

A case of Q fever with hepatitis and an atypical skin lesion

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To the Editor,

A 60-year-old male patient presented at the emergency department with a 2-week history of general malaise with high fever (till 39°C), anorexia and nausea. Since 2 weeks a small non-healing wound, following shaving, was noticed by the patient on the right cheek. His past medical history was unremarkable. He used alcohol on a daily basis, on average 4 units a day, and smoked. He took no medications. 1 Month before presentation he travelled to the south of France. Clinical examination was normal except for a small rather atonic ulcer on his right cheek (Fig. 1).

Biochemistries revealed elevated C-reactive protein (115 mg/L), reduced platelet count (92000/ μ l) and abnormal liver function tests (aspartate transaminase, 124 IU/L; alanine transaminase, 161 IU/L ; alkaline phosphatase, 242 IU/L; and total bilirubin, 1.3 mg/dL with 0.93 mg/dL direct bilirubin). Viral serology was negative. Autoantibody tests showed weak positive anti-smooth muscle antibodies. Radiography of the chest and abdominal ultrasound were normal. Blood and urine cultures showed no growth. Empirical treatment with amoxicillin-clavunate was initiated. Yet his fever continued and his transaminase remained elevated. Abdominal Computed tomography (CT) revealed signs of acute hepatitis (hepatomegaly, periportal cuffing and edema in the gallbladder bed). Positron emission tomography-computed tomography (PET-CT) didn't reveal any suspect hypermetabolic foci. Because of the ongoing fever and elevated transaminases a liver biopsy was performed which demonstrated a granulomatous hepatitis (Fig. 2). The skin lesion was biopsied, showing granulomatous inflammation with formation of suppurative granulomata in the dermis reaching to the subcutis (Fig. 2). Ziehl, Periodic acid – Schiff and Grocott staining couldn't reveal any causative microorganism. Tuberculin skin test was negative. Cultures of the skin lesion showed skin flora but no mycobacteria or yeast. Polymerase chain reaction (PCR) on skin biopsy was negative for *rickettsia* or *leishmaniasis*. Additional history taking revealed that the patient stayed on a sheep farm in the south of France, and had been in close contact with the animals. This raised suspicion



Fig. 1 — Small atonic ulcer on the right cheek. This lesion appeared after shaving, and had been present since (more than) 2 weeks.

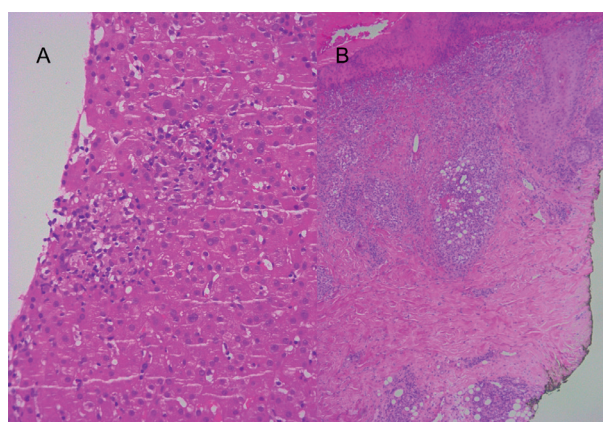


Fig. 2 — A. Liver parenchyma with the presence of a non-caseating granulomatous inflammation (haematoxylin-eosin staining, magnification 200x). B. Dense, mixed inflammatory infiltrate in the dermis reaching to the subcutis, with predominance of histiocytes and formation of suppurative granulomas (haematoxylin-eosin staining, magnification 25x).

for Q fever and empiric treatment with doxycycline was started. *C. Burnetti* serology was positive (titers fase I: IgG 1/128 and IgM 1/512; fase II IgG > 1/512 and IgM > 1/1024) which confirmed the suspicion for acute Q fever. After initiation of doxycycline the fever subsided, liver

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function tests normalized and healing of the skin lesion occurred.

Q fever is a worldwide zoonosis, caused by the intracellular bacterium *C. burnetii*. The most commonly identified sources of human infection are farm animals, such as cattle, goats, and sheep. Human infections occur mainly following inhalation of contaminated aerosols (1). Q fever is endemic in some regions. In Southern France, where our patient resided, the numbers of cases related to acute Q fever have increased over the last years (2).

Q fever is associated with a wide spectrum of clinical manifestations. Up to 60 percent of acute infections are asymptomatic. Symptomatic infection most commonly presents as a self-limited flu-like illness, pneumonia, or hepatitis. 1% may develop chronic infection like endocarditis. Cutaneous signs are more common than once believed, with up to 20% of patients presenting with transient punctiform rashes, purpuric or maculopapular eruptions (erythematous macules mostly on the trunk)

(3). Other types of cutaneous involvement have seldom been reported: erythema nodosum, erythema annulare centrifugum, lobular panniculitis and vasculitis (4). We didn't find a case description in the literature of Q fever with a single skin ulcer that demonstrated a granulomatous dermatitis on histology.

The diagnosis of Q fever is challenging due to its unspecific manifestations. Epidemiological data, contact with farm animals, skin lesions and unexplained liver function tests can be important clues for making the diagnosis.

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