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A Case of Giant Hemangioma of the Liver presenting with Fever of Unknown Origin

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A 37 year-old-woman was admitted to the hospital becasuse of 15 days' duration of continuous fever. Routine studies for detection of fever foci were negative. Imaging studies revealed giant hemangioma of the liver with central thrombosis. The fever persisted for a period of 4 weeks, and subsided after conservative management.
We report a case of hepatic hemangioma presenting with fever of unknown origin. The condition is very rare, but should be regarded as one of the causes of fever of unknown origin.

Key Word : *hemangioma, liver, fever*

INTRODUCTION

Giant hemangioma is conventionally defined as a hemangioma of more than 4 cm in diameter(Adams, 1970), which most commonly presents with an abdominal mass, pain, or symptoms resulting from compression of other adjacent organs. There were a few reports of hepatic hemangioma presenting with fever(Fenster, 1978).

We report a case of giant hemangioma of the liver presenting with fever of unknown origin.

CASE REPORT

A 37 year-old-woman was admitted to the hospital because of continuous fever. The patient was well until 15 days earlier, when fever and chill developed suddenly. Seven days prior to admission she was seen at another hospital, where clinical evaluation was normal and antipyretics was prescribed. However, the fever persisted up to 39℃. She was transferred to this hospital for further evaluation. There was no history of liver disease, tuberculosis, or rheumatic disease. She used no medications except antipyretic. She denied alcohol consumption or smoking.

The temperature was 38.5℃, the pulse was 85/min, the respirations were 22/min. The blood pressure was 120/80 mmHg. She was an obese woman who appeared acutely ill. No skin rash, vesicular lesions, or lymphadenopathy were found. The head was normal. The neck was supple ; the thyroid was not felt. The lungs were clear. The heart was normal. The liver and spleen were not felt, and no masses were detected, but mild tenderness was noted at the right upper quadrant. The extremities were normal. Neurologic examination was negative.

The hematocrit was 36.7 percent ; the white-cell count was 9,400/mm^3, with 80 percent neutrophils, 15 percent lymphocytes, 5 percent monocytes ; the platelet count was 299,000/mm^3 ; the erythrocyte sedimentation rate was 100mm/hour. The prothrombin time was 12.4 sec(control 12.1 sec) ; the partial thromboplastine time was 23.7 sec(con-

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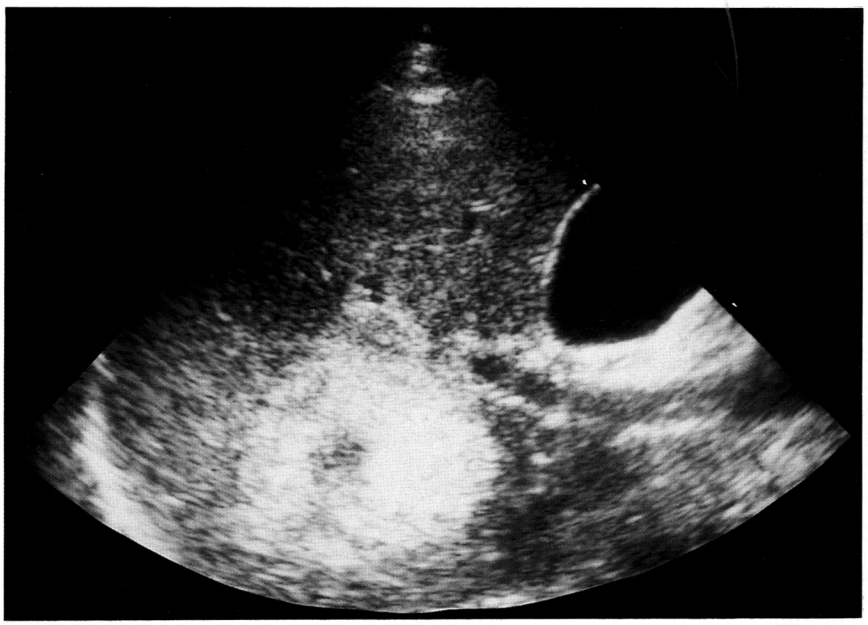

Fig. 1. An abdominal sonogram, revealing a hyperechoic mass with central hypoechoic area at the right posterial segment of the liver.

trol 30.4sec) ; the fibrinogen was 592mg/dl(normal : 200-400mg/dl). The urea nitrogen was 10mg/dl, the creatinine 0.6mg/dl, the glucose 120mg/dl, the cholesterol 146mg/dl, the protein 7.4g/dl, the albumin 4.1g/dl, the aspartate aminotransferase 20IU/L, the alanine aminotransferase 11IU/L, the alkaline phosphatase 116IU/L the total bilirubin 0.3mg/dl. Virologic markers for hepatitis including hepatitis B and C virus were negative. A serum level for alfa-fetoprotein was 3ng/ml. A serologic test for syphilis, ameba, antinuclear antibody, rheumatoid factor, antiphospholipid antibody, and a Widal test were negative. The urine and stool examinations were normal. Specimens for sputum, stool, and urine were obtained for cultures, which yielded no organisms. Six blood cultures over 2 days were also negative. A plain chest X-ray showed normal findings. An abdominal sonogram revealed a 5cm sized hyperechoic mass with central hypoechoic area at the right posterior segment of the liver(Fig. 1), and a computed tomography(CT) of the abdomen disclosed the same sized low density mass which was stronly enhanced with sparing the central area after intravenous contrast injection(Fig. 2, Fig. 3).

