Liver abscess : a rare but an important complication that must be considered in Crohn's disease

L. Filik, A. Ulker, B. Tunc, S. Disibeyaz, U. Dagli

Turkiye Yuksek Ihtisas Hospital, Gastroenterology Clinic, Ankara, Turkey.

Abstract

Liver abscess is a quite rare complication in Crohn's disease. Early diagnosis and differentiation of pyogenic abscess from amoebic abscess are as important as the choosing of proper treatment in the management of liver abscess. Herein, 28-year-old man with Crohn's disease developing liver abscess is presented. He was treated with surgical drainage. (Acta gastroenterol. belg., **2004**, 67, **303-305**).

Key words : inflammatory bowel disease, ulcerative colitis, Crohn's disease, histology, activity, score.

Introduction

Pyogenic liver abscess in Crohn disease is an uncommon complication (1-3). The incidence of liver abscess in patients with Crohn's disease is 114-297 / 100.000, higher than that is in the general population, 8-16/100.000 (4). Intraabdominal abscesses, fistulous disease, metronidazole and corticosteroid use are predisposing factors in the pathogenesis of liver abscess. Awareness of this rare complication is very important and the mortality is relatively high if diagnosis and treatment is delayed (5-8). Herein, 28-year-old man with Crohn disease developing liver abscess treated by surgery is presented.

Case Report

A 26-yr-old young man was operated due to acute abdominal pain 3 years ago. At laparotomy, the terminal ileum wall and mesentery around terminal ileum was thickened and there was an adhesion between them. He underwent terminal ileum resection and end-to-end anastomosis operation. Pathological diagnosis was consistent with Crohn's disease. Thereafter, a close follow-up was undertaken and sulfasalasine treatment was given.

He felt quite well for two years except the presence of mild lower quadrant abdominal pain. Meanwhile, his laboratory values were completely normal. Sonographic examinations were unremarkable.

He remained well for the next 2 years, and then he was readmitted for weakness and worsening of abdominal pain. Laboratory data showed polymorphonuclear leukocytosis, elevated sedimentation rate and fibrinogen level. Abdominal ultrasound showed only prominent ileum loops and minimal intra-abdominal free fluid. He was hospitalized and oral metronidazole, ciprofloxacine and prednisolon treatment were given in addition to sulfasalasine. He got better and his laboratory values returned to normal. Again a close follow-up was undertaken and the combined treatment of oral prednisolon, sulfasalasine, metronidazole and ciprofloxacine was given.

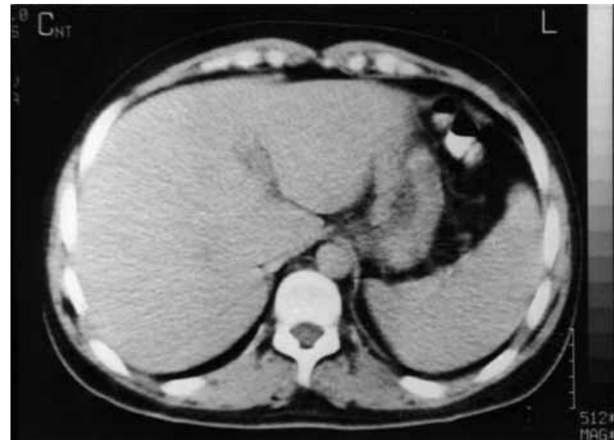

Fig. 1. — CT scan showing liver before abscess formation

Four months later, he was readmitted to hospital with severe abdominal pain, nausea, vomiting. Abdominal CT revealed loculated fluid of 6 × 4 cm in diameter between cecum and psoas muscle, thickening of intestinal loops. Liver appeared completely normal (Fig. 1). He was hospitalized in intensive care unit. Eight days later, he developed fever, deterioration of general status, worsened vomiting and leukocytosis of 30.000 / mm^3. Then, abdominal CT was repeated and an abscess in the liver 10 x 8 x 10 cm diameter was seen (Fig. 2). At this time, alkaline phospatase, gama glutamyl transferese levels were normal, transaminases were mildly elevated and total bilirubin and direct bilirubin levels were 3.1 and 1.82 mg/dl, respectively. A laparotomy and surgical drainage were performed. Histopathological examination of the wall of the liver abscess was consistent with liver abscess. He received several antibiotics. The size of

Correspondence : Levent Filik, Cemal Gursel Caddesi, Erk Apt., N° : 52/2, Kurtulus, Ankara, TR06600, Turkey. E-mail : leventfilik@yahoo.co.uk.

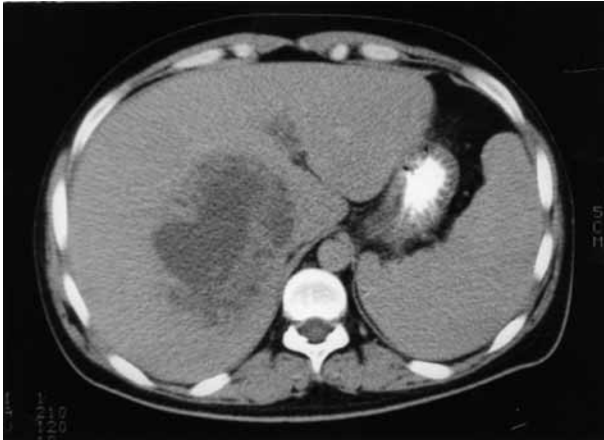

Fig. 2. — CT scan showing liver abscess

abscess is 11 mm in diameter, after drainage (Fig. 3). Meanwhile, skin or any other focal infection source were not documented.

