Multiple Inflammatory Pseudotumors Mimicking Liver Metastasis from Colon Cancer: Report of a Case

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Case Report

A 54-year-old man was admitted to our hospital for surgical treatment of transverse colon cancer. His medical history revealed that he had undergone a sigmoidectomy for sigmoid colon cancer at the age of 41 years and that he had been diagnosed as having hepatitis C at the age of 42 years. The serum levels of carcinoembryonic antigen (CEA) and carbohydrate antigen 19-9 (CA 19-9) were within the normal range. Thus, a right hemi-colectomy was performed in June 1995. Preoperative abdominal computed tomography (CT) scan and intraoperative routine examinations revealed no abnormal findings in the liver. A histological diagnosis of moderately differentiated adenocarcinoma of clinical stage Dukes C was made, and carmofur, 300 mg/day, was prescribed for adjuvant chemotherapy for 6 months.

A follow-up CT scan in December 1995 revealed two new low-density areas, both 4 × 4 cm in size, in segments 2 and 3, and 4 and 8 of the liver. The periphery of these areas was nonhomogeneously enhanced by contrast medium (Fig. 1). Abdominal ultrasonography (US) revealed hypoechoic tumors, and abdominal angiography revealed tumor stains corresponding with the lesions seen on the CT scan (Fig. 2).

On physical examination, the patient appeared healthy and well nourished, being 167 cm tall and weighing 69 kg. Laboratory data were all within the normal range, including a white blood cell count of 5740/mm³ and a C-reactive protein level of 0.0 mg/dl. A test for the hepatitis C antibody was positive, but the serum levels of CEA, CA 19-9, and α-fetoprotein were all within the normal range. The patient had never been outside of Japan. After his last operation, he suffered from an intermittent fever for 10 days and underwent incision and drainage for a subcutaneous abscess on postoperative day 10. He stated that no other abnormal fevers had developed in the past year.

Abstract: A 54-year-old man underwent an operation for colon cancer histologically diagnosed as moderately differentiated adenocarcinoma with clinical staging of Dukes C. He was prescribed carmofur for adjuvant chemotherapy. A follow-up computed tomography scan done 6 months later revealed two new low-density areas in the liver. A diagnosis of metastatic adenocarcinoma from the previous colon cancer was presumed, based on the patient's history and radiological findings, and resection of the affected area of liver was performed. Histological examination of these tumors revealed that they were inflammatory pseudotumors (IPT). The patient had an excellent postoperative course and has shown no further signs of recurrence in the 3 years since his last operation. IPT of the liver is a rare disease, for which no methods of diagnosis and treatment have been established, since it is difficult to distinguish IPT from hepatocellular carcinoma or metastatic carcinoma. We describe this case with a review of the 101 cases of IPT documented in the Japanese literature, in the hope that it will contribute to the diagnosis and treatment of this unusual disease entity.

Key Words: liver tumor, inflammatory pseudotumor

Introduction

Although inflammatory pseudotumors (IPT) frequently occur in the lungs and other organs, they are rarely found in the liver. IPT in the liver was initially reported by Pack and Baker in 1953. During the most recent decade, the incidence of IPTs in Japan has been increasing. We describe herein a case of IPT mimicking multiple liver metastasis from a colon cancer, followed by a review of the 101 cases documented in the Japanese literature.

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Considering the patient’s history, combined with the radiological findings of the tumors, a diagnosis of metastatic carcinoma from the previous colon cancer was made. He was admitted to our hospital and underwent a lateral segmentectomy and wedge resection for each tumor in February 1996.

The resected specimens contained two tumors, one measuring 2 × 1.5 cm in segments 2 and 3 of the liver and the other measuring 2.5 × 1.5 cm in segments 4 and 8 of the liver. Both tumors were yellowish-white in color and elastic-firm in consistency. They were well demarcated from the surrounding liver parenchyma (Fig. 3).

Histopathologically, both tumors were located just beneath the liver capsule and were composed of multiple nodules of variable-sized eosinophilic necrosis, surrounding inflammatory cells (Fig. 4A). These inflammatory cells consisted of lymphocytes and plasma cells (Fig. 4B). Histiocytes were also occasionally seen around hyaline connective tissue. Stains for microorganisms were negative. Thus, the lesions were diagnosed as inflammatory pseudotumors (IPT). The patient had an excellent recovery and remains asymptomatic and free of disease 3 years after his last operation.

Discussion

Although IPT is frequently encountered in the lungs and other organs, it rarely occurs in the liver, the first case having been documented by Pack and Baker in 1953. Histopathologically, IPT is a combination of plasma cells, macrophages, and fibroblasts, with variable collagen deposition. The first report of IPT of the liver in Japan was described by Shinada et al. in 1980. Interestingly, the incidence of IPT in Japan appears to be increasing.

The pathogenesis and etiology of IPT of the liver has been suggested as infection, an immune response, liver hemorrhage and necrosis, and/or occlusive phlebitis. Considering the clinical course and microscopic findings of this disease, infection via the portal vein or bile duct seems to be the most likely cause of IPT of the liver. It has been suggested that IPT of the liver originates from the gradual formation of a granulomatous tumor, without abscess formation, caused by low-grade pathogenic