Ir J Med Sci (2014) 183:503–505
DOI 10.1007/s11845-014-1074-7

LETTER TO THE EDITOR

Isolated hepatic sarcoidosis mimicking liver microabscesses: a case report

M. I. Taşbakan · H. A. Erdem · H. Pullukçu · T. Yamazhan · O. R. Sipahi · M. S. Taşbakan · N. Ceylan · F. Yılmaz · B. Arda · S. Ulusoy

Received: 15 September 2013 / Accepted: 26 January 2014 / Published online: 23 February 2014

Dear Editor,

Sarcoidosis is a systemic inflammatory disorder of unknown etiology characterized by the formation of non-caseating granulomas in the involved tissues and lymph nodes. It usually involves multiple organs, including the lungs, skin, bones, muscles, eyes, heart, liver, spleen and lymph nodes [1]. Although liver is an important site of sarcoidosis, isolated hepatic involvement is quite rare [2]. In this paper it is aimed to present a case of sarcoidosis with isolated liver microabscesses.

A 51-year-old woman with no known prior disease admitted to our outpatient clinic with the complaints of fever persisting for 20 days and abdominal pain. In the physical examination her length was 150 cm and her weight was 65 kg. She had fever (38 °C) and abdominal tenderness on palpation in the upper right quadrant. She had malaise and 8 kg weight loss within the previous month. Her main laboratory findings were: hemoglobin 9.7 g/dl, leukocyte 15.57 $\times$ 10^3/mm^3, neutrophil 80.9 %, C reactive protein 31 mg/dl and erythrocyte sedimentation rate (ESR) 104 mm/h. Abdominal ultrasonography revealed a 14 mm hemangioma in the segment 6 and a 42 $\times$ 38 mm cystic lesion nearby the gallbladder. Contrast enhanced abdominal computed tomography (CT) demonstrated diffuse hypodense infiltrative lesions in the liver representing microabscesses (Fig. 1a). At the same time liver magnetic resonance imaging (MRI) was performed to better characterize the liver lesions and revealed isointense and intermediate hyperintense signal changes on T2-weighted images and iso-hypointesity on T1-weighted images. Postcontrast T1-weighted images showed diffuse hypointense lesions and rim enhancement representing microabscesses. There were nonspecific nodules with a size of max 3.5 mm at upper lobe of the left lung in chest CT, and there was no mediastinal lymphadenopathy. Blood cultures were performed. Empirical ceftriaxone and metronidazole were started. Serologic tests for *Echinococcus, fasciolasis, toxoplasmosis*, *leishmaniasis*, HIV and *brucellosis* were negative. Since there was no clinical response on day 5, treatment was switched to meropenem and teicoplanin combination. There was no cardiac vegetation in transthoracic and transesophageal ECHO cardiography and no pathologic finding in electrocardiography. Autoimmune markers (ANA, ASMA, LKMA, ANCA) were negative. Tumor markers were normal. Blood or urine cultures did not reveal any bacterial or mycobacterial growth. Quantiferon TB Gold test was negative, tuberculosis skin test resulted in an induration of 9 mm, and blood adenosine deaminase was 13.3 U/l. CD4/CD8 rate was normal in bronchoalveolar lavage (BAL). BAL cytology revealed 95 % macrophages, 4 % lymphocytes and 1 % neutrophils. Bacteriological or mycobacteriological cultures of BAL did not reveal any pathogen. Liver biopsy and aspiration from the cyst were performed and *Entamoeba hystolytica*

M. I. Taşbakan (✉) · H. A. Erdem · H. Pullukçu · T. Yamazhan · O. R. Sipahi · B. Arda · S. Ulusoy
Department of Infectious Diseases and Clinical Microbiology, Medical Faculty, Ege University, Izmir, Turkey
e-mail: tasbakan@yahoo.com