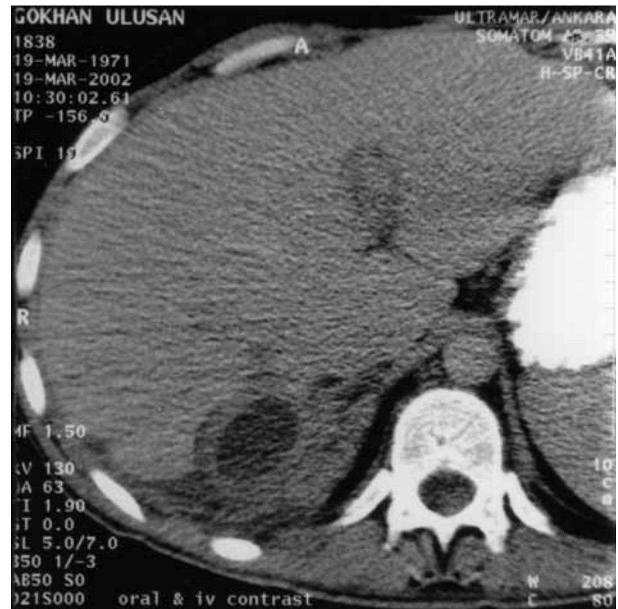

Fig. 3. — CT scan showing liver after surgical drainage

Discussion

Because the liver is an initial place of clearance of variable microorganisms from blood, it is prone to develop bacterial infection and abscess either pyogenic or amoebic (9). The frequency of pyogenic liver abscess in hospitalized patients is approximately within the range of 0.29%-1.47% (10). Pyogenic liver abscess is commonly caused by underlying disease of the biliary system, intraabdominal infections, perforated appendicitis, trauma, primary and metastatic liver malignancies. But it is not unusual that no predisposing disorder can be identified (9,11). Pyogenic abscesses are usually polymicrobial and most commonly isolated organisms are *E.coli, Klebsiella, Proteus, Pseudomonas* and anaerobes such as *Bacteroides* species (10,12). The optimal treatment of pyogenic abscess is percutaneous drainage and intravenous broad-spectrum antibiotics with activity against enteric aerobic and anaerobic bacteria (11).

On the other hand, because the large intestine reaction is relatively monomorphic to different stimuli, the differential diagnosis is important in the first presentation of colitis. In the literature, there were some case reports initially diagnosed as Crohn's disease which were treated with immunosuppressive drugs then the development of an amoebic liver abscess in these patients led to the correct diagnosis of amoebic dysentery (13,14). It is recommended that in every presentation of colitis, at least three stool specimens for microscopic examination, as well as testing for serum amoebic antibody should be done primarily especially if there is a travel history to areas with endemic *E. histolytica* (13-15).

Forty-seven case reports of Crohn's disease with liver abscess have been reported until 2002. Liver abscess was the initial manifestation in 11 of these cases. Nevertheless, there was only one case report of ulcerative colitis with liver abscess in the literature up to now (16). That unique ulcerative colitis case with liver abscess was 19 year old female patient (17). This rarity is probably because of the usual confinement of the ulcerative colitis within mucosa in contrary to Crohn's disease.

As reported in previous cases, the liver abscess is a rare complication of Crohn's disease (1-8). The mean duration between the diagnosis and liver abscess was reported as 9 years and 7.9 years by Greenstein et al and by Mir-Madjlessi *et al.*, respectively (4,18). But, that interval was reported as much more shorter, 0.5 year, by Vakil *et al.* (7). As we know from the previous case reports, it is very difficult to cure completely the abscesses and there is high mortality if the diagnosis is delayed (1-8). It is speculated that liver abscess results from the inflamed mucosa. Steroid therapy, fistulous disease and intrabdominal abscess are potential predisposing factors responsible for liver abscess (19-21). Our case has been taking steroid therapy and had loculated intraabdominal fluid. It is advised that in differential diagnosis of liver abscess, Crohn's disease should also be considered (6). Treatment used in previous case reports are variable i.e. only antibiotic treatment or combination of percutaneous drainage and antibiotic treatment, or surgery (1-8,18-21) (Table 1).

Our aim is to stress the necessity of maintenance of high index of suspicion in the diagnosis. We believe that, after diagnosis the treatment should be orientated according to abscess number, size, patient health status and experience of the clinic. Liver abscess is a rare complication in Crohn's disease and it should be considered in the follow up of patients with Crohn's disease.

Table 1. — **Some Case Reports of Crohn's disease associated with liver abscess and applied treatments**

Case Number	Age, sex	Other factors	Number of abscess	Treatment applied to liver abscess	Outcome	Reference
1	34 yr, male		Multiple	Conservative management with antibiotics, double-catheter drainage, and multiple aspirations	no recurrence in 5 years	Goletti O., 2001
2	20 yr, female		Multiple	Antibiotics, ultrasound-guided percutaneous aspiration and drainage with a pigtail catheter	rapid reduction of their size improvement in the patients general condition	Kreuzpaintner G., 2000
3	27 yr, female	Presenting As a sepsis after delivery	Not available	Antibiotics, bowel resection and surgical drainage of the abscess	not available	Dominguez S., 1999
4	40 yr, male		Multiple	Repeated aspirations and antibiotics	not available	Narayanan S., 1998
5	27 yr,	Portal vein thrombosis	Multiple	Conservative treatment with antibiotics and percutaneous catheter drainage	Liver abscess disappeared	Zoepf T., 1997
6	Not available		Single	Antibiotic treatment alone	Complete recovery	De Ronde T., 1990

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