Iran J Radiol. 2017 May; Special issue(5):e48322. doi: 10.5812/iranjradiol.48322.

Published online 2017 April 13.

Abstract

Gallbladder Fundus: A Spectrum of Abnormalities

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Received 2016 December 21; **Accepted** 2017 February 08.

Abstract

Fundal gallbladder abnormalities result from broad spectrum of pathologic that most of them have no pathological significance and normally causes no symptoms. Conversely, early incidental detection of malignant lesions is important because symptomatic lesions are often incurable. So use proper imaging to differentiate between them is important. Although ultrasound has been the choice screen method of gallbladder diseases, making an accurate diagnosis may be impossible. Now day, multiphase MRI and CT scan have become the imaging technique that are widely used to detect and to characterized gallbladder abnormalities. In cross-sectional imaging analysis of finding included evaluation of thickness, contour, intralesional cystic areas, enhancement pattern, presence of stone, etc. may help to differentiated fundal gallbladder abnormalities. The porpoise of this educational exhibit is to describe gross anatomy and pathologic appearance of each abnormalities and demonstrate features of them in ultrasound, CT scan and MRI with emphasis on the specific characteristics and will review the role of imaging in the differentiation of these. Abnormalities included: Phrygian cap: Most common congenital anatomic variant of gallbladder that is asymptomatic and characterized by folding of the fundus on the body. Although ultrasound isn't always conclusive but usually clearly identify in CT scan and MRI. Fundal septation: It is rare and usually asymptomatic and result of incomplete cavitation of gallbladder bud. In ultrasound demonstrated as an echogenic band crossing the lumen and in CT scan and MRI usually clearly identify. Localized chronic cholecystitis: Most common form of clinically symptomatic gallbladder diseases that there is evidence of chronic inflammation in pathology and may have a history of biliary colic. Ultrasound demonstrate gallbladder wall thickening and usually with cholelithiasis, without any pericholecystic inflammation. In CT scan, focal fundal thickening with flat contour and adjacent gallbladder thickening is seen. The most common finding in MRI is cholelithiasis and wall thickening without any pericholecystic inflammation. Adenomyomatosis: Has been reported in 2-8% of cholecystectomy specimens and have a predilection for the middle and elderly aged women and is usually asymptomatic or paucisymptomatic. It is widely accepted to be a degenerative disease and is characterized by Rokitansky- Aschoff sinuses that are responsible for the imaging finding. Specific ultrasound signs are anechoic intramural diverticulum with or without comet tail artifacts. Optimal CT scan evaluation of gallbladder require IV contrast and Rosary sign is highly suggestive. MRI finding are focal mass, mural thickening and pearl necklace sign. Fundal gallbladder cancer: uncommon but most common primary biliary carcinoma and predominantly affects elderly women that often present when extend to liver or adjacent structures. Over 90% are adenocarcinoma. Cross-sectional appearance is that of a mass replacing the gallbladder (40% - 65%), focal wall thickening (20% - 30%) or an intraluminal polypoid mass (15% - 25%). Ultrasound isn't usually useful if there isn't any invasion but there are several features that may be useful, polipoid lesions greater than 1 cm, focal wall thickening > 1 cm, heterogeneous mass or asymmetric thickening. CT scan with contrast is extremely helpful (dual phase) and finding suggesting cancer are hypo or iso attenuating heterogeneous mass, adjacent invasion, pronounced wall thickening(> 1 cm), thickness with mural irregularity or marked asymmetry. Caner in MRI is typically T1 hypo intense and T2 hyper compare with liver parenchyma, typically shows early irregular contrast enhancement which persists into delayed images. Stones are common. **Conclusions:** All of gallbladder fundal abnormalities should be kept in the mind during imaging and knowledge of the characteristic imaging finding of each abnormalities are essential in order to manage patients.

This is an abstract presented in the 33rd Iranian congress of radiology (ICR) and the 15th congress of Iranian radiographic science association (IRSA).