infection due to *S. pneumoniae*

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Introduction

A case of an ascending aortic graft infection by *S. pneumoniae* (and the first to survive the redo procedure) is presented. The expressiveness of the PET/CT scan was determinant in indicating the need for surgical treatment

Text

A 67 year-old man, who had undergone a composite tube valve graft 10 years previously (Carbomedics Carbo-Seal ®, CTV), was admitted with a three-day history of high fever. Physical examination was normal. After 48 hours of admission *Streptococcus pneumoniae* was isolated in blood cultures. Neither transthoracic echocardiography nor transesophageal echocardiogram showed valve vegetations. A PET-CT with 18F-fluorodeoxyglucose showed abnormal high intensity uptake (SUV 11.5) around the vascular prosthesis (Figure). A chest CT showed a periaortic collection of 6.6 cm x 4.9 cm with outer wall enhancement after intravenous contrast, the collection extended between the proximal and distal anastomoses of the CTV (Figure). The patient underwent surgical debridement of all purulent collection and his old CTV was replaced with a new # 32 CTV (Carbomedics Carboseal). The coronary buttons were re-implanted by means of two end-to-side independent tube-grafts (Dacron Hemashield, 8 mm). Treatment was completed with ceftriaxone 2g IV daily for 6 weeks with a good clinical outcome.

Infection of a vascular graft in the ascending aorta has a low incidence (0.9-1.9%), episodes occur a median of 10 months after surgery and have a high mortality rate [1]. To our knowledge, this is the second case of an ascending aortic graft infection by *S. pneumoniae* (and the first to survive the redo procedure) [2]. In both cases the tube graft had been implanted a few years earlier, indicating that the infection developed after subsequent bacteremia. The role of the PET/CT in ascertaining the infection should be emphasized. In our patient, the expressiveness of the findings was determinant in indicating the need for surgical treatment since all areas of actual inflammation were clearly marked [2].

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Disclosures

We do not have any conflict of interest to disclose.

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Figure . High resolution contrast enhanced CT (1), ¹⁸F-FDG PET (2) and fusion images (3). Sagittal (a), transaxial (b) and coronal thoracic views showed a periaortic collection of 6.6 cm x 4.9 cm extending between the proximal and distal anastomoses of the vascular prosthesis with enhancement of the outer wall (native aorta). PET images showed abnormal high intensity uptake surrounding the aortic territory, and fusion images confirmed the inflammation activity limited to the outer wall of the collection.