

# Iliopsoas Bursitis with Compression of the Common Femoral Vein Resulting in Acute Lower Leg Edema<sup>1</sup>

Seung-Bae Hwang, M.D., Hyo-Sung Kwak, M.D., Young-Min Han, M.D.<sup>1,2</sup>,  
Sang-Yong Lee, M.D., Yeon-Jun Jeong, M.D.<sup>3</sup>

The clinical manifestations related to iliopsoas bursitis can vary due to compression of the adjacent structure such as the common femoral vein, nerve and bladder. We report here on a rare case of iliopsoas bursitis with compression of the common femoral vein that resulted in acute lower leg edema.

## Index words : Bursitis

Magnetic resonance (MR)

Computed tomography (CT)

Ultrasound (US)

The iliopsoas bursa is a normal anatomical structure that lies deep to the iliopsoas tendon in the region of the hip joint. Iliopsoas bursitis is a relatively rare condition that often presents with nonspecific signs and symptoms, so making the correct diagnosis and administering the proper treatment are frequently delayed. The clinical manifestations related to iliopsoas bursitis can vary due to compression of the adjacent structures such as the common femoral vein (CFV), nerve and bladder (1, 2). We report here on a rare case of iliopsoas bursitis with compression of the common femoral vein that resulted in acute lower leg edema.

## Case Report

A 68-year-old man was admitted to our hospital due to acute edema of his left lower limb. His left lower limb

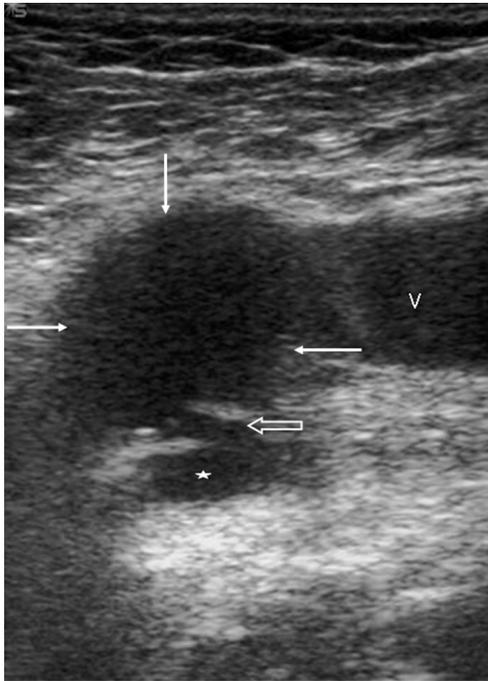
had a medical history of a snapping sensation/sound in the hip of 15 years duration and also varicose veins of five years duration. The routine laboratory tests, including the serum examination for rheumatoid arthritis, the blood chemistry, the liver function tests and the tests for tumor markers, were normal. No mass was palpable in the leg on the physical examination.

Ultrasonography (US) was performed to evaluate the leg edema. US revealed a well-defined cystic mass in the left inguinal area (20 × 18 × 18 mm) (Fig. 1). The cystic mass was surrounded by the CFV and it looked like the mass was located within the CFV, and common femoral venous flow was limited. The upper and deeper portion of the cystic mass extended into the posterior aspect of the iliopsoas tendon. Also, reflux that was caused by valvular insufficiency was seen at the saphenofemoral junction. We thought that his varicose veins were the result of the limited blood flow due to the cystic mass.

