



## Medical Imagery

Infective aortitis and subacute myocarditis due to *Campylobacter fetus*

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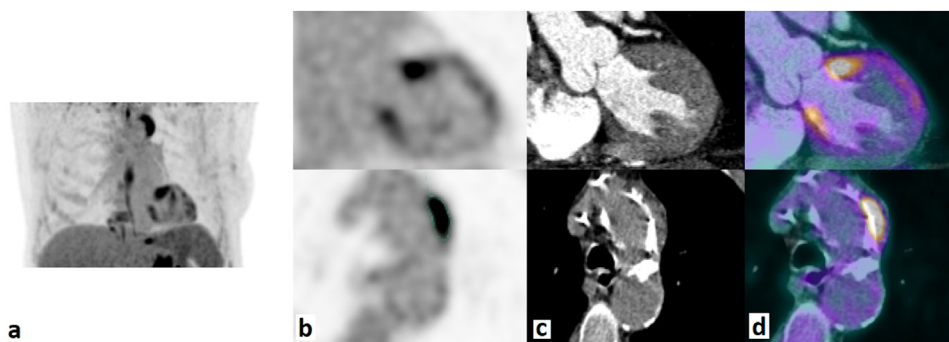
Aortitis

Myocarditis

Bacteremia

A 79-year-old woman on chemotherapy for lung cancer was admitted for abdominal pain and diarrhea. Blood cultures became positive for *Campylobacter fetus* after 4 days, and imipenem was started. Despite clinical improvement, repeated blood cultures showed persistent bacteremia. Positron Emission Tomography/Computed Tomography revealed focal hypermetabolism of the aortic arch and the left ventricle bases (Figure 1). Echocardiography and cardiac enzymes were unremarkable. Given the suspected

myocardial involvement, intravenous gentamycin was added but interrupted after 1 week due to toxicity. Imipenem was switched to high-dose intravenous amoxicillin, based on antibiogram susceptibilities, for 6 weeks in total. Weekly follow-up imaging revealed a rapidly growing aortic mycotic aneurysm, warranting elective surgical repair. Five months following treatment interruption, she had no clinical or radiological (Positron Emission Tomography/Computed tomography) sign of active infection. Persistent



**Figure 1.** <sup>18</sup>F-FDG PET/CT images showing pathological myocardial uptake of the left ventricle and of the aortic wall evocative of mycotic aneurysm: (a) MIP <sup>18</sup>F-FDG PET images, (b) <sup>18</sup>F-FDG PET image, (c) contrast-enhanced CT images on top and low-dose CT image on bottom, and (d) fused <sup>18</sup>F-FDG PET and CT images (coronal and axial slice views on top and bottom respectively). PET-CT, positron emission tomography.

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bacteremia due to *C. fetus* is rare and mainly affects immunocompromised hosts [1]. While aortitis is a common complication [2], myocarditis is extremely rare and its mechanism has yet to be elucidated [3]. Although evidence for myocarditis treatment is lacking, combination therapy for  $\geq 6$  weeks is recommended for complicated forms (e.g. endocarditis), along with aortic surgery when indicated [4]. Prognosis is poorer in the presence of an aortic aneurysm, and relapsing infection can occur, even years after the initial diagnosis [5].

#### Declaration of Competing Interest

The authors have no competing interests to declare.

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#### Ethical approval statement

Written informed consent was obtained from the patient.

#### Author contributions

Anaëlle Lenherr drafted the manuscript. Sarah Boughdad, John O.Prior and Marie Nicod Lalonde reviewed all the radiological images and prepared the figure. Paraskevas Filippidis conceptualized and supervised the project, and revised the first and final drafts of the manuscript. All authors were involved in patient care, and critically revised, read and approved the manuscript.

#### References

- [1] Wagenaar JA, van Bergen MA, Blaser MJ, Tauxe RV, Newell DG, van Putten JP. Campylobacter fetus infections in humans: exposure and disease. *Clin Infect Dis* 2014;**58**:1579–86. doi:10.1093/cid/ciu085.
- [2] Sprenger H, Zechner EL, Gorkiewicz G. So close and yet so far - Molecular Microbiology of Campylobacter fetus subspecies. *Eur J Microbiol Immunol (Bp)* 2012;**2**:66–75. doi:10.1556/EuJMI.2.2012.1.10.
- [3] Uzoigwe C. Campylobacter infections of the pericardium and myocardium. *Clin Microbiol Infect* 2005;**11**:253–5. doi:10.1111/j.1469-0691.2004.01028.x.
- [4] Lopes RJ, Almeida J, Dias PJ, Pinho P, Maciel MJ. Infectious thoracic aortitis: a literature review. *Clin Cardiol* 2009;**32**:488–90. doi:10.1002/clc.20578.
- [5] Tu ZC, Gaudreau C, Blaser MJ. Mechanisms underlying Campylobacter fetus pathogenesis in humans: surface-layer protein variation in relapsing infections. *J Infect Dis* 2005;**191**:2082–9. doi:10.1086/430349.