On the 5th day the fever persisted and fluctuated from 37.5 to 38.5℃. Repeated physical examinations and blood tests revealed no change. Cultures for bone marrow aspirate were performed, and yielded no orgainsms. Bone marrow biopsy showed normal findings except for mild granulocytic hyperplasia. A three-headed SPECT(single photon emission computed tomography), performed after the intravenous injection of [99mTc] red-blood cell, showed the characteristic lesion at the right posterior segment of the liver, which appeared as a 'cold area' in initial perfusion phase, but became a 'hot spot' with central cold area in delayed blood pool images, which is consistent with hemangioma-(Fig. 4). On the 7th day percutaneous needle aspiration for liver mass was performed to obtain specimens for cultures and cytology. Only blood was aspirated, and a culture yielded no organisms. Cytologic examination was also negative. On the 10th day, a definitive diagnosis was made of hepatic hemangioma with central thrombosis, which caused fever and right upper quadrant tenderness. Therefore antipyretic was prescribed. On the 14th day the fever subsided. Irradiation or transcather arterial embolization was considered to prevent

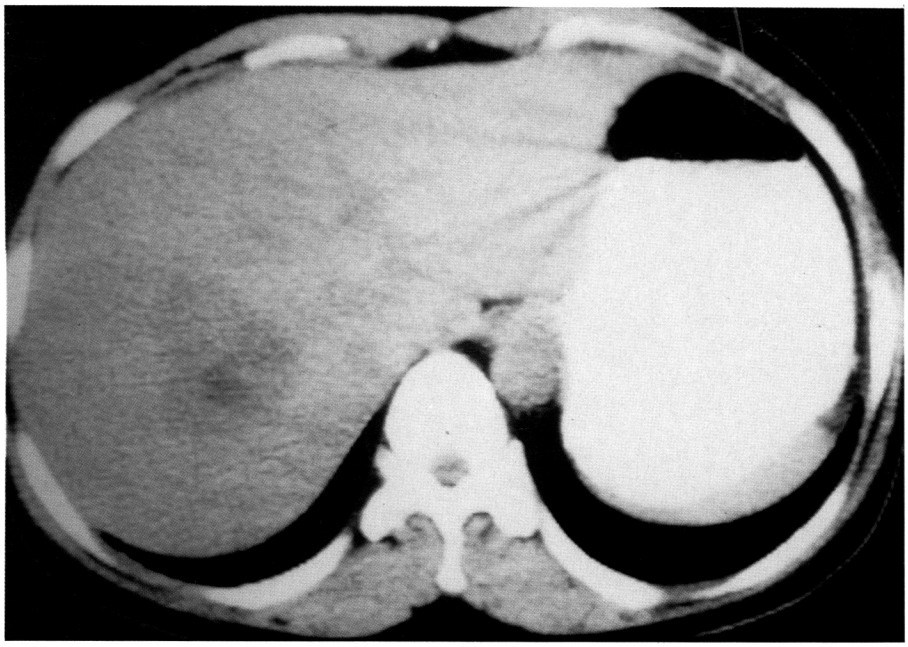

Fig. 2. CT scan of the abdomen, disclosing a low density mass at the posterior segment of the liver.

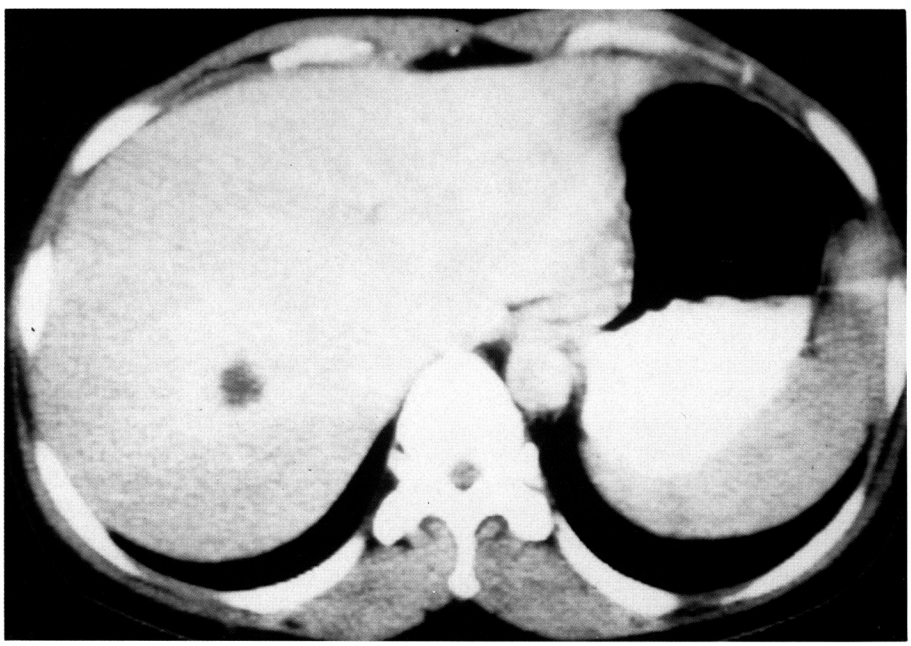

Fig. 3. Contrast-enhanced CT scan of the abdomen disclosed a strongly enhancing mass except for the central area.

