

## 산모에서 발생한 원인대 정맥류: 증례 보고

백창규 · 오영택 · 정대철

연세대학교 의과대학 영상의학과

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**Address for reprints :**

Young-Taik Oh, MD, PhD, Department of  
Radiology, Yonsei University College of  
Medicine, 250 Seongsanno, Seodaemun-  
gu, Seoul 120-752, Korea.  
Tel. 82-2-2228-7400  
Fax. 82-2-393-3035  
E-mail: oytaik@yuhs.ac

### Round Ligament Varicosities During Pregnancy: Case Report

Chang-Kyu Baek, MD, Young Taik Oh, MD, Dae Chul Jung, MD

*Department of Radiology, Research Institute of Radiological Science, Yonsei University Health System, Korea*

There are various causes of a painful palpable mass in the groin during pregnancy. The differential diagnoses of an inguinal mass include hernia, lymphadenopathy, mesothelial cyst, cystic lymphangioma, neoplasms (lipoma, leiomyoma and sarcoma), endometriosis, embryonic remnants and round ligament varicosities. Among them, round ligament varicosities can be easily misdiagnosed as an inguinal hernia in a pregnant woman. These lesions should be managed conservatively because they resolve spontaneously during the postpartum period. Ultrasonography can help make the diagnosis of round ligament varicosities and so prevent unnecessary surgical intervention and the associated morbidity. Herein we report on a case of round ligament varicosities that presented during pregnancy and this condition was readily diagnosed via Doppler sonography.

**Key words :** Round ligament varicosities; Pregnancy; Ultrasonography (US);  
Magnetic resonance imaging (MRI)

### Introduction

There are not many reports on round ligament varicosities. They may appear as a painful mass in the groin during pregnancy and they can easily be mistaken for an inguinal hernia. Making the clinical distinction between the two is difficult. Herein we report on a case of a 32-year-old woman who presented at 23 weeks of pregnancy with painful swelling in the left groin.

### Case Report

A 32-year-old woman presented at 23 weeks of

pregnancy with painful swelling in the left groin. The pain had developed three weeks earlier, and she had noticed the presence of a mass, which was more prominent on standing. There were no symptoms of intestinal obstruction, and the patient was afebrile and hemodynamically stable. On physical examination, a soft mass was palpated in the left groin. The mass was partially reducible by soft digital pressure and it was prominent while standing, but it disappeared with the patient in the recumbent position. The general examination was unremarkable with a normal uterine size for the duration of pregnancy and no signs of bowel obstruction. No vulvar or lower leg varicosities were observed.

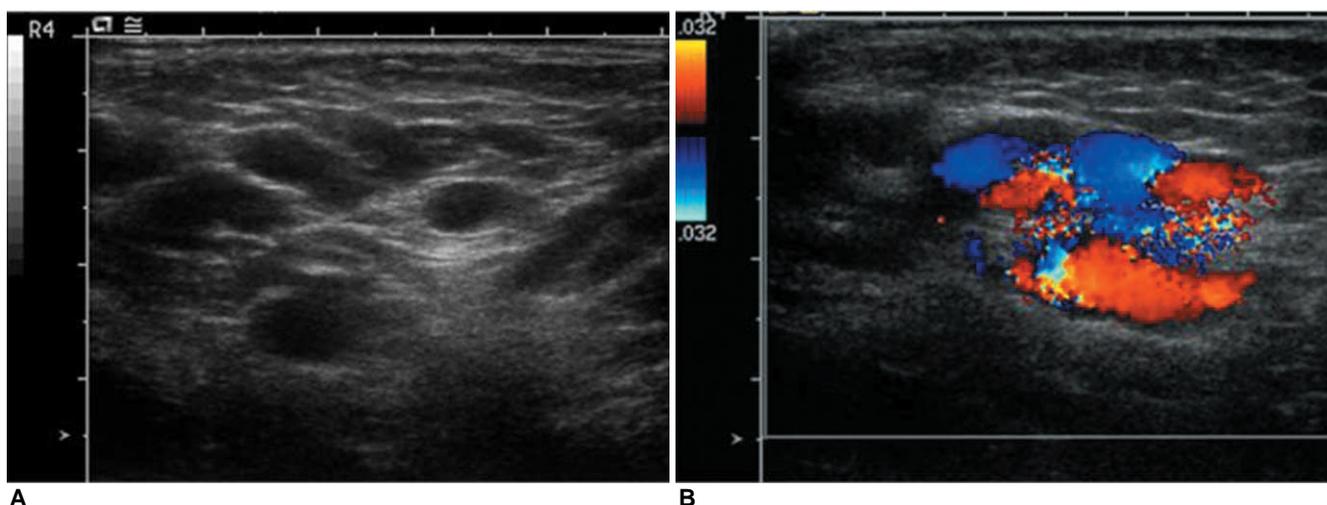
Ultrasonography examination of the groin showed a

4-cm compressible mass in the left groin and the mass was composed of multiple echo free serpentine tubular channels (Fig. 1A). Doppler study revealed good flow signals and no thrombus. The venous flow was accentuated during the Valsalva maneuver (Fig. 1B). MRI also showed a multicystic tubular structure coursing from the left inguinal canal into the labia majora. The signal intensity of the mass was iso-signal intense to the muscle on the T1-weighted images and hyper-signal intense on the T2-weighted images (Fig. 2). We made a diagnosis of round ligament

