

Round ligament varicosities mimicking inguinal hernias in pregnancy: importance of color Doppler sonography

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ABSTRACT

Round ligament varicosities are easily misdiagnosed as an obstructed hernia in a gravid patient. When this condition is diagnosed correctly, unnecessary intervention may be prevented. We aimed to determine the significance of round ligament varicosities in pregnancy and to describe their clinical presentation and sonographic appearance.

Key words: • pregnancy • round ligament • varicose veins • inguinal canal

Masses in the female groin are not common. The differential diagnosis of an inguinal mass includes hernia, mesothelial cyst, cystic lymphangioma, adenopathy, endometriosis, and varices (1, 2). Round ligament varicosities (RLV) can cause pain and have a presentation similar to that of inguinal hernia. The exact incidence of RLV is uncertain, but McKenna et al. reported RLV in only five of 3816 pregnancies (3). Distinguishing between varicosities and hernias is important in order to avoid performing unnecessary surgery. Inguinal masses that are identified during pregnancy that resemble inguinal hernias must be examined with gray-scale and color Doppler sonography.

Case report

A 24-year-old woman presented at 26 weeks' gestation with a painful swelling in the right groin. On physical examination, she had a small tender soft mass in the right groin. A complicated hernia was suspected, and an urgent sonographic examination was performed. Sonographic examination of the groin was performed using an EnVisor scanner equipped with a 12-MHz linear-array transducer (Philips Ultrasound, Bothell, Washington, USA). Gray-scale sonography showed a mass in the right groin composed of multiple echo-free serpentine tubular channels which became more prominent during Valsalva maneuver. Color Doppler sonography confirmed hypervascularity and venous flow consistent with round ligament varices (Fig. 1). The lesion extended from the right inguinal canal to the abdominal cavity (Fig. 2) and right para-uterine space (Fig. 3). No thrombus was identified in the lesion.

The patient was treated conservatively, and had an uncomplicated vaginal delivery at 40 weeks. The symptoms had resolved completely by two weeks postpartum.

Discussion

The round ligament passes from the pelvis, through the internal abdominal ring, and along the inguinal canal to the labia majora. Varicosities arise from the veins draining the round ligament and the inguinal canal (4). RLV are more common in pregnancy because pregnancy promotes increased venous flow and reduced venous tone.

RLV are easily misdiagnosed as an obstructed hernia, resulting in an unnecessary operation during pregnancy. Both round ligament varicosities and inguinal hernias can occur in the second trimester of pregnancy (1, 5). Pelvic vein enlargement typically occurs during this time, which can sometimes extend to the round ligament in the inguinal canal, resulting in round ligament varicosities. Progesterone receptors are normally present within the round ligament veins and, as progesterone levels increase during pregnancy, they cause dilatation of these veins (6). Although inguinal hernias are uncommon in women, they can occur

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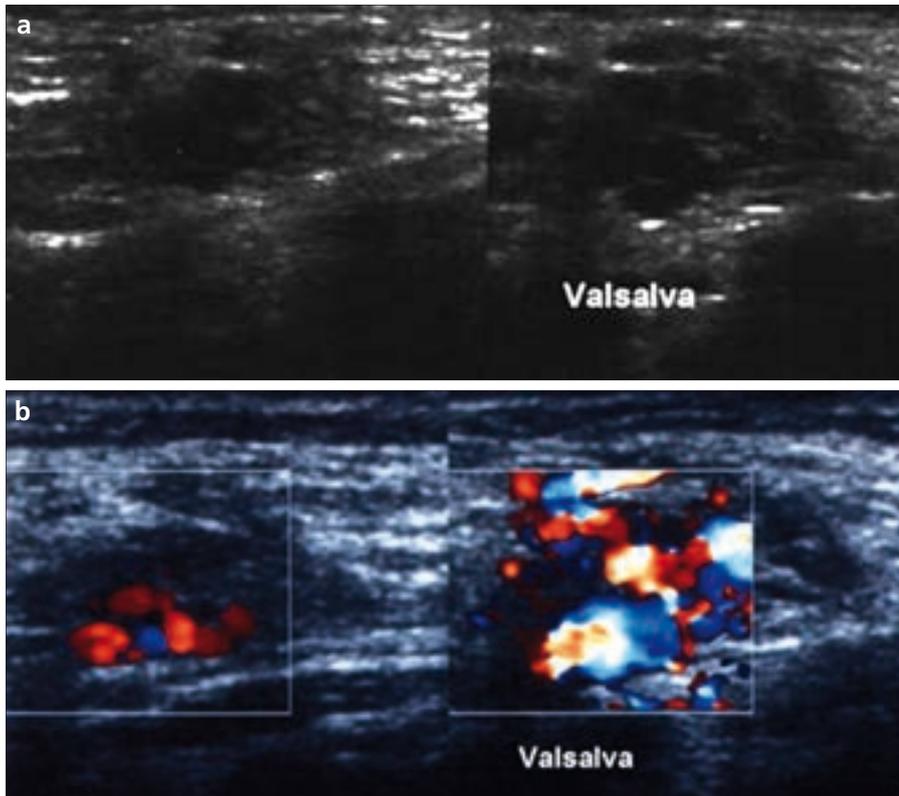


Figure 1. a, b. Gray-scale (a) and color Doppler imaging (b) show a mass in the right groin composed of multiple echo-free serpentine tubular channels that filled with color on Doppler imaging. During Valsalva maneuver, the lesion shows dilatation and marked flow augmentation.

