CASE REPORT

Extrinsic compression of the external iliac vein and lower limb edema caused by hip joint synovial cyst

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ABSTRACT

Deep venous thrombosis frequently results in unilateral lower limb edema. A synovial cyst in the hip joint may be a rare cause of this symptom and should be considered in the differential diagnosis. We report on a case in which color-flow Doppler ultrasonography showed presence of extrinsic compression of the external iliac vein. Magnetic resonance imaging showed a synovial cyst as etiologic factor, confirmed by surgical excision.

Keywords: Synovial cyst, deep venous thrombosis.

RESUMO

A trombose venosa profunda (TVP) é uma freqüente causa de edema unilateral de membros inferiores. O cisto sinovial da articulação coxofemoral pode ser uma causa rara desse sintoma e deve ser considerado no diagnóstico diferencial. Apresentamos um caso clínico em que o eco-Doppler colorido revelou a presença de compressão extrínseca da veia ilíaca externa. A ressonância magnética demonstrou tratar-se de cisto sinovial como fator etiológico, confirmado pela ressecção cirúrgica.

Palavras-chave: Cisto sinovial, trombose venosa profunda.

Introduction

Deep venous thrombosis (DVT) is a frequent cause of unilateral lower limb edema. Hip joint synovial cyst could be a rare cause of this symptom. We report a clinical case in which color-flow Doppler ultrasound revealed presence of extrinsic compressions of the external iliac vein. Magnetic resonance showed a synovial cyst as etiologic factor, confirmed by surgical resection.

Case report

A 66-year-old female patient had history of sudden edema of the left lower limb with 2 months of clinical evolution. She denied recent episode of immobilization or weight loss. She had no personal or family history of varicose vein disease and DVT. The patient was under regular use of hormone replacement due to hypothyroidism. On vascular physical examination, she presented increased left lower limb volume with thigh and leg diameter 8 and 4.5 cm higher than the contralateral limb, respectively, besides mild cyanosis in this limb. All pulses were normal and there was no presence of murmurs or palpable masses. She had performed two previous venous Doppler ultrasounds of the lower limbs and only in the second exam there was presence of cystic mass with approximately 2.5 cm in diameter in posteromedial topography of the left hip joint articular capsule (Figure 1). There were no signs of venous thrombosis and intensive ingurgitation of veins proximal to the compression area, and the pelvic radiographic examination did not reveal suggestive images of articular degeneration.

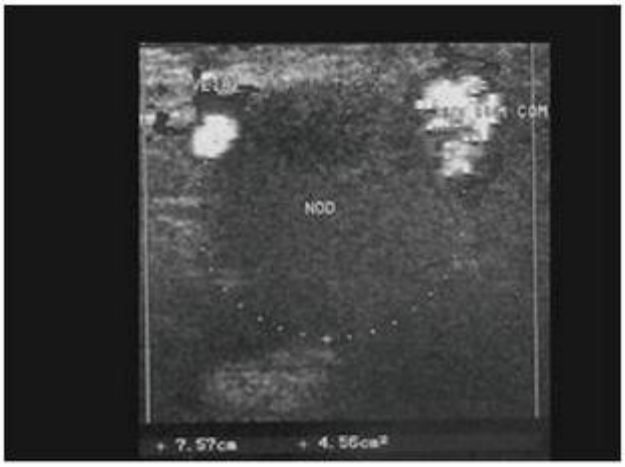

Figure 1 - Color-flow venous Doppler ultrasound showing cystic mass in cross-sectional view, in left inguinal topography, showing compression of the common femoral vein

Angiographic resonance identified presence of cystic mass communicating with the articular capsule (Figures 2 and 3).

