American Journal of Case Reports

ISSN 1941-5923
© Am J Case Rep, 2017; 18: 1194-1197
DOI: 10.12659/AJCR.905753

Received: 2017.06.13
Accepted: 2017.08.09
Published: 2017.11.10

A Case of Round Ligament Varices Presenting in Pregnancy

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

AEF Luis F. Garcia-Paredes
EF Stephanie C. Torres-Ayala
BCF Wilmarie Rivera-Hernández
DF Wilma Rodriguez Mojica

Ultrasound Section, Department of Diagnostic Radiology, University of Puerto Rico School of Medicine, San Juan, Puerto Rico

Corresponding Author: Stephanie C. Torres-Ayala, e-mail: Stephanie.torres19@upr.edu
Conflict of interest: None declared

Patient: Female, 34
Final Diagnosis: Round ligament varices
Symptoms: Inguinal mass/inflammation
Medication: —
Clinical Procedure: Ultrasound
Specialty: Radiology

Objective: Challenging differential diagnosis

Background: Round ligament varices (RLV) are rare and are almost exclusively seen in pregnant women. RLV may clinically resemble an inguinal hernia, inguinal mass, or other pathology involving the inguinal canal and round ligament. Ultrasound imaging is important to make the diagnosis of RLV.

Case Report: A 34-year-old Hispanic woman, gravida 1 para 0, at 34 weeks gestation, presented to our outpatient department with a complaint of a small, painless, reducible right inguinal mass. Gray-scale sonography showed an asymmetric right inguinal anechoic mass composed of multiple serpentine tubular channels, which became more prominent when the patient performed a Valsalva maneuver. Color Doppler ultrasound imaging showed a hyper vascular structure with a venous flow pattern, consistent with RLV. The patient was treated conservatively and had an uneventful vaginal delivery at 38 weeks gestation. At two weeks postpartum, the RLV spontaneously regressed and her symptoms completely resolved.

Conclusions: RLV is a rare condition that should be recognized and diagnosed promptly to prevent patients from undergoing unnecessary surgical exploration. Ultrasound is the diagnostic imaging procedure of choice for the diagnosis of RLV, as well as for patient follow-up and to exclude possible complications associated with RLV.

MeSH Keywords: Inguinal Canal • Pregnant Women • Round Ligament • Ultrasonography • Ultrasonography, Doppler, Color

Full-text PDF: https://www.amjcaserep.com/abstract/index/idArt/905753

Background

Round ligament varices (RLV) are rare, but their precise incidence is unknown. In 2008 McKenna and colleagues reported that RLV occurred in five out of 3,816 pregnancies [1]. In 2014, Kyeong and colleagues reported 26 cases in the medical literature in the English language [2]. To the best of our knowledge, this is the first case of RLV in pregnancy in our institution.

Prompt identification and diagnosis of RLV are important in order to prevent unnecessary exploratory surgery. We present a case of RLV to inform physicians who care for pregnant women, as RLV is almost exclusively seen in pregnant patients [2]. RLV presents with symptoms that can resemble those of an inguinal hernia, inguinal mass or other pathology involving the inguinal canal and round ligament [3]. Gray-scale ultrasound and color Doppler ultrasound can precisely diagnose RLV and help distinguish it from other conditions in the differential diagnosis.

Case Report

A 34-year-old female, gravida 1 para 0, at 34 weeks gestation, presented at our outpatient ultrasound suite for an inguinal ultrasound, with a chief complaint of a small, painless, reducible right inguinal mass, with symptoms that began at 32 weeks gestation. She had no past medical history of note. Her obstetrician examined her and ordered an ultrasound for further evaluation, with the provisional diagnosis of an inguinal hernia.

Before performing the ultrasound, physical examination confirmed a right inguinal swelling, without skin color change and without tenderness on palpation. Ultrasonography was performed using a 12-MHz linear array transducer iU22 scanner (Philips Healthcare). Gray-scale sonography showed an asymmetric right inguinal anechoic mass composed of multiple serpentine tubular channels (Figure 1) which became more prominent when the patient performed Valsalva maneuver (Figure 2). Color Doppler imaging showed a hyper vascular structure with a venous flow pattern (Figure 3). There were no intraluminal echogenic findings to suggest thrombus formation; there were no soft tissue components, no bowel loops, or lymphadenopathy. A diagnosis of round ligament varices (RLV) was made.

The patient was treated conservatively and had an uneventful vaginal delivery at 38 6/7 weeks. At two weeks postpartum, the RLV spontaneously regressed and her symptoms completely resolved.

