

## Rare Case of *Yersinia Enterocolitica* Causing Infection of a Temporal Venolymphatic Malformation

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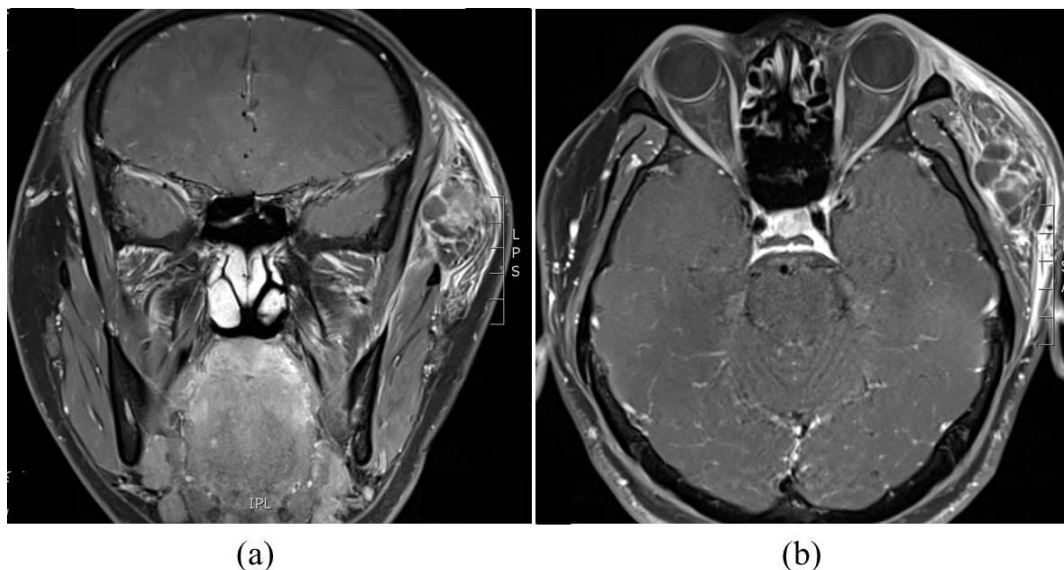
### Abstract

Described is the case of a 29-year-old male with *Y. enterocolitica* subclinical colitis causing an infected venolymphatic malformation, presenting as a large septic left temporal swelling. The patient was given IV antibiotics and over the course of a week the swelling significantly decreased in size and the patient's diarrhoea subsided; thus, the decision was made to not operate. Most extraintestinal case reports of *Y. enterocolitica* occur in immunosuppressed patients. Our case demonstrates a situation where even a young and healthy individual can develop seeding sepsis outside of the intestinal tract.

### Clinical record

A 29-year-old male with no past medical history presented to the emergency department with a 2-day history of left temporal swelling, fever and intermittent diarrhoea for several weeks in the lead-up. Upon examination, the patient had a temperature of 38.4°C, a heart rate of 120 BPM, a non-tender abdomen, and a large swelling in his left temporal

region. Blood was taken, which demonstrated an elevated white cell count of  $12.5 \times 10^9/L$  and a C-reactive protein of 160mg/L. Blood cultures taken at that time later grew *Yersinia enterocolitica*. As the patient was stable, an MRI was performed to characterise the swelling in his left temporal region (Figure 1), which showed an infected venolymphatic malformation.

