

## **Listeriosis: An Atypical Presentation of an Uncommon Disease**

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Dear Editor,

*Listeria monocytogenes* is a Gram positive bacterium found widespread in the environment. Ingestion of contaminated food products such as soft cheese and pâté can lead to infection<sup>1</sup>. Listeriosis is uncommon among the immunocompetent but can cause serious infection in neonates, pregnant women, immunosuppressed patients and the elderly<sup>2</sup>. Invasive disease manifests as meningitis, meningoencephalitis and bacteraemia and can be associated with a significant mortality<sup>3</sup>.

Listeriosis is infrequent in Ireland with only 22 cases reported in 2018, equating to a crude incidence of 0.46 per 100,000 population<sup>4</sup>.

A 63-year-old gentleman presented with self-limiting left-sided facial droop, limb weakness and slurred speech suggestive of transient ischaemic attack. He described general lethargy in the preceding 5 days and had been discharged from another local emergency department after presenting with a shaking episode, which in retrospect may have been a rigor. His presentation had been attributed to seizure activity and blood cultures had not been collected. Medical history was significant for chronic perianal fistula and elevated BMI.

On admission, he was tachycardic but afebrile and normotensive. White cell count was elevated at  $11.3 \times 10^9/L$  and C-reactive protein was 10mg/dL. Lethargy and light-headedness persisted and he denied gastrointestinal disturbance. Investigations included magnetic resonance imaging (MRI) of brain, demonstrating acute infarcts in the right cerebellum, right pons and left occipital lobe.

On day 7 of admission, he became febrile with minimal change in clinical status and minor elevation of inflammatory markers (C-reactive protein 52mg/dl). Blood cultures flagged positive in both bottles with Gram positive bacilli, subsequently identified as *Listeria monocytogenes*, confirmed on repeat blood cultures. On more detailed history, the patient reported large quantities of cream cheese in the 2 weeks prior to initial symptoms, thought to be the most likely source of infection.

A diagnosis of meningoencephalitis was made based on the combination of *Listeria monocytogenes* bacteraemia, neurological symptoms and characteristic MRI findings involving brainstem and cerebellum.

The patient was treated with 21 days of four-hourly amoxicillin 2g IV and 7 days gentamicin (3mg/kg once daily). A repeat MRI brain carried out after 2 weeks treatment showed no evidence of evolving intracranial abscesses. Transoesophageal echocardiogram revealed no valvular vegetations. Serology for human immunodeficiency virus was negative. He remained afebrile with sterile blood cultures after 24 hours of treatment and was discharged well on completion of therapy, with no further complications.

This is an unusual case of a rarely encountered illness. Our patient had no risk factors for invasive disease. In Ireland in 2018, only 4/22 patients with Listeriosis were under 65 years, excluding neonatal and maternal cases, and all had underlying immunosuppression<sup>4</sup>. It is possible that this gentleman's perianal fistula predisposed him to a bacteraemia due to a breach in normal gut mucosa. Despite high mortality rates with meningoencephalitis, this patient remained haemodynamically stable throughout his illness, mounting minimal inflammatory response with few clinical symptoms.

This case highlights the variable presentation of this uncommon infection and the associated diagnostic challenges. It also illustrates the importance of blood culture collection in identifying unusual pathogens.

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