Gallbladder Emulating Hepatic Haemangioma on Gastrointestinal Bleed Scan

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Abstract

Tc-99m labelled erythrocyte scan is a sensitive method for detection of gastrointestinal (GI) bleed and liver haemangioma but false positive results can occur, as in this case gallbladder is visualized which is not a common finding. Single-photon emission computed tomography/computed tomography (SPECT-CT) is helpful to avoid such false-positive results.

Keywords: GI bleed study, gallbladder visualization, SPECT-CT.
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A 70-year-old male, with known chronic kidney disease, now maintained on haemodialysis for last 1 year had a history of on and off melena and chronic anaemia for which multiple blood transfusions were given. Ultrasound abdomen showed enlarged fatty liver. Upper GI endoscopic findings were unremarkable while colonoscopy revealed non-bleeding rectal polyp. Patient was referred to nuclear medicine department for GI bleed study. Scan acquired 600 MBq of Tc-99m labelled erythrocytes following in vivo technique; revealed an active bleeding site in jejunum. Further evaluation on capsule endoscopy performed later confirmed the bleeding site. Focal radiotracer uptake in right hypochondrium was also identified from the beginning of dynamic imaging with increase in intensity over time. Hepatic haemangioma was suspected as previous studies have shown it can co-exist with acute GI bleed.[1] Subsequently SPECT-CT images were acquired (128x128 matrix, 6° angle steps, 20 s/frame). The acquisition parameters for CT were: 130 keV, pitch 1.0, rotation time 0.6 s, and slice thickness 1.25 mm that localized diffuse uptake in gallbladder.

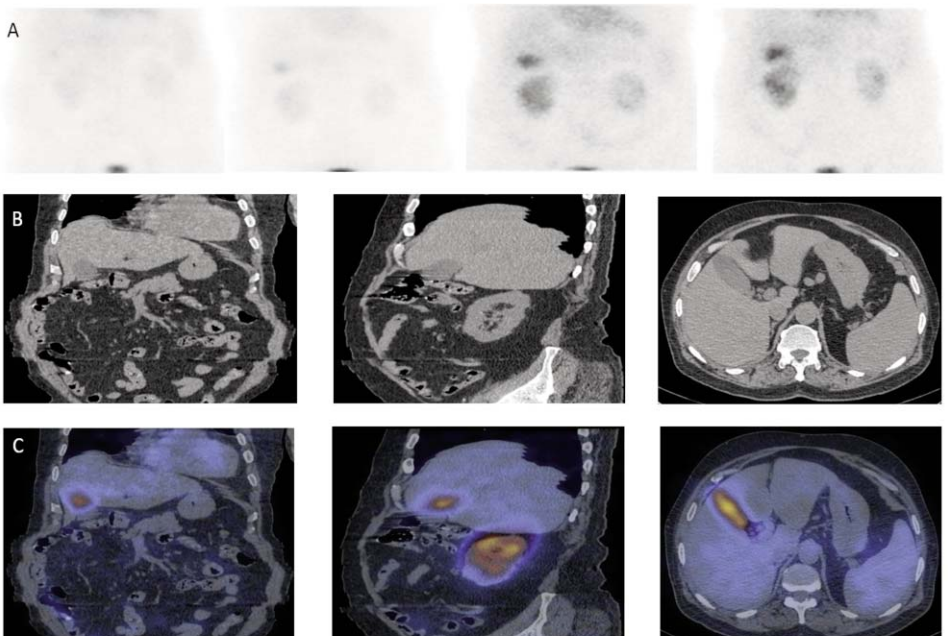

Figure: Gallbladder uptake and acute GI bleed. (A) 1-minute dynamic summed images showed activity in small gut which moved over time and a fixed focal uptake in right hypochondrium. SPECT-CT imaging [(B)&(C) CT, fused SPECT-CT coronal, sagittal and trans axial planes] demonstrated that this area corresponded to the gallbladder.

Only a few cases of gallbladder visualization during Tc-99m labelled erythrocytes study have been reported; earliest reports can be found in 1984.[2-4] In previous reports gallbladder uptake was confirmed by clinical correlation and by performing additional lateral views.[5] However, with the advent of hybrid imaging, SPECT-CT is useful in characterising unexpected findings, reducing false positive rates by accurately localizing sites of radiotracer uptake.[6] Multiple transfusion related labelling of porphyrin group of haemolysed haemoglobulin with subsequent excretion in bile accounts for this scan finding, particularly in patients with severe renal impairment.[6,7] Other rare potential cause of gallbladder visualization on Tc-99m labelled erythrocytes study includes haemorrhagic cholecystitis.

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