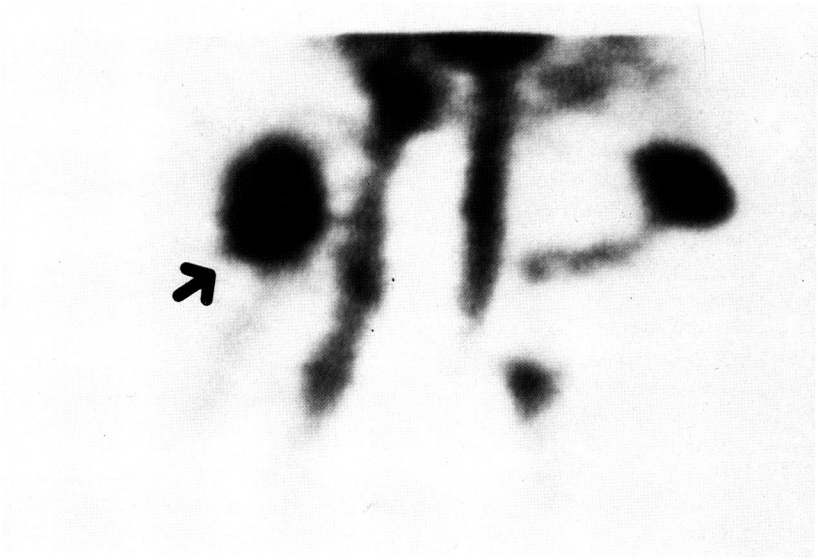

Fig. 4. 99m-Tc red blood cell hemangioma SPECT, showing a 'hot spot'(arrow) with central sparing in delayed blood pool images.

complications or recurrence of symptoms, but the patient elected to observe because symptoms subsided with medical management. Two weeks after defervescence she discontinued antipyretics without recurrence of fever. An abdominal CT scan 1 year later showed no interval change of hemangioma except a slightly decreased size of central thrombosis. She has been doing well for 2 years since the diagnosis.

DISCUSSION

Cavernous hemangioma is the most common benign tumor of the liver, which is found in about 2% of autopsy patients(Ochsner, 1958). The patients with small hemangioma are asymptomatic, but large or multiple lesions may cause symptoms due to pressure on adjacent organs and intralesional bleeding or thrombosis. Abdominal pain or mass is the most common presenting symptom, but there were a few reports of hepatic hemangioma presenting with fever(Fenster, 1978).

Our patient presented with 15 days' duration of fever and was subjected to a large number of laboratory tests including various imaging studies. Several studies for screening of infectious disease were negative. Serologic evidence of connective tissue disease was also absent. Dynamic contrast CT or angiography are diagnostic of cavernous hemangioma(Freeny, 1986). 99m-Tc red blood cell hemangioma SPECT is also highly sensitive and specific means of evaluating cavernous hemangioma, and, therefore, becoming more generally recognized as a useful technique(Zeissman, 1990). Although dynamic CT was not performed in our patient, an abdominal CT scan showed a strongly enhanced mass lesion with central filling defect after injection of intravenous contrast medium, which was located at the right posterior segment of the liver. 99m-Tc red blood cell hemangioma SPECT revealed that the lesion appeared as a 'cold area' in initial perfusion phase, but became a 'hot spot' with central 'cold area' in delayed blood pool images, which is nearly diagnostic of cavernous hemangioma. Despite the risk of serious hemorrhages, percutaneous needle aspiration was performed to rule out the presence of malignant lesions. However, only blood was aspirated, and cytologic examination was negative. Therefore, a definitive diagnosis of hemagioma with central thrombosis was confidently made. The fever subsided gradually after prescription of antipyretics.

The mechanism of the fever caused by the hemangioma remains unclear, but it may be associated with injury to circulating blood cells, leading to release of endogenous pyrogen and subsequent fever(Adams, 1970). When the hemangioma is large

and symptomatic, it should be surgically resected because of the possibility of serious complications, such as rupture(Adson, 1986). If excision is not possible, irradiation(Park, 1970) or transarterial embolization(Freeny, 1979) may be attempted. However, our patient elected to observe, and she was managed successfully with antipyretic. An abdominal CT scan 1 year later showed no significant growth of the hemangioma with partial resolution of the thrombosis. She has been doing well for 2 years since the diagnosis.

We report a case of giant hemangioma of the liver presenting with fever, that was successfully treated with conservative management. Furthermore, we propose that hepatic hemangioma should be considered as one of the causes of fever of unknown origin.

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