Demystifying a thickened and calcified gall bladder in the era of multimodality imaging

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DESCRIPTION
A 74-year-old woman presented with a 6-month history of significant postprandial nausea and mild abdominal discomfort. She was fit and well with a surgical history of appendicectomy.

Routine blood tests including full blood examination and liver biochemistry were normal. Ultrasonography (US) demonstrated a thickened and calcified gall bladder. This was also confirmed on CT which showed concentric thickening and calcification of the gall bladder wall that was equivocal for an underlying malignancy associated with a large gallstone (figure 1).

Interestingly, further imaging by MRI demonstrated an unexpected but definitive diagnosis of an 8 cm gallstone within a thin-walled gall bladder (figure 2). Based on the above investigations, an underlying malignant process was considered unlikely and the patient subsequently underwent a laparoscopic cholecystectomy (figure 3).

Her postoperative recovery was uneventful. Histology confirmed cholelithiasis (8.5×5 cm gallstone).

Numerous aetologies such as cholecystitis, adenomyomatosis, congestive cardiac failure and gall bladder cancer can lead to thickening of the gall bladder wall.1 The accurate diagnosis of the underlying aetiology is often challenging. US and CT are associated with anatomical and technical pitfalls that can lead to equivocal diagnoses.2 3

In the setting of diagnostic uncertainties (clinically or radiologically), the clinician should consider the use of other imaging modalities for further definitive characterisation.3 This case highlights the complementary value of MRI in addition to US and CT for the evaluation of gall bladder disorders in the era of multimodality imaging.

Contributors SKG, AU and VM participated in the clinical care of the patient. SKG wrote the report. AU, CC and VM provided intellectual support for the writing of this report.

Competing interests None declared.

Patient consent Obtained.

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References

Learning points
► Ultrasonography and CT are initial imaging modality of choice for the evaluation of gall bladder disorders.
► MRI is a useful adjunct that can provide additional features to improve diagnostic accuracy.

Figure 1 CT in the (A) axial and (B) coronal sections show concentric thickening of the gall bladder wall with minor calcifications associated with cholelithiasis (indicated by the white arrow).

Figure 2 MRI in the (A) axial and (B) coronal sections show a large 8 cm gallstone in a normal thin-walled gall bladder (indicated by the white arrow).

Figure 3 (A) Laparoscopic appearance of the gall bladder prior to the cholecystectomy. (B) Macroscopic appearance of the 8.5×5 cm gallstone that was retrieved from the gall bladder postoperatively.