Unusual presentation of more common disease/injury

Brucellosis presenting as septic shock

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Brucellosis generally presents with fever, malaise, weight loss and bone pain with either an abrupt or insidious onset. A 76-year-old man presented in April 2010 with fever of 103°F, severe tachycardia, tachypnoea and a blood pressure of 80/50 mm Hg requiring fluids and vasopressor support with norepinephrine. The patient had brucellosis in 1956 which was treated for 'many weeks' with tetracycline and streptomycin. He has had no recurrences since that time. He denies recent travel outside the USA or consumption of raw dairy products. Blood cultures grew *Brucella melitensis*. He was treated with gentamycin, doxycycline and rifampin for 1 week and discharged home on doxycycline and rifampin. He relapsed after 2 days, requiring re-admission and a 4-week course of gentamycin. This case is most unusual in that the brucellosis presented with septic shock after a 50-year quiescence and required prolonged therapy with gentamycin to induce remission.

BACKGROUND

This case represents an unusual presentation of brucellosis, a relatively common world-wide infection. Clinicians should be aware that brucellosis can occur after 50 years of quiescence and present as septic shock.

CASE PRESENTATION

A 76-year-old White male presented to the emergency department in April 2010 with severe tachycardia, tachypnoea and a blood pressure of 80/50 mm Hg. He remained hypotensive despite the administration of 3 l of crystalloid and required vasopressor support with norepinephrine. His history was significant for 3 weeks of severe low back pain and fever of up to 101°F. Upon presentation his temperature was 103°. He denied any recent travel outside the USA, cough, diarrhoea, bloating, dyspnoea, eating at restaurants or recent consumption of raw dairy products. There was no history of psychiatric disease. Prior medical history was significant for brucellosis in 1956 treated with 'many weeks' of tetracycline and streptomycin. He had no recurrences since. Laboratory data on admission revealed a WBC of 5200/mm³, Hb of 10.3 gm/dl and a platelet count of 10 000/mm³. Blood and urine cultures were sent and he was empirically treated with intravenous gentamycin 5 mg/kg/day, oral doxycycline 100 mg Q12 h and rifampin 600 mg daily for presumed brucellosis.

The blood pressure stabilised and vasopressors were discontinued within 36 h. Two sets of blood cultures grew *Brucella melitensis*. A transthoracic echocardiogram failed to reveal vegetations. Gentamycin was continued for 1 week and he was discharged home on a combination of doxycycline and rifampin.

OUTCOME AND FOLLOW-UP

Three days after discharge there was clinical evidence of relapse as manifested by a fever of 103°F and severe low

back pain. An MRI of the lumbosacral spine revealed a L4-L5 disc extrusion, but minimal inflammation. He was treated with gentamycin, doxycycline and rifampin and he defervesced within 24 h. In view of the response to gentamycin, a peripherally inserted central line was placed and he received a 4-week course of gentamycin, 6 weeks of doxycycline and rifampin without adverse event. He remained relapse free at 6 months follow-up.

DISCUSSION

Brucellosis is the most common zoonotic infection worldwide. It is endemic to the Mediterranean region, the Arabian Peninsula, Mexico, Central and Southern America.¹ *Brucella* species are small, gram negative, aerobic and non-motile intracellular coccobacilli.² It is transmitted to humans via direct contact of infected animals or by ingestion of unpasteurised milk and dairy products. Relapse is common and can occur after many decades as in this case.^{1 2}

Fever is the most common presentation of brucellosis and it may present as a fever of unknown origin. Night sweats, malaise, anorexia, arthralgias, fatigue, weight loss and depression are other prominent symptoms. Its presentation may be abrupt or insidious over days to weeks. Physical findings are usually absent except for fever; lymphadenopathy and mild hepatosplenomegaly may occasionally be found.¹⁻⁴ The joint is the most common organ involved; sacroiliitis will develop in up to 30% of cases. Neurobrucellosis, endocarditis and hepatic abscesses occur infrequently. To our knowledge, this is the first case where shock was the presenting feature. Only one prior case of shock, secondary to brucellosis has been reported.³ In that case, the administration of antibiotics precipitated endotoxemia and development of shock.

The diagnosis of brucellosis is made based on cultures and serology. *Brucella* bacteraemia is seen in up to 90%

of patients and blood cultures are positive in a majority of cases.⁵ Biopsy of infected tissue may also provide positive cultures.

There are a number of drug regimens for the treatment of brucellosis. Oral doxycycline for 6 weeks plus parenteral streptomycin for 14 days is the traditional regimen.⁶ In patients without spondylitis, parenteral gentamycin for 7 days is equally efficacious.⁷ In 1986 the WHO recommended a combination of oral doxycycline and rifampin for 6 weeks.⁸ The advantage of this regimen is that it is oral, but it may have a higher relapse rate. Interestingly, our patient suffered an early relapse despite triple therapy with doxycycline, rifampin and gentamycin. A prolonged course of 6 weeks of oral doxycycline and rifampin with

4 weeks of parenteral gentamycin led to a cure with no relapses in the 6 months follow-up.

Competing interests None.

Patient consent Obtained.

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Learning points

- Brucellosis can present as septic shock.
- Brucellosis can recur after a remission of 50 years.
- A prolonged course of gentamycin may be necessary to treat brucellosis.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Haran M, Agarwal A, Kupfer Y, Seneviratne C, Chawla K, Tessler S. Brucellosis presenting as septic shock. *BMJ Case Reports* 2011;10.1136/bcr.12.2010.3586, date of publication

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