



## Case study

## Lactobacillus garvieae endocarditis presenting with leg cramps

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## ABSTRACT

An 85-year-old man with a history of aortic valve replacement presented with lower limb cramps. He was initially diagnosed with degenerative disc disease, but was found to have *Lactococcus garvieae* infective endocarditis with septic embolic strokes causing a central poststroke pain syndrome. Cardiothoracic surgery was deemed too high risk and the patient completed 6 weeks of intravenous antimicrobials as well as prolonged inpatient rehabilitation. *Lactococcus garvieae* is an aquaculture pathogen which typically affects elderly and immunocompromised patients. Atypical presentations of endocarditis in the elderly can lead to delays in diagnosis.

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## Introduction

An interesting case of initial misdiagnosis and eventual diagnosis of atypical presentation of infective endocarditis, leg cramps, with an uncommon bacterium, *Lactobacillus garvieae*, is presented.

## Case report

An 85-year-old man presented with two weeks of anorexia and progressively worsening right lower limb cramps, limiting his function. There was no history of falls or back pain. He had no underlying cognitive impairment or focal neurological deficits, however was in acute urinary retention on arrival. Rectal examination revealed normal anal tone and no saddle anaesthesia. His past medical history included erosive gastritis and critical aortic stenosis requiring emergency balloon valvuloplasty three months prior, followed by definitive transcatheter aortic valve implantation (TAVI). Pre-operative transthoracic echocardiogram unexpectedly revealed a 13 × 10 mm echogenic mass associated with the tricuspid valve, which was attributed to thrombus or vegetation related to temporary pacing wire insertion during aortic valvuloplasty. Blood cultures were negative although oral antimicrobials with amoxicillin/clavulanic acid had been empirically started for an isolated fever the day prior. The patient was treated

for presumptive infective endocarditis (IE) with two weeks of intravenous ampicillin with synergistic gentamicin.

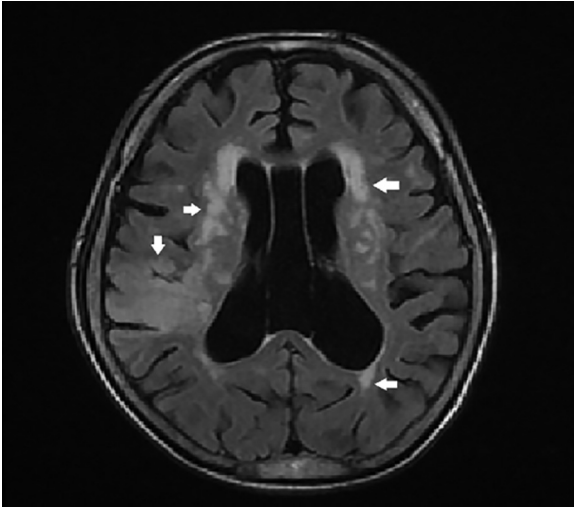
During this current admission, lumbar spondylolisthesis was diagnosed based on magnetic resonance imaging (MRI) of the spine, showing degenerative disc disease with multilevel spondylotic changes. Four days into the admission, he developed a fever (38.6 degrees C), left hemiparesis and slurred speech. MRI brain showed scattered acute infarcts in bilateral hemispheres of varying ages (Fig. 1). One set of blood cultures grew *Lactococcus garvieae* identified by Matrix-assisted laser desorption ionization time-of-flight mass spectrometry (MALDI-TOF MS). His total white blood cell was  $7.12 \times 10^9/L$  ( $3.84\text{--}10.1 \times 10^9/L$ ) with a C-reactive protein level of 65 mg/L (0–10 mg/L). Transthoracic echocardiogram showed a 19 × 11 mm multi-lobulated mass attached to the calcified posterior mitral annulus. The previous tricuspid valve mass was not visualized. The prosthetic aortic valve had no vegetations and functioned normally. The Minimum Inhibitory Concentration (MIC) of penicillin, ceftriaxone and gentamicin was 0.75 mg/L, 0.25 mg/L and 3.0 mg/L respectively (E-test). The patient was treated with six weeks of ceftriaxone successfully and repeat blood cultures were negative for bacterial growth. He was deemed not to be a surgical candidate in view of multiple embolic strokes and required prolonged inpatient rehabilitation.

## Discussion

Our patient presented with leg cramps and anorexia with no septic features, initially diagnosed with lumbar spondylolisthesis. This was later changed to mitral valve *L. garvieae* IE with septic embolic strokes causing a central poststroke pain syndrome (leg cramps).

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**Fig. 1.** MRI Brain showing acute infarct in the right parieto-temporal lobe with multiple smaller foci of infarcts scattered in bilateral parietal, frontal, occipital and temporal lobes including deep white matter.

*Lactococcus garvieae*, a facultative anaerobic gram-positive coccus is a worldwide aquaculture pathogen. It has been recognized as an emerging zoonotic opportunistic pathogen in humans since modern laboratory technologies improved identification [1,2]. Human infection can be associated with the consumption of raw fish and typically occurs in the elderly or immunocompromised hosts. It is hypothesised that *L. garvieae* is acquired through contaminated food ingestion and enters the bloodstream through the gastrointestinal tract [1]. Our patient did not recall eating raw fish but was known to have erosive gastritis. Among the 24 cases of *L. garvieae* IE reported in the literature, 18 (75%) occurred in those who were 60 years and older, and typically had prosthetic heart valves and/or gastrointestinal tract pathology [3]. As with our case, several *L. garvieae* IE cases have reported isolated or no fever [1,3]. This may be attributed to the low pathogenicity of the organism or the fact that elderly patients are known to present with atypical features of infection [4]. Other cases of *L. garvieae* infection include bacteremia, peritonitis, urinary tract infections, and solitary cases of liver abscess, osteomyelitis, spondylodiscitis, cholecystitis, meningitis and

prosthetic joint infection [1]. As there are no established susceptibility breakpoints for *L. garvieae*, most laboratories extrapolate breakpoints from viridians streptococci for treatment.

### Summary points

- 1 Elderly patients present with atypical symptoms which may lead to a delayed diagnosis.
- 2 *Lactococcus garvieae* is recognized as a zoonotic infection in the elderly and immunocompromised host.

### Declarations

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### Author contributions

Seok Mei **Lim** ; Conceptualization, Investigation, Writing – Original Draft, Writing – Review & Editing  
 Beatrix **Wong**, Writing – Review & Editing  
 Gail Brenda **Cross** ; Conceptualization, Investigation, Writing – Review & Editing  
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