OBSTRUCTIVE JAUNDICE CAUSED BY HEPATIC ARTERY ANEURYSM

DEMONSTRATION BY RADIONUCLIDE IMAGING TECHNIQUES

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Because of its great pliability, the liver may change its shape when impinged upon by disease processes in neighboring organs and structures (*1*). The resultant liver scan in patients with such problems frequently has defects that are indistinguishable from true intrahepatic space-occupying lesions. Nonparenchymal intrahepatic problems such as dilated biliary ducts may cause a similar picture on the liver scan (*2,3*). To our knowledge, this is the first reported incidence of an hepatic artery aneurysm being demonstrated by the combined technique of conventional colloid and blood-pool imaging of the liver.

CASE REPORT

MR is a 75-year-old white male with a 2-week history of painless jaundice, pruritis, and anorexia. There was no history of previous biliary disease or cirrhosis. During this 2-week period, the patient had clay-colored stools and dark urine. Physical examination revealed a well-developed, well-nourished white man who was obviously jaundiced. No abdominal masses were felt, and the patient had an enlarged liver.

Positive laboratory results included a bilirubin of 33.5 mg% (direct 20.5 mg%), an alkaline phosphatase of 46 Bodansky units, and an SGOT of 60 units. An upper gastrointestinal series demonstrated a retrogastric mass. A liver scan performed with 530 μCi of ^{99m}Tc-sulfur colloid revealed a paucity of activity in the left lobe and medial part of the right lobe of the liver, consistent with space-occupying disease (Fig. 1A). Serial scans with ^{131}I-rose bengal suggested biliary-tract obstruction.

An exploratory laparotomy was performed and a pulsatile mass was found in the region of the porta hepatis. An aspiration of the mass showed arterial blood. The lymph nodes in the area were biopsied and found to be negative. The operation was then terminated.

A repeat liver scan with 300 μCi of ^{131}I-human serum albumin showed an ovoid region of activity in a portion of the area previously suspected to be a space-occupying defect (Fig. 1B). A pancreas scan was normal. An aortagram and hepatic angiogram were performed and demonstrated a large aneurysm of the hepatic artery partially filled with clot (Fig. 2).

The patient was subsequently reexplored, and a cholecystectomy and common bile duct exploration

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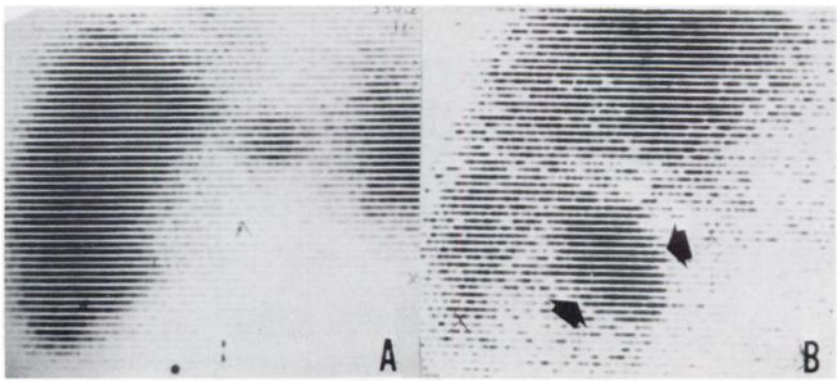

FIG. 1. A, conventional liver scan performed with ^{99m}Tc-sulfur colloid, reveals defect in left lobe and medial portion of right lobe. B, hepatic blood-pool scan performed with ^{131}I-HSA demonstrates large ovoid area of activity in region of previous liver scan defect.

FIG. 2. Midphase selective hepatic angiogram shows moderate opacification of large hepatic artery aneurysm (arrows) later found at surgery. Surrounding branch vessels are draped around aneurysm. Earlier film revealed jet of contrast media from hepatic artery filling aneurysmal sac.

were performed. The common duct was dilated, and the large aneurysm was adherent to it. The aneurysmal sac was opened and the feeding vessel ligated. A postoperative cholangiogram failed to demonstrate obstruction, and the bilirubin slowly fell to 2 mg%.

DISCUSSION

Hepatic artery aneurysms are usually solitary and may occur anywhere from the celiac axis to the intrahepatic branches. Extrahepatic aneurysms are four times more common than the intrahepatic variety.

The most common etiologic factors are arteriosclerosis, infection, and trauma. The triad of pain (70% of cases), gastrointestinal bleeding (60%), and jaundice (50%) should lead one toward the correct diagnosis. Physical examination may reveal an abdominal mass, thrill, or a bruit (*4*). Radiographically, there may be right upper quadrant calcification (*5*). A retrogastric mass or pressure on the duodenal bulb may be seen on gastrointestinal series.

As in the present case, an aneurysm of the hepatic artery may appear as a defect on a colloid liver scan. If the diagnosis of an hepatic artery aneurysm is suspected, a repeat scan with a blood-pool agent may demonstrate activity in the area that was void on the colloid scan.

SUMMARY

A case of obstructive jaundice secondary to an hepatic artery aneurysm is presented. The liver scan with ^{99m}Tc-sulfur colloid demonstrated a defect which subsequently filled with ^{131}I-human serum albumin activity. The ovoid shape of the blood-pool activity was proven to be aneurysm by angiography. Surgical confirmation was also obtained.

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