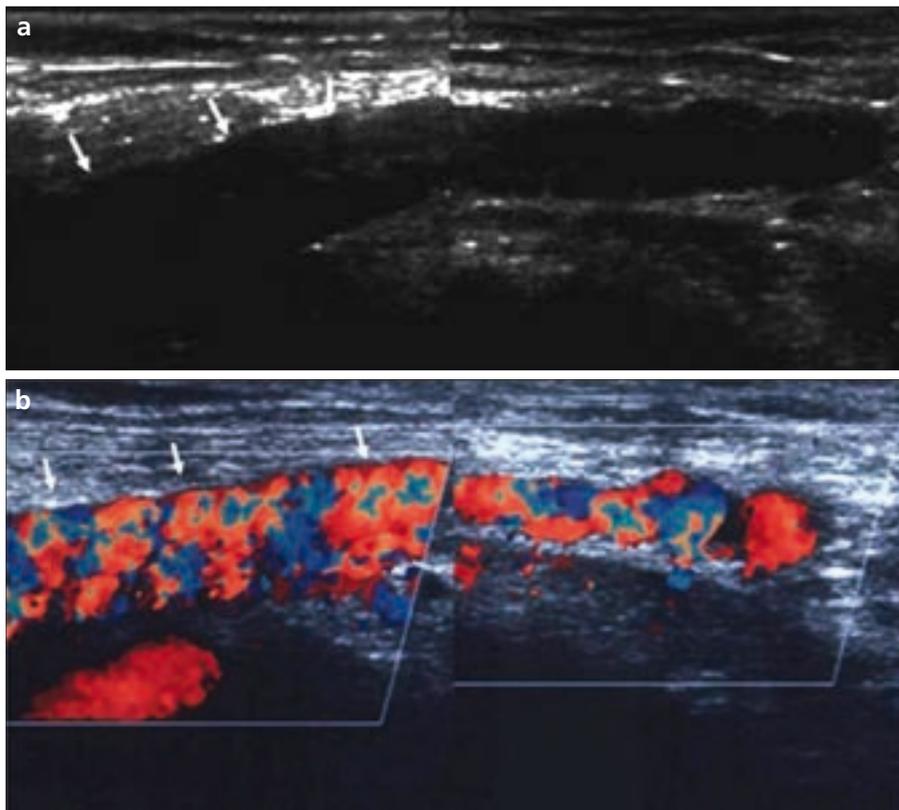


Figure 2. a, b. Sagittal gray-scale (a) and color Doppler imaging (b) reveal the lesion extending from the right inguinal canal to the abdominal cavity (arrows).

due to increased intra-abdominal pressure during pregnancy.

The diagnosis of RLV can be established on gray-scale sonography, which typically demonstrates “bag of worms” appearance associated with dilated draining veins (1). The venous flow on Doppler imaging can confirm the diagnosis. Sonography is initially performed in the supine position. Valsalva maneuver is important in this examination because the venous flow may be subtle at rest.

Management of RLV differs greatly from that of inguinal hernias. Symptomatic inguinal hernias in pregnant women should be surgically repaired during the second trimester. In contrast, RLV should be managed conservatively, with the expectation that they will resolve spontaneously during the postpartum period (7). However, RLV require close observation during pregnancy because rupture of the varices, and acute variceal thromboses have been reported (1, 5). If pain is the predominant symptom, thrombosis or rupture of RLV should be excluded (8).

In conclusion, RLV are relatively uncommon and may be mistaken for a complicated hernia. Color Doppler sonographic examination is recommended in all cases with groin swelling to avoid unnecessary surgery during pregnancy.

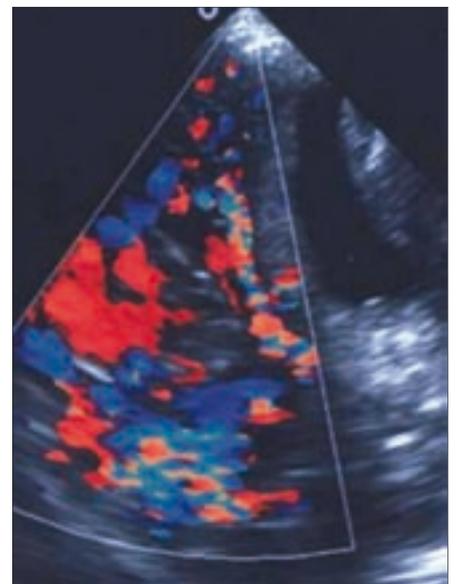


Figure 3. Color Doppler imaging shows multiple varicose pelvic veins in the right parauterine space that show continuity with the varicose veins located in the right inguinal canal.

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