USE OF SCINTIPHOTOGRAPHY TO OUTLINE ABDOMINAL MASSES

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Radiologic contrast media are routinely used to outline the gastrointestinal tract and detect mass lesions which displace the stomach and bowel. Radioisotopes may also be used for this purpose, and this report describes two cases in which the liver, stomach, and bowel were simultaneously outlined with ^{99m}Tc to demonstrate abdominal masses displacing these organs.

Case 1. A 65-year-old man presented with a 5-week history of a tender enlarging epigastric mass. Five years earlier a Polya gastrectomy had been performed for gastric ulcer, and subsequently the patient had been well until this illness. On examination he was febrile and had a tender epigastric mass which appeared to be attached to the abdominal wall. There were no other abnormal findings.

Scintiphotos of the liver were taken after intravenous injection of 1 mCi of ^{99m}Tc-sulfur colloid, and these were normal. The mass was then positioned in the camera field, 1 mCi of ^{99m}Tc-sulfur colloid was administered orally, and scintiphotos were taken over a 20-min period. These showed that the gastric remnant was displaced to the left. Isotope rapidly entered the intestine, and the mass was outlined as an area devoid of activity beneath the left lobe of the liver (Fig. 1).

At laparotomy an inflammatory mass was found between the stomach and liver on the top and the transverse colon below. This was thought to arise from the residual greater omentum, and a provisional diagnosis of lipogranulomatosis of the omentum was made. The mass was biopsied, and the abdomen was closed.

Microscopic examination confirmed the inflammatory nature of the lesion, and the patient made an uncomplicated recovery.

Case 2. A 25-year-old man sustained abdominal injuries in a motor vehicle accident and at laparotomy was found to have a transected body of pancreas, ruptured splenic vein, and perforated proximal jejunum. Splenectomy and distal pancreatectomy were performed, and the perforated segment of jejunum was resected.

One week postoperatively the patient became febrile and developed a neutrophil leucocytosis. Barium meal examination showed a normal stomach and an atonic dilated duodenal loop. Chest x-ray showed a left pleural effusion.

Scintiphotos of the liver and spleen were normal, and 1 mCi of ^{99m}Tc-sulfur colloid was given orally. This showed the stomach to be displaced medially and upwards, and as the isotope passed into the bowel an area of absent activity was outlined by the

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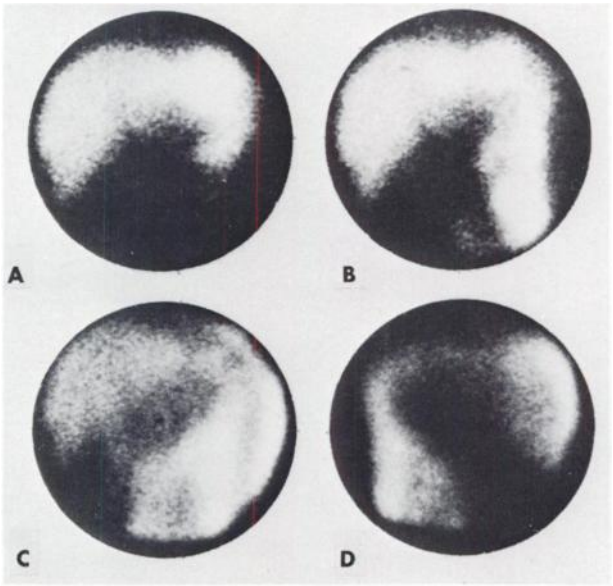

FIG. 1. A–C are serial scintiphotos of the left upper quadrant of the abdomen after i.v. and oral administration of ^{99m}Tc-sulfur colloid showing an area devoid of activity beneath the left lobe of the liver. D is posterior view taken after C, a combined emission–transmission scintiphoto.

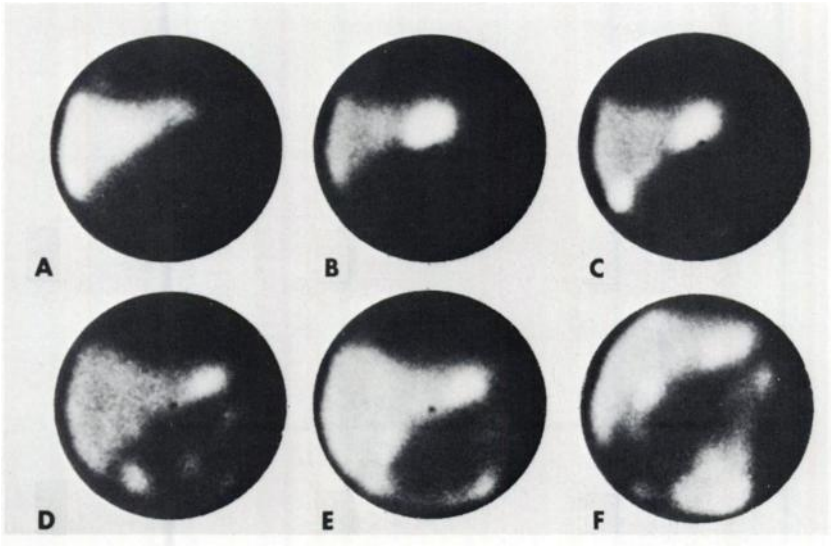

FIG. 2. A is scintiphoto of left lobe of liver after i.v. administration of ^{99m}Tc-sulfur colloid. B–F are serial scintiphotos taken after subsequent oral administration of ^{99m}Tc-sulfur colloid showing area devoid of activity outlined by liver, stomach, and bowel.

liver and stomach at the top and the intestine below (Fig. 2).

The patient had several small hematemeses, and an epigastric mass became palpable. He continued to deteriorate, and after he had a large hematemesis laparotomy was again performed. This showed that the source of the bleeding was an extensive area of duodenitis. A large mass was felt in the head of the pancreas but was not drained.

The patient failed to recover and died 2 days postoperatively. Autopsy revealed a large abscess in the head of the pancreas.

SUMMARY

Two cases are reported which demonstrate how scintiphotography after intravenous and oral administration of ^{99m}Tc-sulfur colloid can provide a rapid, easy, and atraumatic means of outlining abdominal masses.