M. S. Taşbakan
Department of Chest Diseases, Medical Faculty, Ege University, Izmir, Turkey

N. Ceylan
Department of Radiology, Medical Faculty, Ege University Medical Faculty, Izmir, Turkey

F. Yılmaz
Department of Pathology, Medical Faculty, Ege University, Izmir, Turkey

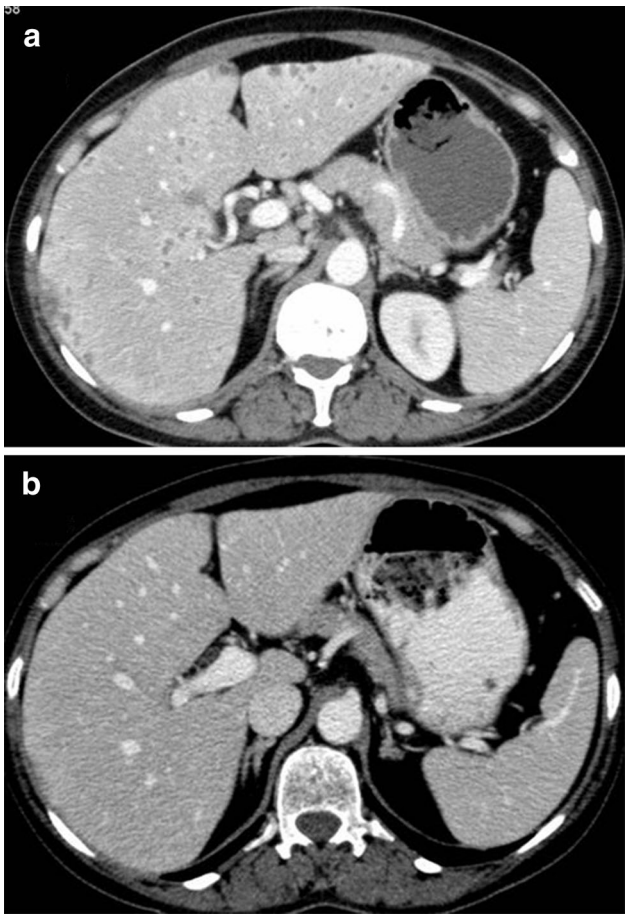

Fig. 1 **a** Contrast enhanced abdominal computed tomography revealing diffuse hypodense infiltrative lesions in the liver representing microabscesses. **b** Decrease in the abscess sizes after prednisolone therapy

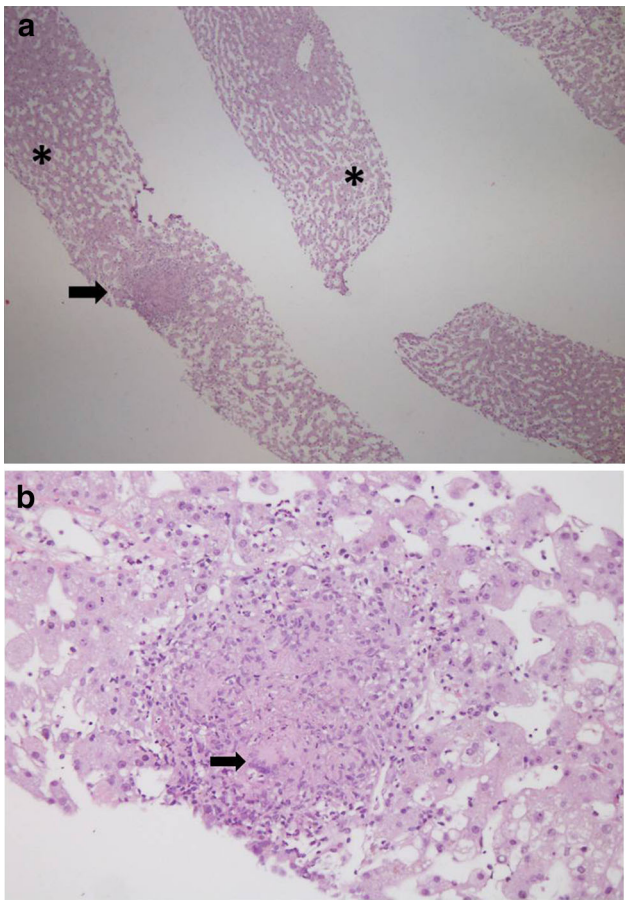

Fig. 2 **a** Second liver biopsy revealing of sinusoidal dilatation (*asterisk*) and granuloma formation (*arrow*) (Hematoxylin-eosin, X40) (**b**). *Closer view* of the granuloma with giant cells (*arrows*) (Hematoxylin-eosin, X200)

antigen, acid-fast stain and *Mycobacterium tuberculosis* PCR were negative. Pathology revealed macrovesicular steatosis in liver biopsy which was considered to be related to her overweight. A bone marrow biopsy was performed which was normocellular and negative for acid-fast stain and *M. tuberculosis* PCR. Laparotomy was planned. However, the patient did not give consent. Second, liver biopsy was performed under the ultrasonography guidance. A non-caseating granuloma including langerhans type giant cells was seen within the liver parenchyma. There was also slight fatty change and prominent sinusoidal dilatation (Fig. 2a, b). A conjunctival biopsy was performed which revealed lymphoplasmocytic infiltration but no granuloma formation. Non-caseating granulomas including langerhans type giant cells were seen in portal areas suggesting tuberculosis or sarcoidosis. A conjunctiva biopsy was performed, and revealed lymphoplasmocytic infiltration but not granuloma. Angiotensin-converting enzyme was found to be 54.4 U/l (N: 8–52 U/l). Since the patient did not respond to conventional antimicrobials and the microbiologic tests excluded tuberculosis and other common infectious etiologies, she was started with 40 mg iv methyl prednisolone + isoniazid prophylaxis as the diagnosis of sarcoidosis was favored. Her complaints regressed in 2 days. The followup CT and MRI on 30th day of prednisolone revealed decrease in the abscess sizes (Fig. 1b). Meanwhile ACE and ESR decreased to 5 U/l and 10 mm/h, respectively. Her ESR was 4 mm/h, CRP <0.1 mg/dl and ACE13 U/l on the 60th day control. Her prednisolone is continued as 20 mg/day for 2 months, 10 mg/day for 4 months and 5 mg/kg for 4 months. Thereafter it was stopped. There was no relapse after 3-month followup.

