A LARGE HEPATOMA WITHOUT APPARENT ABNORMALITY ON LAPAROTOMY

TOSHIHARU TSUZUKI,* AKITAKE HASUMI,* YOSHIAKI SUGIURA,* MASAHARU TSUCHIYA,** KIYOTAKA KAMEGAYA** and KYOICHI HIRAMATSU***

Departments of Surgery, Internal Medicine and Radiology,
School of Medicine, Keio University, Tokyo, Japan

(Received for publication September 24, 1973)

ABSTRACT

A 68-year-old man was admitted with a palpable liver and a defect in scintigram. Selective celiac arteriography showed a rounded hypervascular tumor with the diameter of 13.5 cm situated in the bifurcation of the hepatic artery. Laparotomy revealed that the liver was normal in appearance and tumor was not palpable. However, needle and wedge biopsy examination disclosed hepatoma deep in the liver with hepatic fibrosis.

Inspection and palpation at operation are not always reliable guidelines and open biopsy should be utilized for the identification of liver cancer and concomitant diseases and to determine the resectional line at the time of hepatectomy.

The paucity of the pathognomonic symptoms and signs is the primary cause for the delay in the diagnosis of liver cancer. Even a large tumor may be silent for a considerable period until it is confirmed by laparotomy. It seems to be a general feeling that a large hepatoma can easily be identified by laparotomy. However, laparotomy may fail to disclose the presence of a large hepatoma. Recently we have encountered a case which was diagnosed preoperatively as a large hepatoma of a massive type by angiography but the tumor was not readily identified by inspection and palpation at the operation. This experience was instructive in reminding us of the necessity of utilizing biopsy for the identification of the nature of the lesion within the liver. This report concerns the detailed

* Department of Surgery.
** Department of Internal Medicine.
*** Department of Radiology.
CASE REPORT

A 68-year-old male patient visited the Outpatient Clinic of the Internal Medicine of the Keio University Hospital on April 20, 1972, with the chief complaint of dull pain in the epigastrium and weight loss. He was told that he had a palpable liver with a defect in liver scintigram and was recommended admission. Physical examination showed no abnormalities except the palpable liver. The liver could be felt 2 finger breadths below the right costal margin and was soft and smooth. The abdomen was flat and soft. Neither ascitic signs nor dilatation of the veins in the abdominal wall were observed. The spleen was not palpable. Routine laboratory examination revealed no abnormalities. Liver function tests were all within normal limits. X-ray examination of the gastrointestinal and biliary tracts showed no abnormalities. Alpha-fetoprotein measured by a one-layer immunodiffusion method was negative but Australian antigen was positive with negative result of antibody. Selective celiac arteriography disclosed that a large rounded tumor was situated in the bifurcation of the right and left hepatic artery in arterial phase (Fig. 1). The tumor was quite hypervascular with the diameter of 13.5 cm. The tumor stain and pooling were prominent in capillary and venous phase (Fig. 2). Inferior venacavography revealed narrowing of the infradiaphragmatic portion of the inferior vena cava due to the

Fig. 1 Selective celiac angiogram (arterial phase). A large rounded tumor is situated in the bifurcation of the right and left hepatic artery.
Hepatoma without Apparent Abnormality on Laparotomy

Fig. 2 Selective celiac angiogram (capillary phase). The tumor is hypervascular and tumor stain and pooling are prominent.

Fig. 3 Operative findings. The liver is normal in appearance and no tumor is palpable.

Compression of the tumor and hepatic venography showed that the hepatic vein was displaced anteriorly by tumor. The diagnosis of hepatoma was made and laparotomy was performed on June 20, 1972. The liver was soft and smooth with normal color. A shallow groove measuring 5 to 6 mm in length was observed on the dome of the medial part of the left lobe. The liver was normal in appearance and no tumor was palpable (Fig. 3). Ascites was not observed in the abdominal
cavity. A liver needle biopsy was performed at site 2 cm. medial to the falciform ligament, 3 cm in depth, and a wedge biopsy was taken from the anterior edge of the left hepatic lobe. The biopsy specimens were sent to the Department of Pathology for frozen section. The microscopic examination of the biopsy specimen taken from the medial part of the left lobe showed the picture of hepatoma. The tumor cells were arranged in a trabecular pattern in general with an acinar formation one to several cells thick. This picture was compatible with that of liver cell carcinoma with trabecular structure designated by Edmondson (Fig. 4). The tumor cells were cuboidal or polygonal in shape, with fine eosinophilic granules in the cytoplasm. Pleomorphism and hyperchromatism of nuclei and mitosis were observed in some parts of the specimen. The stroma were scanty. A microscopic examination of the biopsy specimen taken from the liver edge revealed a typical picture of hepatic fibrosis.