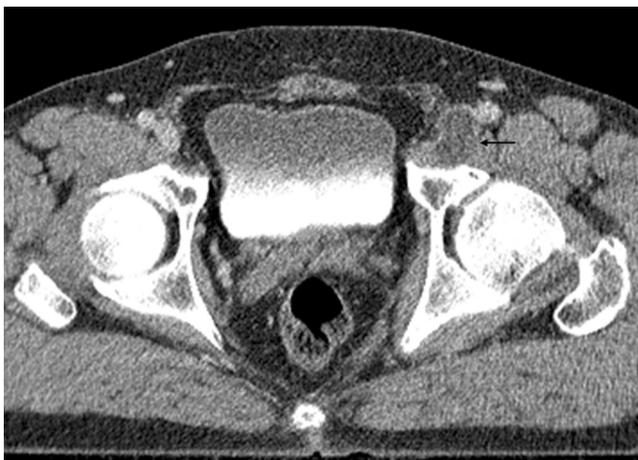
Contrast-enhanced computed tomography (CT) scan of the pelvis showed a well-defined, cystic mass with thin rim enhancement compressing the CFV (Fig. 2). MR imaging showed the same cystic mass compressing the CFV, as was seen on the CT study. This mass showed homogeneously hypointensity on the T1-

<sup>1</sup>Department of Diagnostic Radiology, Institute for <sup>2</sup>Cardiovascular Research and <sup>3</sup>Surgery, Chonbuk National University Medical School  
Received January 27, 2006 ; Accepted March 31, 2006  
Address reprint requests to : Hyo-Sung Kwak, M.D., Department of Diagnostic Radiology, Chonbuk National University Medical School, 634-18 Keumam-dong, Chonju-shi, Chonbuk 561-712, South Korea.  
Tel. 82-63-250-1512 Fax. 82-63-272-0481  
E-mail: kwak8140@yahoo.co.kr

weighted images, and homogeneously hyperintensity on the T2-weighted images. This mass compressed the CFV (Fig. 3). As seen on the lower axial image, the cyst was located anterior to the hip joint and behind the iliopsoas muscle (Fig. 4). The contrast enhanced T1-weighted MR images showed thin enhancement of the



**Fig. 1.** Transverse ultrasonography shows a well-defined, cystic mass (arrows) that causes obstruction of the venous flow. The deeper component of the cystic mass is located anterior to the iliopsoas muscle (astrex) and it is connected to the cystic mass in the common femoral vein by an anechoic stalk (open arrow). Note the distension of the common femoral vein (V) due to the cystic mass.



**Fig. 2.** The contrast-enhanced delayed phase CT scan shows a well-defined, cystic mass compressing the common femoral vein (arrow). Note the thin, rim enhancement of the cystic mass.

wall of the mass. These findings confirmed the diagnosis of iliopsoas bursitis with compression of the CFV. We decided to perform surgery to release the CFV obstruction. At surgery, the mass was exposed through an ilioinguinal incision. On dissection, the mass was found to be cystic and it contained a small amount of bloody fluid. The histologic specimens of the excised bursa consisted of hyalinized, dense collagen fibers and a few chronic inflammatory cells. No synovial-like cells were observed. The final diagnosis was an iliopsoas bursitis with CFV compression. His leg edema disappeared 7 days after surgery.

## Discussion

The iliopsoas bursa is a large, constant bursa that is



**Fig. 3.** The axial T2-weighted image (TR/TE, 2000/104) shows a homogeneous, hyperintense mass with compression of the common femoral vein. Note the thin, hypointense wall of the cystic mass (arrow).



**Fig. 4.** The lower axial T2-weighted image (TR/TE, 2000/104) shows the iliopsoas bursa located anterior to the hip joint and behind the iliopsoas muscle (arrows).

normally located anterior to the hip joint and deep to the musculotendinous portion of the iliopsoas muscle. The most common cause of iliopsoas bursitis is persistent synovitis of the hip in those patients suffering with rheumatoid arthritis or osteoarthritis, along with the accumulation of fluid in the bursa (2, 3). When the bursa is inflamed and enlarged, it may extend into the abdominal and pelvic areas (1, 5). The high intraarticular pressure facilitates communication between the joint space and the iliopsoas bursa.

Iliopsoas bursitis can be either asymptomatic or it can cause various symptoms, including an inguinal or pelvic mass, hip pain, limitation of the joint motion, edema of the lower limb due to femoral vein compression, urinary frequency due to compression of the bladder, and neural impairment due to excessive pressure on the femoral nerve (1 - 7).