Sarcoidosis is a systemic disorder of unknown etiology which is common in young adults aged <40. As in our case, diagnosis of sarcoidosis is made histopathologically by the presence of non-caseating granulomas and supported by relevant clinical and radiological findings. The lungs are involved in more than 90 % of patients, whereas extrathoracic sarcoidosis is seen in <10 % of the cases [2].

Fever or weight loss is common in extrathoracic sarcoidosis. Hepatic sarcoidosis may be encountered in a wide clinical spectrum including asymptomatic presentation to severe increase in liver enzyme and symptoms [3]. Intra or extrahepatic cholestasis, pruritus, anorexia or abdominal pain may be present. The presented case also had fever persisting for 3 weeks, weight loss, malaise and abdominal pain.

Abdominal CT and MRI are valuable tools for detecting sarcoidosis in the liver. CT is the first line imaging modality for diagnosing sarcoidosis because of its capacity to demonstrate pulmonary involvement and hilar lymphadenopathy. In the presented case CT revealed microabscesses in the liver. MRI enables soft tissue contrast that is useful for detecting sarcoidosis in the liver. Signal intensity on pre and postcontrast T1-and T2-weighted images may represent disease activity and pathological appearance of sarcoidosis. Followup CT and MRI demonstrated regression in the liver lesions in our patient with a strikingly good response to treatment.

The patient did not respond to wide spectrum antibiotics including therapy for *E. hystolytica*. No etiological factor could be demonstrated such as parasites, mycobacteria, rheumatological diseases or malignancy. Liver and bone marrow biopsy did not reveal any specific diagnosis. The second liver biopsy revealed non-caseated granulomas.

Increase in ACE levels is seen in 30–80 % of the sarcoidosis cases; false-positivity may be seen in <5 % [4]. ACE is suggested to be used in the followup due to its low specificity. Concomitant increased ACE level, exclusion of other common diagnosis such as rheumatologic diseases and malignity as well as rapid response to corticosteroid supported the diagnosis for sarcoidosis.

Treatment decision in sarcoidosis is made according to symptoms and severity of the disease. Corticosteroids are suggested as the first line therapy. Azathioprine, methotrexate or hydroxychloroquine may be used in steroid nonrespondents [2]. Our case was started with 40 mg iv methyl prednisolone to which she had a rapid clinical response. She had significant regression of the liver abscesses on control MRI performed at the end of the first month of therapy which was also accompanied by decrease in ESR and ACE levels. Since she had no cardiologic finding (including electrocardiogram and echocardiography) we did not perform any cardiac MRI. Steroid level was decreased to 20 mg at the end of second month and to 10 mg 2 months thereafter. There was no clinical or laboratory relapse at the end of 3-month followup.

Liver biopsy may reveal liver involvement in 24–94 % of systemic sarcoidosis cases and liver enzymes may be found abnormal in 2–60 % of them whereas symptomatic liver involvement is seen in only <5 % of the cases [5]. Despite all, isolated liver involvement is very rare. In case of a patient presenting with fever of unknown origin tuberculosis is the most probable initial diagnosis in Turkey whereas sarcoidosis is reported in only four of 857 cases [6]. The presented case suggests that diagnosis of isolated liver sarcoidosis is very rare and challenging. Liver biopsy alone is not sufficient for the diagnosis. Increased ACE levels may be important and tuberculosis should be excluded.

Conflict of interest None.

References

1. Uzkeser H, Karatay S, Yıldırım K, Eren S (2013) Sarcoidosis and denim sandblasting: a case report. Turk J Med Sci 43:343–345
2. Giovinale M, Fonnesu C, Soriano A et al (2009) Atypical sarcoidosis: case reports and review of the literature. Eur Rev Med Pharmacol Sci 13(Suppl 1):37–44
3. Gul W, Abbass K, Markert RJ, Akram S (2011) Case of isolated hepatic sarcoidosis. Eur Rev Med Pharmacol Sci 15(1):107–108
4. Tanoue LT, Elias JA. Systemic sarcoidosis (1998) In: Baum GL, Crapo JD, CeliBR, Karlinsky JB (eds) Textbook of pulmonary disease, 6th edn. Lippincott-Raven Publishers, Philadelphia, pp 407–430
5. Sekine T, Amano Y, Hidaka F et al (2012) Hepatosplenic and muscular sarcoidosis: characterization with MR imaging. Magn Reson Med Sci 11(2):83–89
6. Sipahi OR, Şenol Ş, Arsu G et al (2007) Pooled analysis of 857 published adult fever of unknown origin cases in Turkey between 1990-2006. Med Sci Monit 13:318–322