Operative portography through the mesenteric vein revealed that the portal vein was patent and intrahepatic branches were depressed down by the tumor. Portal pressure measured 150 mm H₂O. Since the tumor was situated in the

Fig. 4 Photomicrograph of the biopsy specimen taken from the medial part of the left lobe. The tumor cells are arranged in a trabecular pattern with an acinar formation one to several cells thick. Hyperchromatism and mitosis (a large arrow) are observed. Finger-like masses of the tumor cells with the endothelial investment (small arrows) fairly characteristic of hepatoma are observed (H & E stain × 250).
bifurcation of the hepatic artery and the intrahepatic branches of the portal vein were depressed by the tumor, the tumor was deemed to be unresectable. An attempt to insert a teflon tube through the right gastroepiploic artery into the hepatic artery was unsuccessful and the abdomen was closed.

Postoperatively, a Cook green catheter (PERT-4.1) with an internal diameter of 0.86 mm was introduced through the femoral artery into the celiac axis by the Seldinger technique and anticancer chemotherapy was performed through this route. Two hundred and fifty milligrams of 5-Fluorouracil was administered every day with the use of chronofusor, with intermittent injections of Mitomycin C. The selective celiac angiography was performed serially four times in order to inspect the growth of the tumor. A total amount of 19,750 mg of 5-Fluorouracil and 18 mg of Mitomycin C were given for 6 months. Over this period the tumor showed no signs of enlargement. The patient was discharged on December 20, 1972 and was followed up in the Outpatient Clinic. Thereafter, a total amount of 5600 mg of Endoxan was administered. Selective celiac angiography was performed on May 30, 1973. Although the tumor spreads over right lobe of the liver, the patient is alive without the sign of accumulation of ascites.

DISCUSSION

The majority of liver cancer is far-advanced and is beyond the reach of curative resection. However, with the development of selective angiography and the detection of alpha-fetoprotein in the serum, an early diagnosis of liver cancer is expected to be realized in near future. It has been increasingly noted that abnormal findings are detected angiographically in clinically silent patients. Some authors recommend preoperative biopsy, especially under the control of peritoneoscopy, as a tool for a confirmatory diagnosis, while other authors disagree because of the possible bleeding after biopsy. It may be the general feeling that a confirmatory diagnosis is established on the grounds of operative findings. However, our experience casts doubt on this prevalent feeling in that a large hepatoma may escape detection even by inspection and palpation at the operation. It is our opinion that inspection and palpation are not always reliable and the hepatic lesion should be identified based on histological findings, utilizing open biopsy. The inability of establishing a precise diagnosis through operative findings might have been due to the homogeneous consistency of the tumor because of the scarcity of stroma.

The resectional line at the time of hepatectomy has been determined as the border line between the portions of normal color and discolored portions after
ligation of a hepatic artery and portal vein at the hilum. However, the resected liver stump is not necessarily free from persistence of cancer cells. Inspection and palpation are not necessarily reliable criteria for this purpose but a microscopic examination of the biopsy specimen can offer a clue.

The nature of concomitant disease with hepatoma is also a crucial point at the time of hepatectomy. It is said that 80% of the normal liver can be resected without hepatic failure, whereas 30% is the limit of hepatectomy that can be tolerated in the cirrhotic liver. Advanced cirrhosis can be readily identified by inspection but early cirrhosis or fibrosis can be identified only with the aid of the histological examination.

Based on these contentions, it is our opinion that biopsy specimens should be actively utilized not only for the identification of hepatic tumors and concomitant diseases but also to determine the resectional line at the time of hepatectomy.

REFERENCES