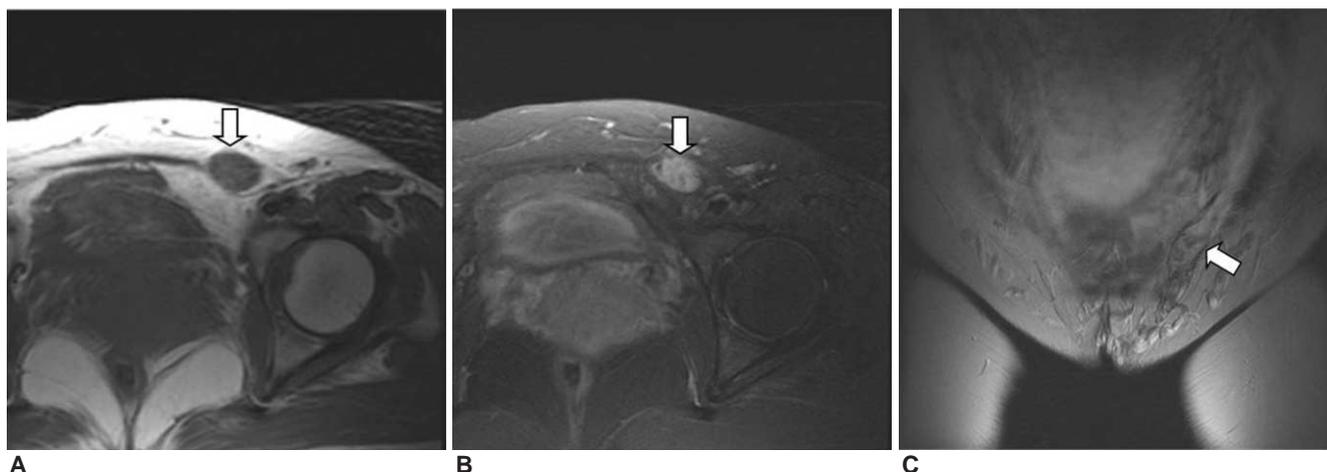
varicosities. The patient was discharged with a prescription for analgesics. The mass remained the same size throughout the pregnancy: it subsided after a normal term delivery, and it was clinically absent at five months postpartum.

### Discussion

The round ligament passes from the pelvis, through the internal abdominal ring and along the inguinal canal, and the round ligament carries veins, arteries,



**Fig. 1. A.** Ultrasonography revealed a 4-cm mass in the left groin and the mass is composed of multiple echo free serpentine tubular channels.  
**B.** The Doppler study showed good flow signals and the absence of thrombus.



**Fig. 2. A.** The mass in the left groin showed iso signal intensity on the T1-weighted images and **(B)** high signal intensity on the T2-weighted images.  
**C.** On the coronal T2-weighted image, the mass had multicystic tubular structures coursing from the left inguinal canal into the labia majora.

lymphatics and nerves to the labia majora. The function of the round ligament is to maintain uterine anteversion [1]. Round ligament varicosities are prominent veins within and around the round ligament and these are more common during pregnancy [2]. Several mechanisms contribute to round ligament varicosities during pregnancy, including 1) progesterone-mediated venous smooth muscle relaxation that causes dilatation of the pelvic veins and 2) elevated cardiac output that causes increased venous return from the lower limbs; both of these conditions can lead to engorgement of venous tributaries. Obstruction of the pelvic venous flow by the gravid uterus is the most important cause [3, 4]. The incidence of round ligament varicosities in pregnancy is unknown. It has not been commonly reported and it is probably an underdiagnosed phenomenon [5]. Distinguishing between inguinal hernias and round ligament varicosities can be challenging because of their similar presentations [2, 3]. Other considerations in the differential diagnosis for an inguinal mass include lymphadenopathy, mesothelial cyst, cystic lymphangioma, neoplasms (lipoma, leiomyoma, and sarcoma), endometriosis and embryonic remnants.

A correct diagnosis can be established via ultrasonography and following this with a Doppler study. Ultrasonography can facilitate the characterization of clinically indeterminate groin masses and so avoid unnecessary surgery with the associated morbidity [6]. The ultrasound findings characteristic of round ligament varicosities include multiple dilated veins passing through the inguinal canal, the absence of bowel or lymph nodes in the inguinal mass, veins are observed to drain into the inferior epigastric vein and there is a flow signal in the dilated vein [2]. Ultrasonography is initially performed with the patient in the supine position; however, performing the Valsalva maneuver is important during this examination because the venous flow may be subtle at rest [4]. Magnetic resonance imaging not only clearly depicts the local anatomy, but it also has high contrast resolution. MRI is useful for differentiating bowel

contents or other masses from round ligament varicosities [1].

Round ligament varicosities should be managed conservatively because they resolve spontaneously during the postpartum period due to decompression of the uterus, and so a correct diagnosis can prevent unnecessary surgical intervention [2, 3]. However, round ligament varicosities require close observation during pregnancy because rupture of the varices and acute variceal thromboses have been reported [7].

Round ligament varicosities are a very important consideration in the differential diagnosis of any pregnant woman who presents with a painful groin mass. We recommend an ultrasound examination for all the cases of groin masses during pregnancy to avoid unnecessary surgical intervention because round ligament varicosities can closely mimic inguinal hernias.

## 요 약

임신 중에 발생할 수 있는 서혜부 통증성 종괴의 원인은 다양하다. 서혜부 종괴의 감별진단에는 탈장, 림프절병증, 종괴세포 낭종, 낭종성 림프관종, 지방종, 평활근종, 육종, 자궁 내막증, 배아 잔존물, 그리고 원인대 정맥류가 있다. 그 중에서 원인대 정맥류는 임신부에서 종종 서혜부 탈장으로 오인된다. 하지만 원인대 정맥류는 출산 후에 저절로 없어지므로 보존적으로 치료되어야 한다. 초음파는 진단적이며, 불필요한 수술을 예방할 수 있고 그에 관련된 사망률을 줄일 수 있다. 이에 저자들은 도플러 초음파로 진단된 산모에서 발생한 원인대 정맥류 한 예를 보고하고자 한다.

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