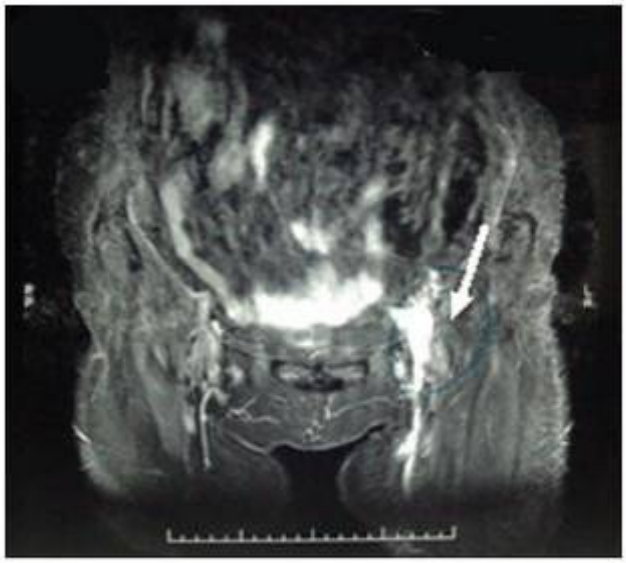

Figure 2 - Intraabdominal magnetic angiographic resonance in coronal view showing extrinsic compression of the left common femoral vein (red arrow)

Figure 3 - Intraabdominal magnetic angiographic resonance in cross-sectional view showing extrinsic compression of the left common femoral vein (red arrow)

A longitudinal left femoral incision was performed, with proximal extension above the inguinal crease, and opening of ligament fibers to access the distal portion of the external iliac vein. There was presence of translucent and hardened cyst that was clearly causing severe stenosis of the venous lumen. The cyst ruptured during surgical resection of the cyst, with exteriorization of mucinous substance. After total resection of the cyst capsule, there was immediate reduction in vein ingurgitation toward the compression zone. Anatomopathological examination revealed cystic mass full of mucinous material and capsule rich in collagen fibers, with no presence of mesothelial or epithelial cells. On the first postoperative day, there was a clear reduction in diameter of the

affected limb and a reduction in feeling of discomfort and weight in the same limb. The patient was discharged on the following day, was asymptomatic and had normal ultrasound examination after a 6-month clinical follow-up.

Discussion

Synovial cyst occurs more frequently in the wrist, ankle and knee, but it can affect other joints. Its occurrence is well known by vascular surgeons, who verify in Baker's cyst a possible differential diagnosis in suspicion of lower limb DVT. The etiology of synovial cyst is related to: 1) formation of hernial sac in the neighboring tissue to the articular capsule; 2) embryonic defects in articular capsule formation; 3) degeneration of the articular capsule due to inflammatory or traumatic disease.[1] Its presence in the hip joint is rare and usually associated with rheumatoid arthritis, osteoarthritis or trauma. Its most common clinical manifestation is the association of mass and pain in the inguinal region or in the anterior thigh – compression of the femoral nerve. However, edema of the affected lower limb can be its first clinical manifestation. Plain radiography of the pelvis can help assess presence of degenerative arthropathies, present in 2/3 of cases of hip joint synovial cyst.[2] In our case, absence of complaint of pain and presence of unilateral edema motivated venous Doppler ultrasound due to suspicion of DVT diagnosis. This method, despite discarding presence of thrombosis correctly, failed at first to identify venous extrinsic compression. Only after observing this compression by angiographic resonance, a more careful ultrasonographic examination could identify partial obstruction of the venous lumen and ingurgitation toward it. Some authors consider phlebography the most sensitive diagnostic method to identify venous extrinsic compression.[3-5] However, we should take into account that it is an invasive method and that a careful ultrasound examination can not only diagnose the cyst and the hemodynamic significance of the compression, but also help us in its percutaneous puncture.[5-10] This method can help us diagnose presence or absence of cyst communication with the articular capsule and, therefore, define the best therapeutic conduct. We know that cyst communication with the articular capsule is associated with recurrence, especially when treatment is performed by percutaneous emptying.[11,12] Perhaps in these cases surgical resection could be better indicated. In or case, we chose this type of treatment because we considered that it is related to lower recurrence rates. In addition, we consider that rare malignant causes can be responsible for extrinsic compression of venous flow (tumors, metastasis) and that surgical resection followed by anatomopathological examination is the only form of establishing definitive diagnosis.[13]

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