US and CT are both reliable techniques for making the diagnosis of this disease entity, but MRI is the most adequate means of diagnosis; it provides for exact anatomic delineation and it can reveal the fluid content of the cyst. CT and MR imaging can also help to diagnose iliopsoas bursitis by showing the enlarged iliopsoas bursa and its relationship to the adjacent structure such as the femoral vessels and femoral nerve (1 - 3, 5). Especially, MR imaging is the most accurate imaging modality for demonstrating the size, shape and communication of the mass with the hip joint. In our case, iliopsoas bursitis was not considered on the CT images due to the lack of any connection between the cystic mass and the iliopsoas bursa, but the MR imaging showed the connection.

The interesting aspect of our case was the unusual presentation of chronic varicose veins and acute lower leg edema that were due to the progressively extrinsic compression on the CFV by the iliopsoas bursitis. We thought that chronic compression of the CFV by the iliopsoas bursitis caused the venous reflux of the saphenofemoral junction, and the near complete obstruction of the CFV caused the acute lower leg edema.

Treatment of iliopsoas bursitis is generally based on the underlying pathology and the treatment is usually a combination of non-steroid anti-inflammatory medica-

tion, fluid aspiration with or without intra-articular/bursal injection of corticosteroids, anaesthetics and/or sclerosing agents. More invasive therapeutic approaches, i.e. surgery such as bursectomy, capsulectomy, or synovectomy with or without iliopsoas tendon release, are necessary if bursal distention, inflammation, neurovascular impairment, pain or associated osseous changes occur (4 - 10). Our patient underwent the surgical excision of the iliopsoas bursa due to the compression of the CFV, and also because of the endovascular laser therapy that was done for treating the the varicose veins.

In summary, iliopsoas bursitis with compression of the CFV is a rare cause of varicose veins because of the reflux from the saphenofemoral junction and the acute lower leg edema. Therefore, US and MR imaging can help to diagnose iliopsoas bursitis as well as to evaluate its relationship with the adjacent structures.

## References

1. Yamamoto T, Marui T, Akisue T, Yoshiya S, Hitora T, Kurosaka M. Dumbbell-shaped iliopsoas bursitis penetrating the pelvic wall: a rare complication of hip arthrodesis. A case report. *J Bone Joint Surg Am* 2003;85A:343-345
2. Bianchi S, Martinoli C, Keller A, Bianchi-Zamorani MP. Giant iliopsoas bursitis: sonographic findings with magnetic resonance correlations. *J Clin Ultrasound* 2002;30:437-441
3. Underwood PL, McLeod RA, Ginsburg WW. The varied clinical manifestations of iliopsoas bursitis. *J Rheumatol* 1988;15:1683-1685
4. Pellman E, Kumari S, Greenwald R. Rheumatoid iliopsoas bursitis presenting as unilateral leg edema. *J Rheumatol* 1986;13:197-200
5. Savarese RP, Kaplan SM, Calligaro KD, DeLaurentis DA. Iliopsoas bursitis: an unusual cause of iliofemoral vein compression. *J Vasc Surg* 1991;13:725-727
6. Yoon TR, Song EK, Chung JY, Park CH. Femoral neuropathy caused by enlarged iliopsoas bursa associated with osteonecrosis of femoral head? a case report. *Acta Orthop Scand* 2000;71:322-324
7. Lavyne MH, Voorhies RM, Coll RH. Femoral neuropathy caused by an iliopsoas bursal cyst. Case report. *J Neurosurg* 1982;56:584-586
8. Malghem J, Vande BB, Lecouvet F, Lebon Ch, Maldague B. Atypical ganglion cysts. *JBR-BTR* 2002;85:34-42
9. Jacobson T, Allen WC. Surgical correction of the snapping iliopsoas tendon. *Am J Sports Med* 1990;18:470-474
10. Johnston CA, Wiley JP, Lindsay DM, Wiseman DA. Iliopsoas bursitis and tendonitis. A review. *Sports Med* 1998;25:271-283

