Case Report

Haemobilia mimicking acute cholecystitis following percutaneous renal biopsy

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Introduction

The incidence of iatrogenic haemobilia has increased in parallel with the increasing utilization of percutaneous procedures involving the liver [1]. In the majority of instances, haemobilia is of little clinical significance. In this report, we describe a patient who presented with an intracholecystic bleed mimicking acute cholecystitis 4 days following a percutaneous renal biopsy.

Case

A 33-year-old female with a 10-year history of an uncharacterized rheumatologic disorder underwent a percutaneous biopsy of her right kidney because of persistent haematuria, proteinuria, and mild renal insufficiency. Both kidneys were identified by ultrasonography with the patient in the prone position. A 15-gauge spring-loaded biopsy needle was inserted perpendicular to the skin at a site marked by ultrasound guidance. Two passes were performed, each yielding tissue, which demonstrated glomeruli under low power microscopy. No perinephric haematoma was evident on post-procedural ultrasound. The patient’s post-biopsy haematocrit was 40% compared with her pre-biopsy haematocrit of 43.9%, and the patient was discharged the following morning.

The patient presented to the emergency department 4 days later with complaints of right flank and upper abdominal pain, which had worsened acutely over the previous 12 h. Her medications upon admission included prednisone at 40 mg a day. The patient had been on chronic steroids for several years for her rheumatologic disorder. She denied any fever, chills, nausea, or vomiting. On exam, the patient was tender in the right upper quadrant (RUQ) with voluntary guarding. Rectal exam revealed guaiac positive stool. Laboratory values were significant for white blood cell count of 12 000/mm³, alanine aminotransferase of 158 U/l, aspartate aminotransferase of 310 U/l, and total and direct bilirubins of 1.6 and 0.9 mg/dl, respectively. Her haematocrit was 39.2%. Ultrasound revealed a distended gallbladder with a large amount of heterogeneous material consistent with blood or sludge but no stones. No gallbladder wall thickening or pericholecystic fluid was noted. Biliary ducts were of normal calibre. Computed tomography scan confirmed the presence of a distended gallbladder with heterogeneous, high-attenuation material consistent with blood or sludge. No perihepatic or perirenal haematoma was noted (Figure 1).

The patient’s hospital course was notable for persistent localized RUQ pain and tenderness and a continued decrease in her haematocrit to 32.6%. Nuclear imaging scan demonstrated delayed gallbladder filling, but no evidence of acute calculous cholecystitis. The final report from the biopsy, in addition to the kidney findings, revealed the presence of a small fragment of...

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Fig. 1. Computed tomography of the upper abdomen revealing a distended gallbladder filled with a heterogeneous, high attenuation substance consistent with blood or sludge. No perihepatic fluid collection is seen.
liver tissue without evidence of gallbladder epithelium. Because of the patient’s persistent abdominal pain and decrease in haematocrit, the patient was taken to the operating room for a laparoscopic cholecystectomy.

Laparoscopic exploration was negative except for a distended and discoloured gallbladder (Figure 2). No blood or bile was noted in the peritoneal cavity. No perihepatic haematoma or evidence of injury to the liver capsule was seen. The gallbladder appeared grossly distended but not acutely inflamed. The cystic duct did not appear to be dilated. After successful laparoscopic removal, the gallbladder was opened and examined. No stones were seen, but a large amount of clotted blood was extruded (Figure 3). No macroscopic evidence of injury to the gallbladder wall was noted. Final pathology confirmed a gallbladder with areas of focal mucosal inflammation, acute and chronic, and intraluminal blood clot. The patient tolerated the procedure without difficulty and was discharged on postoperative day 1.

Discussion

The increased utilization of percutaneous procedures directed at the liver has resulted in a concomitant rise in the incidence of iatrogenic haemobilia, which is now a well-documented complication of this procedure [1]. However, haemobilia following percutaneous kidney biopsy is rare. Common complications of percutaneous kidney biopsy are shown in Table 1.

In this report, we present a patient who developed haemobilia following percutaneous kidney biopsy. The patient was noted to have an intracholecystic bleed, which clinically mimicked acute cholecystitis upon presentation. The pathophysiology of this process is unclear. On the one hand, it may be that the blood found in the gallbladder had accumulated directly from the intrahepatic biliary system following inadvertent liver puncture. The patient’s transiently elevated liver enzymes, as well as the liver tissue obtained at biopsy, suggest such a liver insult. However, we did not see any evidence of biliary ductal dilatation radiologically or intraoperatively that would suggest blood in the biliary tree. On the other hand, it may be that the gallbladder itself was perforated, perhaps through the gallbladder bed, which allowed a direct bleed into the gallbladder lumen. A single case of gallbladder perforation following percutaneous renal biopsy has been previously reported [2].

The patient’s diagnosis of intracholecystic haemorrhage was based on several findings. The radiographic depiction of a distended gallbladder with heterogeneous material is highly suggestive of either sludge or blood, and should raise suspicion of the latter in the appropriate clinical setting. Occult blood in the stool found on rectal exam in a patient with RUQ pain and tenderness is also consistent with this diagnosis. In addition, the liver tissue obtained on biopsy makes haemobilia in this situation a conceivable diagnosis. This case suggests that the diagnosis of haemobilia should be considered in any patient who presents with similar signs and symptoms following a percutaneous right-sided kidney biopsy.

Also of interest in this particular patient is her longstanding history of rheumatologic disease. Haemobilia due to vasculitis of the gallbladder wall has been documented in a patient with mixed connective tissue disease (MCTD) [3], and vasculitis of the gallbladder has been seen in patients with systemic lupus erythematosus. Microscopic examination of the patient’s gallbladder showed no evidence of vasculitis and, there-

Table 1. Common complications of percutaneous renal biopsy

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<tr>
<th>Complication</th>
<th>Frequency</th>
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<td>Haematuria: microscopic (50%)</td>
<td>gross (5–9%)</td>
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<tr>
<td>Perinephric haematoma (57–85%)</td>
<td>Arteriovenous fistulas (15–18%)</td>
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<tr>
<td>Aneurysms (&lt; 1%)</td>
<td>Infections (0.2%)</td>
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fore, the haemobilia that occurred in this patient is most likely of iatrogenic origin.

The treatment of iatrogenic haemobilia can be surgical or non-surgical. Dousset et al. [4] recently reported their experience in treating this complication. They concluded that the indication for surgical intervention is limited and includes failure of embolization, acute haemocholecystitis, and failure of decompression of obstruction. Studies from the literature report a 12–21% rate of acute haemocholecystitis resulting from haemobilia [4–5]. Because this patient was at increased risk of developing cholecystitis and of developing complications from cholecystitis secondary to her prolonged steroid use, she was also considered an appropriate surgical candidate. We infer that anyone who is at increased risk of developing complications from acute cholecystitis, e.g. an immunocompromised patient, should also be considered for surgical intervention.

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References

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