Discussion

Anatomically, the round ligament extends from the lateral aspect of the uterus (bilaterally) and courses through the internal abdominal ring and inguinal canal to the labia majora, where it anchors the uterus [1,2]. The round ligament also serves as a vascular supply channel, containing veins, arteries, lymphatics and nerves [1–3].

Round ligament varices (RLV) arise from the veins draining the round ligament and inguinal canal into the inferior epigastric vein [4]. There are several mechanisms that contribute to RLV

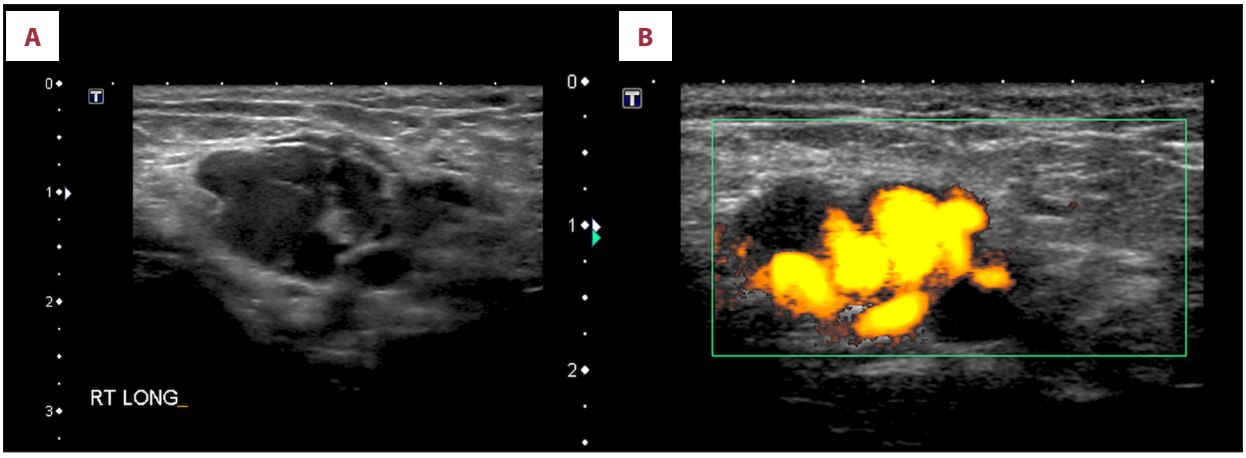

Figure 1. Gray-scale ultrasound and power Doppler ultrasound imaging of the right inguinal region. (**A**) Gray-scale ultrasound imaging of the right inguinal region shows a predominantly hypoechoic lesion composed of multiple, hyper vascular, echo-free tubular channels. The imaging findings are consistent with round ligament varicosities. (**B**) Power Doppler imaging of the right inguinal region shows a predominantly hypoechoic lesion composed of multiple, hyper vascular, echo-free tubular channels. There is no sonographic evidence of an inguinal hernia. The imaging findings are consistent with round ligament varicosities.

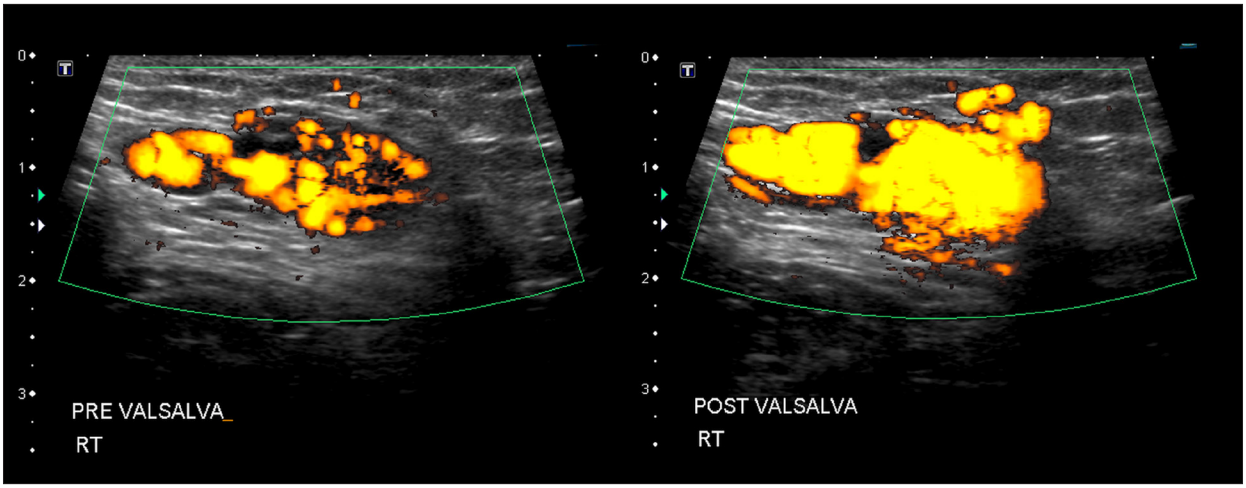

Figure 2. Ultrasound imaging of the right inguinal region. Venous structures show engorgement with Valsalva maneuver, reaching anteroposterior (AP) diameters of at least 7 mm. There is no evidence of thrombus formation.

