CASE REPORT
Persisting fever in a patient with brucella endocarditis: occult splenic abscess
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Brucella endocarditis, despite its high mortality rate with combined medical and surgical treatment, has a low occurrence rate in cases of brucellosis and has been endemic in regions surrounding Turkey. Rarely, patients with infective endocarditis with common microorganisms develop a splenic abscess. A patient is reported on with brucella endocarditis and persistent fever. An occult splenic abscess was found. This is the second reported case in the literature of brucella endocarditis with splenic abscess.

Brucellosis, though common worldwide, predominates in the Mediterranean and Middle East regions. Brucella species frequently associated with human brucellosis are Brucella melitensis, B abortus, B suis, and rarely B canis. Brucella endocarditis, despite its high mortality rate, has a low occurrence rate in cases of brucellosis (< 2%). Heart failure is the leading cause of death. The best outcome is associated with a combined medical and surgical approach. However, it is still a major health problem in developing countries. Here we present a patient with brucella endocarditis and persistent fever despite optimal treatment. An occult splenic abscess was found during preparation for surgery.

CASE REPORT
A 19 year old patient was referred to our clinic with a one month history of undulant fever, chills, and drenching sweats. In his initial examination, he was noted to have pansystolic murmur of grade 3/6 radiating to the neck with a body temperature of 38°C. He was then hospitalised with a probable diagnosis of infective endocarditis. In his blood analysis, white cell count was $18 \times 10^6/\text{l}$. Six blood cultures were obtained and echocardiography was performed showing a large vegetation on the aortic valve with dilatation of the left ventricle (fig 1). Since he had a history of contact with dairy products he was given triple drug treatment for brucella endocarditis empirically. Treatment was verified with high titres of standard tube agglutination. Treatment was revised after blood cultures yielded Brucella melitensis. In his follow up period of three weeks, fever persisted despite antibrucella antimicrobial drugs. Then the patient was accepted as a non-responder to antibiotics and surgery was indicated. During his preparation, because of a suspicious image in ultrasonography, abdominal computed tomography was indicated and an occult splenic abscess was noted (fig 2). Splenectomy was performed through a laparoscopic approach. Following splenectomy the patient's status improved and surgery was performed. A similar microorganism was cultured from the splenic tissue, as well as vegetative material. The patient was discharged soon afterwards with antimicrobial treatment continued for an additional six months. The patient has been followed up by control visits with no sign of a recurrence.

DISCUSSION
Brucella endocarditis is a rare manifestation of brucellosis, though it is endemic in some regions. Medical treatment for brucella endocarditis is not sufficient to cure the illness and successful management requires a combination of medical treatment and early surgery. Classically, brucellosis is treated with a combination of either doxycycline and streptomycin or doxycycline and rifampicin for four to six weeks. Longer regimens have been used in combination with surgery if endocarditis is present. There is no consensus on the optimal duration. Recently, fluoroquinolones have also been used to treat brucellosis.
Three to five per cent of patients with infective endocarditis with common microorganisms develop a splenic abscess. However, to our knowledge, our case is the second to be reported in the literature of brucella endocarditis with splenic abscess.

Although splenic defects can be identified by ultrasonography and computed tomography, these tests cannot discriminate between abscess and infarct. Persistent fever and progressive enlargement of the lesion suggest that it is an abscess. Successful treatment of a splenic abscess generally requires drainage through a percutaneous approach if feasible. Splenic abscess should be effectively treated before surgery.

All patients with endocarditis, abdominal complaints, and recurrent or persistent fever should be evaluated for any potential foci for relapse, particularly the spleen.

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