Isolated splenic abscess due to *Salmonella* Berta in a healthy adult

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DESCRIPTION

A 38-year-old man without a significant medical history, sick contacts or recent travel presented with fever, vomiting and diarrhoea. Three weeks prior to admission, he developed nasal congestion and dizziness. He was given amoxicillin/clavulanate for a presumptive diagnosis of sinusitis. A few days later, he developed fever, vomiting and diarrhoea. He was evaluated in the emergency room (ER), where he was thought to have a viral infection. He was instructed to stop taking the antibiotics and was discharged home. However, his fever persisted and he returned to the ER. Initial vital signs were significant for a heart rate of 110 beats/min and a temperature of 38.4°C. Physical examination demonstrated mild tenderness of the left upper quadrant. Laboratory work revealed a white cell count of $7.4 \times 10^9/L$ (normal value 3.7–10.5) and a creatinine of 1.5 mg/dL (normal value 0.6–1.2). Testing for HIV was negative. Abdominal ultrasound showed a complex cystic lesion within the spleen. Abdominal CT showed a splenic abscess measuring 7.0×6.8×6.8 cm with splenomegaly (figures 1 and 2). Ultrasound-guided diagnostic needle aspiration showed the abscess content was bloody turbid fluid, and the culture of aspirated fluid grew *Salmonella* Berta. His symptoms resolved with intravenous ceftriaxone and he was discharged with a plan to continue ceftriaxone. At the 3-week follow-up, a repeat CT scan showed an interval decrease in the size of the abscess. Ceftriaxone was stopped, and he completed an additional 2 weeks of oral ciprofloxacin. At his 7-week follow-up over the phone, he reported that he was asymptomatic without fever or abdominal pain.

Figure 1 Abdominal CT showed a splenic abscess measuring 7.0×6.8×6.8 cm with splenomegaly (axial view).

Figure 2 Abdominal CT showed a splenic abscess measuring 7.0×6.8×6.8 cm with splenomegaly (coronal view).

The usual clinical presentation of non-typhoidal *Salmonella* infection is self-limited gastroenteritis which typically does not require antibiotic treatment. However, 5% of individuals with a gastrointestinal illness caused by non-typhoidal *Salmonella* are known to develop bacteremia and localised infections such as intra-abdominal abscesses.¹ The risk factors for bacteremia and extraintestinal infections are malignancy, HIV, diabetes mellitus and immunosuppressive therapy.² While splenic abscesses due to *Salmonella* species are reported to occur in up to 2% of patients with typhoid fever, it is even more rare in non-typhoidal *Salmonella* infections.³ However, non-typhoidal *Salmonella* has been isolated in about 15% of patients with splenic abscesses.⁴ Jones *et al.* revealed that among 46,639 non-typhoidal *Salmonella* cases in the USA between 1996 and 2006, the most commonly isolated serotypes were Typhimurium (23.4%), while Berta was 0.6%.⁵ *Salmonella* Berta typically causes gastrointestinal food poisoning; however, serious infections such as myocarditis and meningitis due to this organism have been reported as well.^{6–8} The symptoms of splenic abscesses are usually non-specific and include fever, abdominal pain, nausea and vomiting. This non-specificity often leads to delays in diagnosis. Our patient, for example, did not have significant abdominal pain. Previous literature revealed that only half of patients with splenic abscesses had left upper quadrant pain.⁹ While both ultrasonography and CT can be used in making the diagnosis, CT has higher sensitivity (96%) than ultrasound (76%).⁹ Traditionally, surgical management with splenectomy has been the preferred treatment. However, there have been multiple case

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reports where conservative management, including percutaneous drainage along with antibiotics or even antibiotics alone, was successful.³ Given the increased long-term risk of severe/overwhelming infection with encapsulated bacteria, and the need for prophylactic antibiotics after splenectomy, non-surgical management might be the more reasonable option for selected patients.

Learning points

- ▶ Though splenic abscesses are very rare complications of non-typhoidal *Salmonella* infections, non-typhoidal *Salmonella* has been isolated in about 15% of patients with a splenic abscess.
- ▶ While splenectomy or percutaneous drainage with antibiotics are considered preferred treatments, there is an increasing number of case reports in which conservative management with antibiotics alone has been successful.

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