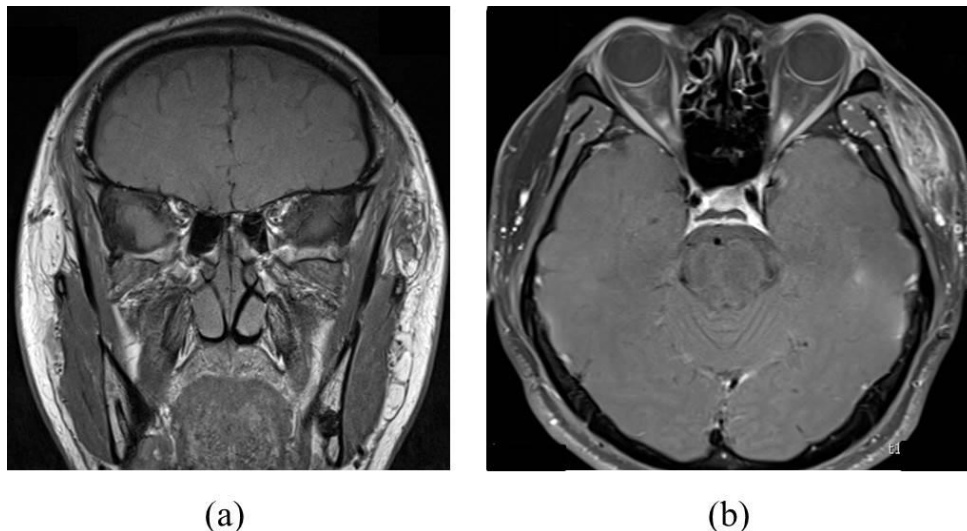


**Figure 1:** MRI images of the patient on admission (a) coronal view; (b) axial view.

The patient was given IV antibiotics; initially cephazolin, which was changed to cefepime on the advice of the Infectious Diseases team when blood culture results were made available. During the course of a week, the swelling significantly decreased in size and the patient's diarrhoea subsided; thus, the decision was made to not operate. The

patient was discharged home on a 3-week course of oral antibiotics (ciprofloxacin) with clinic follow up.

At the one-month review, the left temporal swelling was no longer noticeable, and repeat MRI showed a significant decrease in swelling (Figure 2).



**Figure 2:** MRI images of the patient one month after discharge from hospital (a) coronal view; (b) axial view

## Discussion

This case demonstrates an extraintestinal manifestation of *Yersinia enterocolitica*. The diagnosis was confirmed with a positive blood culture in conjunction with MRI findings of the infected left temporal venolymphatic malformation. Upon introduction of the appropriate antibiotics (cefepime), both fever and swelling were reduced, supporting the diagnosis. The infected site did not undergo fine needle aspiration or drainage given the confidence in diagnosis and risk to the patient associated with both of these procedures.

*Yersinia enterocolitica* is a gram-negative bacterial species in the family enterobacteriaceae, most commonly causing gastrointestinal infections, such as enteritis and pseudoappendicular syndrome [1]. Most cases of *Y. enterocolitica* self-resolve without requiring antibiotics [2], with transmission occurring zoonotically or via the consumption of contaminated foods (i.e., via contaminated food, water, or milk) [2,3]. Although rare, there have been case reports of person-to-person transmission [3].

After ingestion, *Y. enterocolitica* has a predilection for the terminal ileum, where the bacteria are able to penetrate M cells within Peyer's patches [3]. This typically leads to the presentation of fever, diarrhoea, and abdominal pain approximately one week after exposure [3].

Iron is considered to be an essential growth factor for bacteria; therefore, patients with iron overload are at higher risk of *Y. Enterocolitica* extraintestinal disease [3].

The majority of *Y. enterocolitica* infections occur sporadically with the sources unknown, however large outbreaks have previously been reported [3]. Most infections are self-limiting and do not require antibiotics, with therapy indicated for patients with septicaemia, focal extraintestinal infection, or who are immunocompromised [3]. The mortality rates of patients with *Y. Enterocolitica* septicaemia is 7.5% [4].

Extraintestinal manifestations of *Y. enterocolitica* are uncommon [1], however case reports involving infection of aneurysms, the respiratory system, and the skeletal system have been reported [1,2]. No known cases of *Y. enterocolitica* causing infected vascular malformations have been identified in the literature. We present a case of *Y. enterocolitica* subclinical colitis causing an infected venolymphatic malformation and presenting as a large septic left temporal swelling.

Most extraintestinal case reports of *Y. enterocolitica* occur in immunosuppressed patients [2]. Our case demonstrates a situation where even a young and healthy individual can develop seeding sepsis outside of the intestinal tract. Thus, heightened clinical investigation and historical examination are recommended to contribute to the knowledge base and the advancement of best practice.

## Lessons

*Yersinia enterocolitica* is a gram-negative bacterial species in the family enterobacteriaceae, most commonly causing gastrointestinal infections, such as enteritis and pseudoappendicular syndrome.

Most extraintestinal manifestations of *Yersinia enterocolitica* occur in immunosuppressed patients. The majority of *Yersinia enterocolitica* infections occur sporadically with the sources unknown, however large outbreaks have previously been reported.

With appropriate response, antibiotic therapy may be a valid alternative for treatment in patients with infectious collections where drainage may put patients at high morbidity risk.

## References

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