Looking beyond Morison’s pouch in focused assessment with sonography for trauma: penetrating hepatobiliary trauma and a new sign for emergency physicians

A man presented to the emergency department with a stab wound to his right upper quadrant. His vital signs were in the normal range. Examination revealed a 1.5 cm wound at the junction of the subcostal margin and the linea semilunaris. There was localised peritonitic tenderness. Lactate was elevated at 4.3 mmol/l.

FAST ultrasound (focused assessment with sonography for trauma) was performed. Initial perihepatic imaging did not reveal fluid in Morison’s pouch (figure 1). In the course of this imaging, a thin anechoic strip was noticed around the gallbladder (figure 2). This pericholecystic fluid collection rapidly increased in size on serial FAST examination after 5 min (figure 3). He went on to have emergency CT (figure 4) prior to surgery.

The patient underwent midline laparotomy with repair of liver laceration and gallbladder. Leakage of bile and blood around the gallbladder was found during surgery. He had an uneventful post-operative course and was discharged on the seventh post-operative day.

A small volume of pericholecystic fluid is frequently seen in acute cholecystitis, and this has been infrequently described in abdominal trauma. The classic FAST findings of fluid in Morison’s pouch were initially absent in this case. However, we observed conspicuous and rapidly accumulating pericholecystic fluid. While such injuries are rare events, this case illustrates the value of serial FAST, and familiarity with pericholecystic fluid.

Figure 1  Morison’s pouch with normal interface between liver and right kidney.

Figure 2  Perihepatic view with thin anechoic strip around the gallbladder.

Figure 3  Focused assessment with sonography for trauma scan at 5 min showing rapidly increasing pericholecystic fluid collection.

Figure 4  CT abdomen showing liver and gallbladder laceration with pericholecystic fluid and fluid in hepatorenal space (Morison’s pouch).
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