Bile Leak Leading to Lesser Sac Bile Collection Masquerading as Stomach in Hepatobiliary Scintigraphy

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Images show normal tracer distribution in graft hepatocytes. Abnormal bile collection seen along the inferior margin of the liver which progressively collects at lesser sac (LS) displacing and compressing stomach (S) superolaterally (confirmed in Magnetic Resonance Imaging [MRI] coronal section). There is normal progression of tracer into intestinal loops. The first minute of dynamic image shows a large cold defect at the anatomical site of stomach which is in fact the unlabeled bile collection at LS (thin arrow) (Figure 1). As tracer progresses through biliary tree, radiolabelled bile starts collecting at the above site which is evident in the 15th minute image. The size and location of biliary collection remains unchanged even at 2 h delayed imaging. Normally stomach is not seen on an HBS. Commonest cause of stomach visualization on hepatobiliary scan is enterogastric bile reflux.¹ If not careful, one may easily misinterpret and report the LS bile collection to be the stomach (by its size and placement) from an enterogastric reflux. The other teaching point is enterogastric reflux is best noticed in endless cine loop images as a jet of retrograde flow of tracer from duodenum into stomach in the first few minutes

after injection which is the time taken for tracer transit through biliary radicles, common bile duct and hepatic outflow tract. Computed tomography (CT) and MR cholangiopancreatography (MRCP) images (Figures 2 and 3) confirm gross collection (12 × 10 cm) in the epigastrium adjacent to the cut surface of liver displacing and compressing the stomach laterally. Single photon emission computed tomography–computed tomography (SPECTCT) or MR correlation may be useful in identifying the displaced stomach. Bile leak collecting in lesser sac of peritoneum is important as it guides clinicians to decide on the site of placement of the drain tube in the abdomen. Biliary complications affect one in five liver transplant recipients.² Incidence of biliary complications is higher (20–34%) after right-lobe live donor liver transplantation than from cadaveric transplants.³ Endoscopic retrograde cholangiopancreatography is the first-line treatment for biliary complications.⁴ HBS apart from identifying bile leaks is routinely used in postoperative patients for evaluating biliary-enteric anastomosis patency and in post-cholecystectomy patient with recurrent pain.¹

Keywords: 99mTc mebrofenin scintigraphy, bile leak, lesser sac collection, post liver transplant

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Abbreviations: CT: computed tomography; HIDA scan: hepatobiliary scintigraphy; LS: lesser sac; MRCP: MR cholangiopancreatography; MRI: magnetic resonance imaging; SPECTCT: single photon emission computed tomography–computed tomography

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Figure 1 HBS dynamic and static images. (A) Dynamic images (1 min/frame) show a large cold defect at the anatomical site of stomach (thin arrow). There is slow progressive collection of radiolabelled bile at the above site which is evident at 15th minute image and persists till 2 h. (B) Static images shows abnormal biliary collection along the inferior margin of the liver (thick arrow) which progressively collects at lesser sac (LS) displacing stomach (S) superolaterally (confirmed in MR coronal section Fig. 3B).

Figure 2 Transaxial CT image showing gross collection (12 × 10 cm) in the epigastrium adjacent to the cut surface of liver (thick arrow) displacing and compressing the stomach laterally (dotted arrow). LS: lesser sac.

Figure 3 MRCP coronal images (A & B) show gross collection (12 × 10 cm) in the epigastrium adjacent to the cut surface of liver (thick arrow) displacing and compressing the stomach (S) laterally (thin arrow). LS: lesser sac.

CONFLICTS OF INTEREST

All authors have none to declare.

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