

## **Pyogenic Liver Abscesses Secondary to Carcinoma of the Sigmoid Colon: A case report and clinical features of 20 cases in Japan**

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### **ABSTRACT**

We report a case of liver abscesses associated with sigmoid colon cancer in an 81-year-old woman. The patient was referred to our hospital because of a tumorous lesion of the sigmoid colon. Five days before the scheduled operation, she presented abdominal pain, fever and chill. Imaging scans revealed multiple liver abscesses in both lobes, which were successfully treated with intravenously administered antibiotics. Two weeks later, the patient underwent laparoscopic-assisted sigmoidectomy. Nineteen cases of liver abscess associated with colonic cancer have been reported during the past ten years in Japan, and we report the clinical features of these cases in this paper. An aggressive search for the underlying cause of pyogenic liver abscess should be an integral part of the definitive treatment of this disease.

### **INTRODUCTION**

We report a case of liver abscesses associated with sigmoid colon cancer in an 81-year-old woman. The patient was referred to our hospital because of a tumorous lesion of the sigmoid colon. Five days before the scheduled operation, she presented abdominal pain, fever and chill. Imaging scans revealed multiple liver abscesses in both lobes, which were successfully treated with intravenously administered antibiotics. Two weeks later, the patient underwent laparoscopic-assisted sigmoidectomy. Nineteen cases of liver abscess associated with colonic cancer have been reported

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Received 25 April 2005

Accepted 18 May 2005

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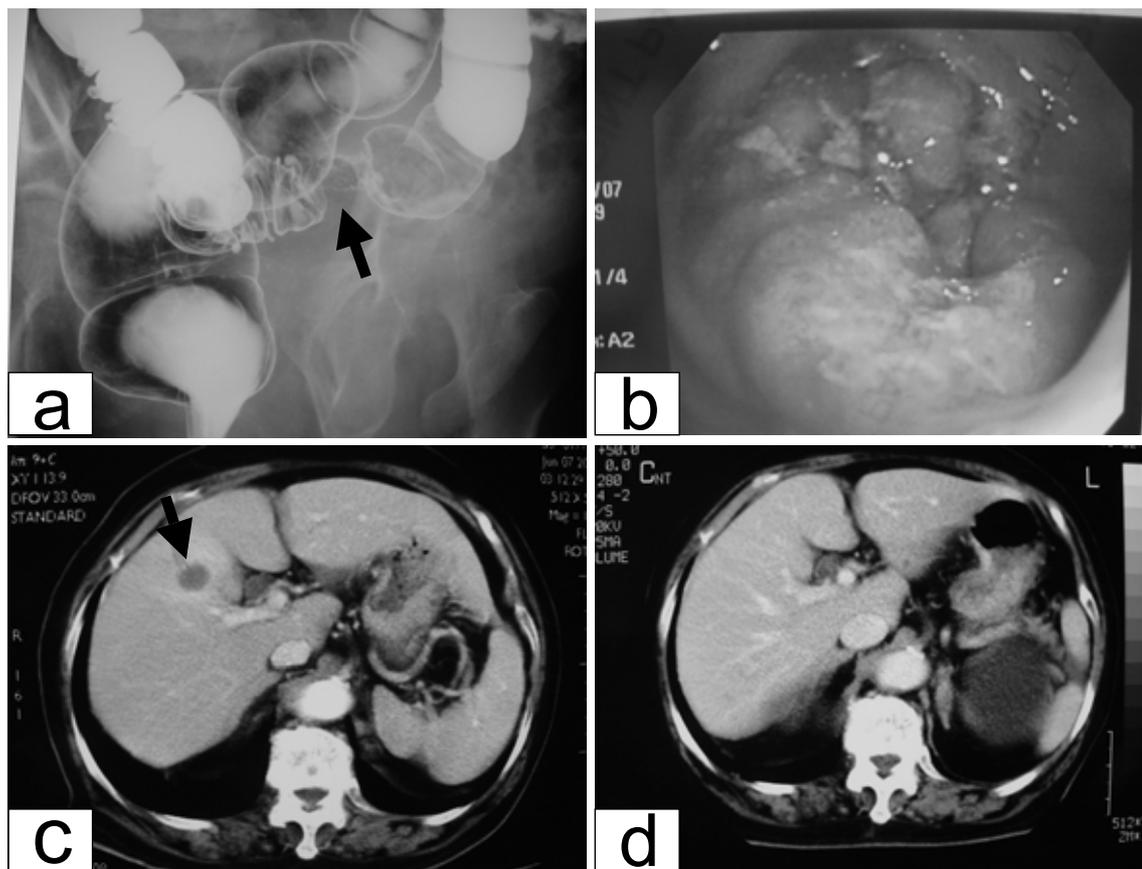
## CASE REPORT