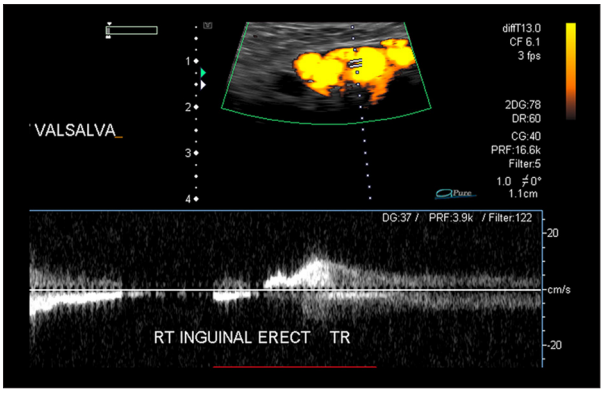

Figure 3. Round ligament varicosities show a venous flow waveform demonstrated with power Doppler/duplex imaging.

formation during pregnancy, including the increase in blood volume and venous return, and the increased level of progesterone during pregnancy, which causes venous dilation along with muscle relaxation [5]. An additional cause of RLV in pregnancy is the increased pressure on the pelvic veins caused by the gravid uterus [3]. These reasons make RLV an almost exclusive diagnosis in pregnant women [2].

RLV can be easily misdiagnosed as an inguinal hernia, and so ultrasound imaging is important to make the diagnosis. Ultrasound is the gold standard for diagnosis of RLV, with the classical image on Gray-scale ultrasound of a 'bag of worms' appearance associated with dilated veins and a venous flow pattern on Doppler imaging [1]. To adequately ascertain the diagnosis of RLV, it is essential to demonstrate the absence of bowel loops or enlarged inguinal lymph nodes, as in our case. Ultrasound can also distinguish RLV from other inguinal and round ligament abnormalities, including lymphadenopathy, endometriosis, lipoma, and cystic lymphangiomas, all of which have characteristic findings on ultrasound imaging. Precise and prompt diagnosis of RLV is important since a lack of correct diagnosis could lead to unnecessary surgical intervention, whereas conservative treatment of RLV usually leads to spontaneous resolution during the postpartum period, as in this case [6,7].

Ultrasound is not only useful for the diagnosis of RLV, but it is also used for patient follow-up to exclude complications from RLV, such as ruptured veins and venous thrombosis [8]. The use of diagnostic ultrasound not only avoids unnecessary surgery but also avoids the use of imaging with ionizing radiation during pregnancy.

Conclusions

Round ligament varices (RLV) are a rare condition that should be recognized and diagnosed promptly to prevent patients from undergoing unnecessary surgical exploration. Ultrasound is the diagnostic imaging procedure of choice for the diagnosis of RLV, as well as for patient follow-up and to exclude possible complications associated with RLV.

Conflict of interest

None.

References:

1. McKenna DA, Carter JT, Poder L et al: Round ligament varices: Sonographic appearance in pregnancy. Ultrasound Obstet Gynecol, 2008; 31: 355–57
2. Ryu KH, Yoon J-H: Ultrasonographic diagnosis of round ligament varicosities mimicking inguinal hernia: Report of two cases with literature review. Ultrasonography, 2014; 33: 216–21
3. Cheng D, Lam H, Lam C: Round ligament varices in pregnancy mimicking inguinal hernia: An ultrasound diagnosis. Ultrasound Obstet Gynecol, 1997; 9: 198–99
4. Reisfield DR: Varicosities in veins of the inguinal canal during pregnancy. J Med Soc NJ, 1962; 59: 24–26
5. Smith P, Heimer G, Norgren A, Ulmsten U: The round ligament: A target organ for steroid hormones. Gynecol Endocrinol, 1993; 7: 97–100
6. Copeland CE, Myers CJ: Round ligament varicosities mimicking inguinal hernias in gravid patient. Surg Rounds, 2008; 31: 34–36
7. Uzun M, Akkan K, Coskun B: Round ligament varicosities mimicking inguinal hernias in pregnancy: Importance of color Doppler sonography. Diagn Interv Radiol, 2010; 16: 150–52
8. Al-Qudah MS: Postpartum pain due to thrombosed varicose veins of the round ligament of the uterus. Postgrad Med J, 1993; 69: 820–21