

Enterogastric Reflux Demonstrated by Radionuclide Hepatobiliary Scintigraphy

Wei-Jen Shih and Daniel S. Fockele

A 40-year-old man (patient 1) underwent an emergent exploratory laparotomy following a motor vehicle accident. At surgery the only finding was a liver laceration, which was small enough that no treatment was necessary. Postoperatively he developed diffuse abdominal tenderness and vomiting necessitating nasogastric suction. The aspirate was guaiac positive.

The patient's liver function tests showed mild elevation of bilirubin, alkaline phosphatase, and transaminases. There was mild leukocytosis with left shift. Abdominal radiographs demonstrated a postoperative ileus. Abdominal computed tomography scan was essentially negative. The problems persisted and at this point the patient was 1 week status postsurgery when the technetium ^{99m}Tc -diisopropyl iminodiacetic acid (DISIDA) hepatobiliary scintigram was obtained.

The scintigram (Fig 1) shows prompt clearance of radiotracer from the blood pool, visualization of bowel activity beginning at 10 minutes, and more bowel activity at 30 and 40 minutes. Gallbladder activity was visualized beginning at 45 minutes. Significant tracer is seen in the stomach region and it increased with time even more than the activity in the bowel. The findings were consistent with bile reflux to the stomach and were compatible with the clinical findings. The patient's ileus slowly resolved, as did his nausea and vomiting.

A 67-year-old man (patient 2) had a subtotal gastrectomy for peptic ulcer disease. He had no gastrointestinal complaints at the time of presentation. ^{99m}Tc DISIDA hepatobiliary scintigram (Fig 2) shows rapid radiotracer localization in the liver, gallbladder activity beginning at 15 minutes, and bowel activity at 30 minutes. A small amount of radioactivity is seen in the region of the stomach in the 45-minute image.

Postsubtotal gastrectomy patients may develop duodenogastric reflux¹ such as occurred in patient 2 despite absence of upper gastrointestinal symptoms. Exploratory laparotomy alone as a cause of duodenogastric reflux as seen in patient 1 has not been reported.

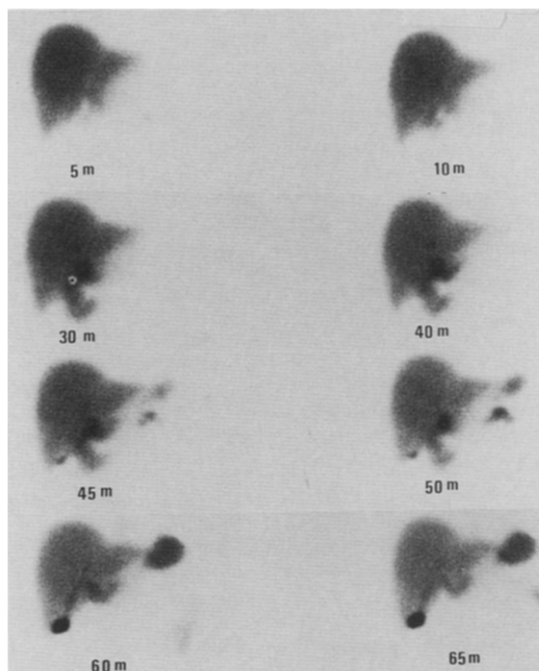


Fig 1. ^{99m}Tc -DISIDA hepatobiliary scintigram shows rapid radiopharmaceutical concentration in the liver, appearance of bowel activity beginning at 10 minutes, and gallbladder activity seen after 45 minutes. There is also gradual accumulation of radiotracer in the stomach region in the images from 45 minutes to 65 minutes indicating duodenogastric reflux.

COMMON

1. Normal¹⁻⁷
2. Postoperative status of all kinds of upper gastrointestinal surgery^{1,6,8-10}
3. Postcholecystectomy⁹⁻¹¹
4. Pancreatitis^{12,13}
5. Focal inflammation of bowel¹²
6. Hepatic abscess¹²
7. Acute cholecystitis^{12,14,15}
8. Chronic cholecystitis¹⁴

From Nuclear Medicine Service, Department of Veterans Affairs Medical Center, and Nuclear Medicine Service, University of Kentucky Medical Center, Lexington, KY.

Address reprint requests to Wei-Jen Shih, MD, Division of Nuclear Medicine Service, University of Kentucky Medical Center, Lexington, KY 40536.

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0001-2998/90/2004-0008\$05.00/0*

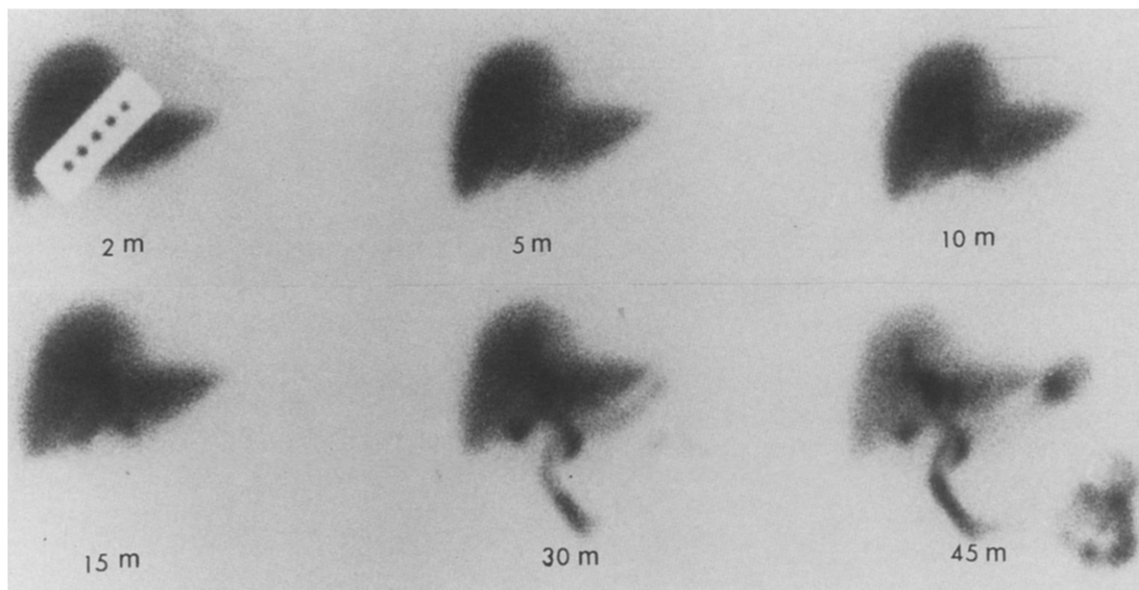


Fig 2. ^{99m}Tc -DISIDA hepatobiliary scintigram of patient 2 shows normal radiopharmaceutical accumulation in the liver and gallbladder activity beginning at 15 minutes and bowel activity at 30 minutes. At 45 minutes a small amount of radiotracer is seen in the stomach region.

9. Sepsis¹²
10. Normal in the postprandial period¹⁶

UNCOMMON

1. Gastrointestinal bypass surgery for obesity¹⁷
2. Duodenal perforation¹⁸

3. Primary gastropathy¹⁹
4. Chronic ulcer of the duodenal bulb¹⁹
5. Moynihan's disease (typical ulcer symptomatology although no lesion is visualized at endoscopy and/or radiology)¹⁹
6. Exploratory laparotomy

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