

Image Diagnosis: Ultrasound in Right Lower Quadrant Pain

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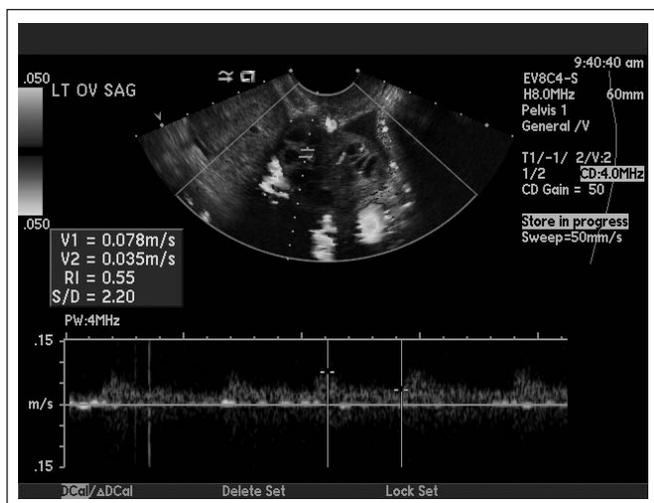


Figure 1.

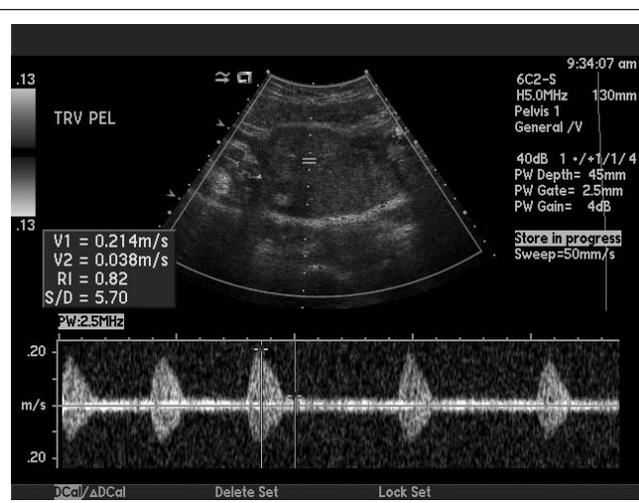


Figure 2.



Figure 3.

Ovarian Torsion

Ovarian torsion is classically described as an acute onset of severe lower quadrant abdominal pain, typically unilateral. Doppler ultrasound is the imaging modality of choice. Figure 1 demonstrates a normal ovary. The top half of the figure is a static gray-scale image with color Doppler; the bottom half has the corresponding spectral Doppler. Figure 2 is an enlarged, torted ovary with peripherally displaced follicles because of vascular congestion. Because the ovary is supplied by both the ovarian and uterine arteries, a torted ovary may have arterial flow. Resistive Index (RI), calculated as systolic flow minus diastolic flow (between 0 and 1), quantifies the resistance to blood flow in the ovary. The torted ovary will have a high RI, close to 1, because of minimal diastolic flow, confirming the torsion. The coronal computed tomography (CT) scan (Figure 3), though not the appropriate test for diagnosis of ovarian torsion, illustrates medial displacement of the torted and enlarged right ovary, and compression of the uterus and bladder.

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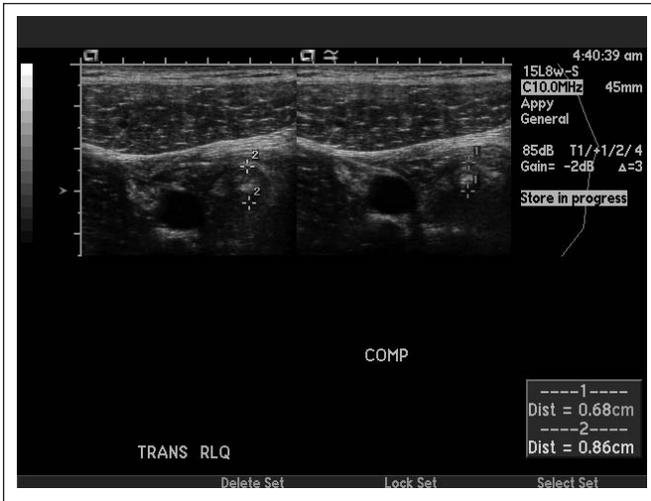


Figure 4.

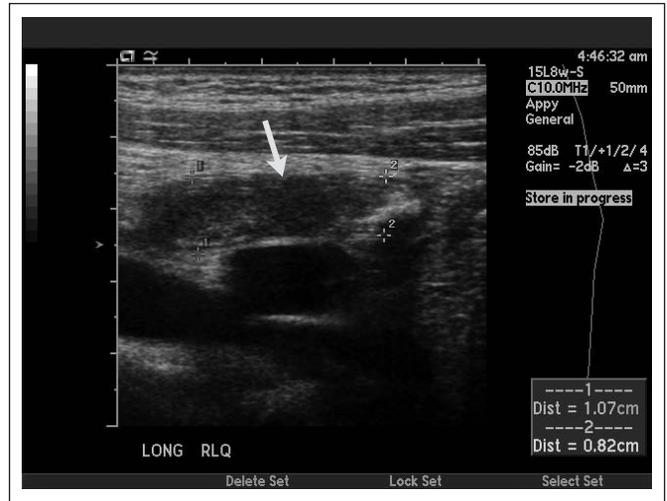


Figure 5.

Appendicitis

In thin patients with clinical concern for appendicitis, ultrasound is an appropriate initial imaging technique. Figures 4 (axial) and 5 (transverse) depict a distended, incompressible structure at the point of the patient’s maximal tenderness. Sonographic findings in acute appendicitis include appendiceal diameter greater than 6 mm, with inflamed mesentery surrounding a “target sign” lying anterior to the external iliac vessels. In Figure 6, a CT scan of the same patient confirms the ultrasound diagnosis of acute appendicitis. ❖



Figure 6.