Imaging Sciences Interesting Cases

CASE 189

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CLINICAL PRESENTATION: Patient is a 57-year-old female with fever.

IMAGING FINDINGS See figure legend.

Figure 1: Right upper quadrant ultrasound image demonstrates an irregular echogenic line just deep to an echogenic, curvilinear gallbladder wall. Posterior acoustic shadowing is present.

DIAGNOSIS: Gallstones

DISCUSSION: The wall-echo-shadow (WES) sign is identified during right upper quadrant ultrasound examinations for suspected gallbladder disease. The finding signifies a gallbladder either distended with or collapsed around stone(s).

Specifically, the WES sign is composed of two parallel, curvilinear, echogenic lines defined by an intervening hypoechoic space. The near field echogenic line represents the gallbladder wall, while the deeper line is the surface of the gallstone(s). The hypoechoic layer sandwiched between the wall and the gallstones is

attributed to bile. Acoustic shadowing deep to the far field echogenic line results from heterogeneous attenuation of the ultrasound beam by the gallstones.

The differential diagnosis includes a porcelain gallbladder and visualization of a bowel loop, commonly the duodenum, within the gallbladder fossa.

Notably, caution should be exercised to avoid passing off a WES sign as nothing more than a loop of bowel.

REFERENCES:

1. Rybicki FJ. The WES Sign. Radiology. 2000 Mar;214(3):881-2. [PubMed]
2. Dogra V, Rubens DJ (eds). Ultrasound Secrets. Philadelphia, PA: Hanley and Belfus; 2004