HEPATIC ARTERY TRAUMATIC ANEURYSM

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The diagnosis of intrahepatic aneurysm was suspected following radioisotope scintigraphic studies. A patient developed abdominal pain following blunt abdominal trauma. The scintigrams of the liver revealed a large intrahepatic defect and separation between lung and liver. Angiogram revealed a large false aneurysm of the right hepatic artery.

Radioisotope scintigraphy has been increasingly useful in the diagnosis of traumatic injuries of the liver and spleen (1–4). This report describes the scintigraphic demonstration of a large intrahepatic false aneurysm of the right hepatic artery in a patient who suffered blunt abdominal trauma.

CASE REPORT

A 43-year-old white male was observed for 2 weeks at a local hospital because of continuing abdominal pain following an automobile accident. One day after discharge he developed severe abdominal pain and was readmitted to the same hospital. The pain worsened and on the 22nd day after the accident a laparotomy was performed and a laceration of the inferior border of the right lobe of the liver was repaired. After an uneventful 10-day period of recuperation, the patient was again discharged. During the next 48 hr the patient developed severe abdominal pain, distension, and low-grade fever. He returned to the local hospital where he was found to be markedly anemic and in acute distress. After transfusion of four units of whole blood the patient was transferred to the Cincinnati General Hospital.

On admission the patient was acutely ill with marked scleral icterus. The abdomen, bearing a healed right upper quadrant incision, was distended. The liver was palpable 3 cm below the right costal margin and percussion revealed shifting dullness. No thrill or pulsatile mass was noted.

An emergency liver scintigram using 3 mCi $^{99m}$Tc-sulfur colloid showed a large intrahepatic defect in the right lobe. The patient then received 3 mCi $^{99m}$Tc-macroaggregated human serum albumin, which demonstrated separation of the dome of the liver from the lower margins of the right lung (Fig. 1). On the basis of these findings a dissecting hematoma was suggested and an emergency celiac angiogram was performed.

FIG. 1. Liver scintigrams (left column) demonstrate large intrahepatic defect. This represented false aneurysm and clot. Liver-lung study (right column) shows area of decreased activity that was subdiaphragmatic hematoma.

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Previous reports of the scintigraphic abnormalities in hepatic trauma have emphasized displacement of the liver by subcapsular masses and parenchymal lesions due to penetrating injuries (1, 6–8). Mehnert and Freeman describe a patient with an intraparenchymal hepatic aneurysm and jaundice who had no trauma (9). Injection of $^{131}$I-serum albumin after the liver scan demonstrated the vascularity of the lesion.

Our experience with this case reemphasizes the association of the sudden onset of jaundice with intraparenchymal hepatic aneurysms. It also points out how valuable scintigraphy can be in evaluating patients prior to hepatic surgery. With currently available techniques and pharmaceuticals, scintigraphy represents a safe, reliable, low-risk, and noninvasive source of diagnostic information in the acutely ill patient.

REFERENCES


**FIG. 2.** Arterial phase of selective celiac arteriogram showing large intraparenchymal mass associated with false aneurysm of right hepatic artery. Liver parenchymal vessels are separated from diaphragm by large avascular subdiaphragmatic hematoma.

Hepatic artery aneurysms have been reported as an unusual cause of obstructive jaundice. The aneurysms usually are caused by arteriosclerosis, infarction, or trauma. The jaundice is thought to result from compression of the hepatic biliary ducts either by the aneurysm directly or by the mass effect of the hematoma (5).

At operation, the peritoneal cavity was filled with unclotted blood. The large aneurysm had formed a softball-sized hematoma that had dissected to the hilum of the liver and then extended laterally separating the liver from the lateral wall of the peritoneum. The hematoma then continued superiority to separate the dome of the liver from the diaphragm. A right hepatic lobectomy was performed and after a stormy postoperative period the patient recovered completely.

**DISCUSSION**

Hepatic artery aneurysms have been reported as an unusual cause of obstructive jaundice. The aneurysms usually are caused by arteriosclerosis, infarction, or trauma. The jaundice is thought to result from compression of the hepatic biliary ducts either by the aneurysm directly or by the mass effect of the hematoma (5).

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