► **Case Report** ◀

A Case of External Compression of Femoral Vein by the Enlarged Iliopsoas Bursa with Long Term Edema

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The iliopsoas bursa is the largest bursa in the region of hip joint. It is unusual that these bursa become symptomatic. However the bursa can compress femoral vein, leading to lower extremity edema. A 58-year-old man was referred to our department for his unilateral leg edema which had been treated as deep vein thrombosis without any favorable response. Magnetic resonance angiography was performed, which demonstrated enlarged iliopsoas bursa compressing his femoral vein. Surgical removal of the bursa was performed. The postoperative course was uneventful, and the patient is free from symptoms with no evidence of recurrence.

Key words: iliopsoas bursa, lower extremity edema, femoral vein compression

Introduction

Edema of lower extremities is very popular abnormalities caused by numerous conditions. Unilateral extremity edema is usually due to venous or lymphatic obstruction: e.g., deep vein thrombosis, tumor obstruction, primary lymphedema. Iliopsoas bursa is seldom considered to be the cause of lower extremity edema. We report an unusual case of enlargement of the iliopsoas bursa which caused lower extremity edema by the compression of femoral vein, mimicking the symptoms of deep vein thrombosis (DVT).

Case Report

A 58-year-old man was referred to our cardiologist for his 1 year history of edema and dullness in his left lower

extremity. He consulted our cardiologist and the ultrasound technique (US) was performed. This revealed the incompressibility of left femoral vein under compression with the probe, the presence of a slightly echogenic mass, and the lack of venous distension with a Valsalva maneuver. From these findings, he was diagnosed to have DVT and given anticoagulant therapy, which had no effect on his symptoms. So he was consulted to our department. His left lower extremity was swollen with a tender mass, 30 mm × 10 mm in diameter, localized at his left groin. The circumference of his thighs were 45 cm on the right and 50 cm on the left (Fig. 1A). He has not had any medical history related to his hip joint. We performed US again and computed tomographic (CT) scan. They showed cystic lesion compressing his left femoral vein laterally (Fig. 1B, C). Magnetic resonance angiography (MRA) was also performed, which clearly demonstrated cystic lesion connected to the iliopsoas muscle compressing femoral vein externally (Fig. 1D). From these findings, we diagnosed the enlarged iliopsoas bursa compressing his femoral vein as the cause of the edema of his left lower extremity, mimicking the symptoms of deep vein thrombosis. At operation, femoral vein was found to be surrounded by the bursa which was difficult to be resected completely. We opened the bursa which was filled with the viscous fluid (Fig. 2). After evacuation of fluid, we resected the bursa as completely as possible, leaving the region which adhered strictly to the venous wall. By this procedure, reexpansion of the compressed femoral vein was obtained. Postoperative course was uneventful. The edema resolved as indicated by the decrease of his left thigh circumference from 50 cm preoperatively to 47 cm postoperatively, and his symptoms completely disappeared. At 1-year follow-up he is free of symptoms with no evidence of recurrence.

Discussion

The iliopsoas bursa known as the iliopectineal bursa is the largest bursa in the region of the hip joint. It lies posterior to the iliopsoas muscle and overlies the hip joint

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Received: October 23, 2014; Accepted: March 9, 2015
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Fig. 1 (A) The preoperative patient's lower extremities showing the larger circumference on the left. (B) CT scan shows a mass adjacent to the femoral vein mimicking intravenous thrombosis. (C) US shows incompressibility of the vein under compression, the presence of a slightly echogenic mass, which was confused with venous thrombosis, (D) MRA (true FISP) shows extrinsic iliopsoas bursa compressing the femoral vein clearly.

capsule. It is lateral to the femoral vessels and nerve and exists both side of hip joint 98%, and communicates with hip joint capsule 14.3% in adults.¹⁾

Fluid may accumulate in the bursa in various conditions that cause bursitis. Fricke first described the iliopsoas bursitis in 1834.²⁾ It is most commonly observed by the result of rheumatoid arthritis, osteoarthritis, hip joint replacement, and less often by septic arthritis, dialysis related amyloidosis, and pigmented villous nodular synovitis. However, 30% of the patients have no history of those disease.³⁾ We suppose that the repetitive injury to the hip joint caused the bursitis in our case, because the patient played tennis and run a marathon quite frequently.

Generally, enlargement of the iliopsoas bursa may appear as a groin mass and has a pressure effect on nearby structures. Melamed reported the iliopsoas bursitis's triad; a groin mass, a pressure effect on nearby structures and abnormal X-ray of the hip findings.⁴⁾

Fifty two percent of these patients had a pressure effect, 77% in those had compression of the femoral nerve that caused pain, paralysis, and paresthesia, 23% in those had compression of the femoral vein that caused lower extremity edema. Although femoral nerve is in the same compartment of the iliopsoas bursa, femoral vein is

Fig. 2 (A) The bursa 30 mm × 20 mm in diameter was recognized around the femoral vein. (B) The content of bursa was viscous fluid.

in the different compartment. For this reason, compression of femoral vein by iliopsoas bursa is rarely occurred.⁵⁾

The imaging techniques such as US, X-ray, CT scan, and MRI are reported to be useful for the diagnosis. In evaluating a patient with lower extremity edema, US is widely used to evaluate the venous disease, lymphatic disease, or other etiologies such as extraluminal compression of the vein. For the differential diagnosis of the extraluminal processes, enlargement of the iliopsoas bursa should be ruled out. The iliopsoas bursal enlargement without arthritis is more difficult to diagnose than that with arthritis. Although US is simple, quick, and non-invasive method, it sometimes demonstrates false-positive results for DVT when the vein is not identified in obese or edematous limbs, or with low blood volume states.^{6,7)}

MRI can demonstrate whole body and can reveal the lesion of soft tissue as well as the relations with the surrounding structures. Especially it provides a high degree of reliability in the diagnosis and evaluation of cystic diseases like bursa or ganglion around the hip joint by displaying the lesion connected to the articular lumen.⁸⁾

Several forms of therapy are available. Some patients respond well to a rest or to nonsteroidal anti-inflammatory drugs. Instillation of steroid and aspiration of the bursa are useful for the patients who have pressure effect. Surgical removal of the bursa should be considered for the patient who do not respond to these treatments or for the recurrent cases.

In our case, surgical resection of the bursa was performed. After the surgery the symptoms were completely disappeared without any signs of recurrence. However, long-term follow up would be necessary, because the part of the iliopsoas bursa was left on the venous wall with potential for recurrence.

Conclusion

We report a rare case of enlargement of the iliopsoas bursa which caused lower extremity edema by the compression of femoral vein, mimicking the symptoms of deep vein thrombosis. We should take iliopsoas bursa into consideration for the differential diagnosis of the lower extremity edema.

Disclosure Statement

We declare no conflicts of interest.

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