An 81-year-old woman had felt lower abdominal pain four weeks before admission to our hospital, and a diagnostic work-up, including barium enema and colonoscopy, was performed elsewhere. A double-contrast barium enema was performed and revealed a space-occupying lesion in the sigmoid colon (Fig. 1a). Examination of biopsy specimens taken from the sigmoid tumor by colonoscopy disclosed fragments of moderately differentiated adenocarcinoma (Fig. 1b). Five days before the scheduled operation, she presented abdominal pain, fever and chill. Physical examination revealed sweating, tachycardia, a temperature of 40.7 C, and severe tenderness of the right upper abdomen. Laboratory tests showed hemoglobin of 12.0 g/dl, white blood count of 1400 and CRP of 15.8 mg/dl. A computed tomography scan revealed liver abscesses in both lobes (Fig. 1c). The patient received treatment with wide-spectrum antibiotics, which was effective. Her clinical condition improved, and the results of laboratory tests returned to normal. Follow-up imaging scans showed disappearance of liver abscesses (Fig. 1d). Two weeks later, the patient underwent laparoscopic-assisted sigmoidectomy. Her postoperative course was uneventful, and she remained free of recurrence during one-year follow-up period.

## DISCUSSION

The common pathogenetic mechanisms by which bacteria can form liver abscess are 1) ascending biliary infection, 2) portal bacteremia, 3) septicemia, 4) direct extension from intraperitoneal infection, 5) direct trauma to the liver, and 6) secondary infection of metastatic cancer (7, 8). We speculated that the route of infection in our patient was portal bacteremia because there was no evidence of ascending biliary infection and no other inflammatory lesions in the intraabdominal cavity. Since our patient had no macroscopic intestinal perforation, invading bacteria would have found their portal entry through a mucosal barrier break near the tumor (2).

In our computer-assisted search of the literature including papers published over the past 10 years in our country, we found 19 reports of colonic carcinoma as an underlying disease of a pyogenic abscess of the liver in the absence of hepatic metastases (1-7). These patients included 11 men and 9 women with a mean age of 64 years. The sites of primary colon lesions were the sigmoid colon in 11 patients, rectum in 4 patients, ascending colon in 3 patients and transverse colon in 2



*Fig 1. a: Double-contrast barium enema image showing a space-occupying lesion in the sigmoid colon (arrow). b: Colonoscopy disclosed a sigmoid colonic tumor. Biopsy showed moderately differentiated adenocarcinoma. c: Computed tomography (CT) scan showing one of the liver abscesses (in the right lobe) before the operation (arrow). d: Six days after the operation, CT showed progressive improvement of the focal liver lesions together with subjective and clinical improvement.*

patients. Abscesses were involved in 9 cases in the right lobe of the liver, in 4 cases in the left lobe, and in 4 cases in both lobes. A solitary abscess was found in 10 cases and multiple abscesses in 8 cases (2 cases unknown).

Our patient did well with medical therapy alone, a result consistent with many reports that pyogenic liver abscesses can be effectively managed by antibiotics and that surgery is rarely indicated. Actually, only 5 patients were operated on; 3 patients underwent drainage and 2 patients partial resection of the liver because liver metastases were suspected (1, 4). Ultrasound-guided percutaneous drainage of the abscesses was performed in 8 patients, and the other 7 patients were given only medication. In a report by Tanizaki et al. (4), open surgical drainage is not recommended because of the risk of dissemination of carcinoma cells, since liver metastasis could be one of the causes of liver abscess. Systemic antibiotic treatment, combined with simple aspiration, has been successfully used for treatment of pyogenic bacterial abscesses.

It is interesting to note that in half of these 20 cases, the presence of colon cancer

was discovered only after clinical symptoms of liver abscess had appeared, and association with colon cancer was established first in retrospect. Although liver abscesses due to colonic carcinoma are very uncommon, having treated a patient with such a condition, we would like to draw the attention of surgeons to this possibility.

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