CASE REPORT

Acalculous Phrygian cap cholecystitis

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SUMMARY

We report a case of a 53-year-old Caucasian woman who presented with symptoms of cholecystitis; an ultrasound and CT scans showed a mass lesion associated with the gallbladder and no gallstones. Laparoscopic cholecystectomy and further histological analysis confirmed acalculous cholecystitis in a Phrygian cap gallbladder.

BACKGROUND

This case highlights that a Phrygian cap gallbladder is one of the differential diagnoses of a lesion found associated with the gallbladder. We suggest that a Phrygian cap anomaly may be a risk factor for developing acalculous cholecystitis. We also believed this is the first report showing the photographic images of a Phrygian cap gallbladder in vivo.

CASE PRESENTATION

A 53-year-old white English woman presented with 3 months of right upper quadrant abdominal pains

radiating to her back, nausea and one stone of weight loss.

INVESTIGATIONS

An upper gastrointestinal endoscopy showed mild duodenitis, and biopsies showed normal duodenal mucosa. An abdominal ultrasound scan showed a heterogeneous lesion of unclear nature in segment 4 of the liver measuring $2.8 \times 1.3 \times 1.8$ cm, with a small amount of perfusion demonstrated using colour Doppler (figure 1). The lesion was observed to lie in close proximity to the gallbladder fundus. The patient was tender over this area during the scan. No further focal liver abnormality or intrahepatic biliary duct dilation was visualised. The common bile duct was of normal calibre and no obvious gallbladder calculi were observed.

Blood tests including full blood count, liver function tests, Ca19.9 and α -fetoprotein levels (blood tumour markers), were normal.

CT scan showed several tiny cysts in the liver but no evidence of significant focal liver pathology. The lesion adjacent to the gallbladder appeared extrahepatic and was considered more likely to be part of

USG showing a well defined lesion in relation to the fundus of the GB or in segment IV

Figure 1 Ultrasound scan showing a lesion (arrows) in the gallbladder or segment 4 of the liver.

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Figure 2 CT scan showing a lesion (arrow) in relation to the gallbladder fundus.

the gallbladder (figure 2). The CT appearances suggested gallbladder pathology, and calculus was excluded by the enhancement within the abnormal area. The appearances suggested

Figure 3 The gallbladder during laparoscopy before excision, with a fibrous cap on the fundus (arrow).

Figure 4 The gallbladder after dissection from the liver bed at laparoscopy. The fibrous Phrygian cap is a clear feature of the fundus (arrow).

Figure 5 Bust of Attis, wearing the Phrygian cap. Parian marble, second century AD, probably during the reign of Emperor Hadrian. Cabinet des Médailles, Jastrow (2006) public domain, from http://en.wikipedia.org/wiki/Phrygian_cap.

focal cholecystitis within a Phrygian cap or a neoplasm. Both are rare and a CT cannot reliably differentiate between the two.

An MRI scan would have characterised the lesion further, however, this was not performed due to patient choice.

Figure 6 A Smurf wearing a Phrygian cap. The Smurfs are cartoon creations of Pierre 'Peyo' Culliford of Belgium.

TREATMENT

Diagnostic laparoscopy showed a folded fibrous cap on the fundus of the gallbladder, and an otherwise normal gallbladder (figures 3 and 4). The macroscopic appearances were consistent with a Phrygian cap, with microscopic appearances of chronic cholecystitis. There were no signs of malignancy at laparoscopy. She underwent a laparoscopic cholecystectomy.

OUTCOME AND FOLLOW-UP

The patient's symptoms completely resolved after surgery and she remains asymptomatic 6 months of postoperatively.

DISCUSSION

A Phrygian cap gallbladder is a common congenital abnormality of the gallbladder, found in 2–6% of people in autopsies.¹ It is when the fundus of the gallbladder folds on itself and thus looks notched, resembling the caps worn by the ancient Phrygians of Anatolia (modern-day Turkey), figure 5 or liberty caps of the French revolution, or Smurf caps (figure 6).

The term was first used by Bartel² based on autopsies, then popularised by Boyden.³ There have been suggestions that a Phrygian cap may predispose to lithiasis,⁴ but the evidence is weak and this is not confirmed. While it is often an incidental finding, it can be clinically significant as people undergo more and more radiological scans, where it can be confused with a malignant lesion of the gallbladder or liver, as was the situation in the case described above.

The incidence of cholecystitis in Phrygian cap gallbladders is not well reported. We think that this is the first case report of acalculous Phrygian cap cholecystitis.

Learning points

- ▶ There is a 2–6% prevalence of Phrygian cap gallbladder in the population.
- ▶ Phrygian cap gallbladder should be a differential diagnosis considered when a mass is found associated with the gallbladder or liver adjacent to gallbladder.
- ▶ Acalculous cholecystitis may be associated with Phrygian cap gallbladders.

Contributors All the authors have read the manuscript and have approved this submission.

Competing interests None.

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