

# Images of a rare case of cystic artery pseudoaneurysm in a case of calculous cholecystitis

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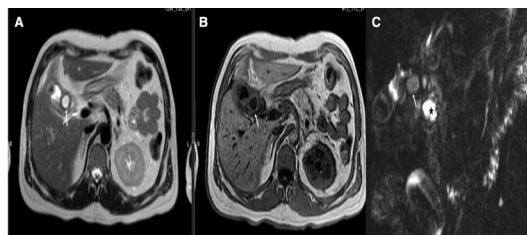
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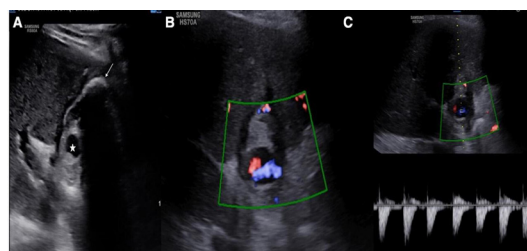
## DESCRIPTION

Cystic artery pseudoaneurysm is a very rare complication of cholecystitis. Other than cholecystitis, pancreatitis has been reported as a risk factor with the associated inflammation leading to cystic artery degeneration. Incidental findings on contrast-enhanced CT scans and magnetic resonance cholangiopancreatography (MRCP) are limited to a few cases.<sup>1 2</sup>

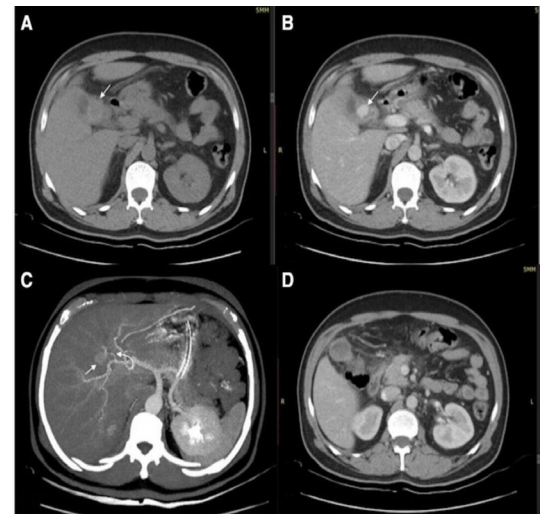
We present the case of a man in his 50s who was admitted with right upper quadrant pain



**Figure 1** MRCP images: (A) axial T2-weighted and (B) T1-weighted sequence reveals T2 hyperintense and T1 hypointense cystic structure in the neck of gall bladder (white arrows in A and B) with a T2 hypointense rim appearing slightly hyperintense on T1-weighted imaging. The gall bladder shows diffusely oedematous walls with calculus in the fundus consistent with acute cholecystitis. (C) Coronal HASTE (Half-fourier single-shot turbo spin-echo) sequence reveals that the structure (white arrow) has an intensity slightly less than that of fluid in bowel and gall bladder lumen (white star). This, and the presence of T2 hypointense rim, suggest a likely pseudoaneurysm. MRCP, magnetic resonance cholangiopancreatography.



**Figure 2** Ultrasound image showing (A) a large calculus in the fundus (white arrow) with a thick-walled anechoic cystic lesion in the region of neck (white star). (B) Doppler imaging showing yin-yang colour flow within the cyst. (C) The arterial waveform on pulse Doppler.



**Figure 3** Axial non-contrast CT images at the level of the gall bladder. (A) A rounded isodense lesion with peripheral hyperdense rim (white arrow). (B) The contrast-enhanced image at the same level shows filling of the pseudoaneurysm (white arrow). (C) Axial maximum intensity projection image reveals the pseudoaneurysm (white arrow) arising from the cystic artery (curved white arrow) which originates from the right hepatic artery. (D) Axial contrast-enhanced sections at a slightly caudal location reveal peripancreatic fat stranding consistent with acute interstitial pancreatitis.

for the past 2 weeks and yellowish discoloration of the eyes, followed by urine of 4–5 days' duration. He had a loss of appetite and a few episodes of non-bilious vomiting. There was no history of fever, haematemesis and melaena.

On examination, he had icterus and right hypochondrial tenderness in the abdomen. There were no signs of chronic liver failure. Laboratory investigations revealed haemoglobin of 12.4 g/dL, leucocytosis (14 400  $\mu$ L), hyperbilirubinaemia (total bilirubin 4.8 mg/dL) and serum amylase and lipase >1000 U/L.

The patient underwent MRCP which revealed features of acute calculous cholecystitis and a 2 cm sized rounded, well-defined T1 hypointense and T2 hyperintense lesion in relation to the neck of gall bladder projecting within the lumen showing a thin T2 hypointense rim. The common bile duct was unremarkable (figure 1). An ultrasound scan of the abdomen



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## Patient's perspective

I had reported to the hospital with yellowish discolouration of my urine, loss of appetite and pain on the right side of my abdomen, below my ribs.

I was told by the doctor to get admitted and he arranged for my urgent ultrasound abdomen. The radiologist told me that I might be having a rare condition in the blood vessel supplying my gall bladder because of swelling in my gall bladder.

I had to undergo further tests. Though all doctors seemed excited on seeing the rare condition I had they did make me comfortable and explained to me the likely course of management. This alleviated a lot of my anxiety.

Finally, I was offered laparoscopic cholecystectomy for my condition which me and my family agreed to. The surgical team made me know the intricacies of the surgery in detail.

Post-operatively, I was up and about in the evening of surgery and was discharged the next day.

Am thankful to the entire team.

## Learning points

- ▶ Cystic artery pseudoaneurysm is a very rare entity.
- ▶ Cholecystitis and pancreatitis are often the likely causative aetiologies.
- ▶ Ultrasound of the abdomen with magnetic resonance cholangiopancreatography can diagnose the condition.
- ▶ Surgical exclusion, in the form of laparoscopic cholecystectomy, or coiling of the pseudoaneurysm forms the pillar of surgical management.

showed an anechoic thick-walled cystic lesion within the gall bladder wall with intraluminal yin–yang flow on colour doppler imaging (figure 2). An arterial phase CT confirmed the presumptive diagnosis of unruptured cystic artery pseudoaneurysm (figure 3).

The patient underwent laparoscopic cholecystectomy with cystic artery pseudoaneurysm exclusion and recuperated well.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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