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CASE REPORT

Saphenous varix — A pitfall in ultrasound imaging of femoral hernia: A case report

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Abstract Saphenous varix is a rare vascular malformation occurring in the groin and its recognition may pose a diagnostic challenge.

This paper highlights the importance of differentiating saphenous varix from femoral hernia amongst a wide range of possible groin masses, using ultrasound as a front-line imaging modality which clinical examination could not diagnose.

We present a case report of a 39 year old male patient with saphenous varix, a sacculated varix of the greater saphenous vein closely simulating femoral hernia.

Our report highlights the key points to note in correctly diagnosing this rare condition and the role of ultrasound as a cheap, non-invasive and readily available modality.

Introduction

The recognition of possible pitfalls is a key step in arriving at an accurate diagnosis. The saphenous varix occurs in the femoral triangle due to valvular incompetence and responds to palpation during ultrasound scanning with no visible neck.

We present this rare condition found in our practice which highlights the importance of differentiating saphenous varix from femoral hernia.

Case report

A 39 year old male patient with a 3 months history of a dragging and aching swelling in his right groin presented for examination in the out-patient department. Patient had previously experienced severe crampy abdominal pain in the right lower quadrant. The swelling in the groin

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increased in size following prolonged standing and active exercise but disappeared with rest in the recumbent position. Physical examination of the groin revealed a soft round swelling with bluish tinge in the inguinal region. No history of scrotal symptoms or varicose veins was reported.

Initial clinical evaluation indicated an inguinal mass of unknown aetiology with femoral hernia as a likely origin. Ultrasound of the groin and scrotum was requested to evaluate the inguinal orifices, the femoral canal as well as the scrotum.

Using a high frequency 10 MHz multi-dimensional probe of a GE Logiq e ultrasound unit, ultrasound examination in erect and supine positions revealed a compressible, expansile mass with a fluid thrill which responded to cough impulse and Valsalva manoeuvre. It measured (38 × 18) mm in anterior posterior dimension. Focal dilatation of the great saphenous vein at its junction with the femoral vein through the cribriform fascia was noted. Colour and power Doppler interrogation indicated a blood flow within the mass filling from the bottom up and traceable from the great saphenous vein to the femoral vein. Detailed scan of the inguinal orifice and femoral canal were however unremarkable.

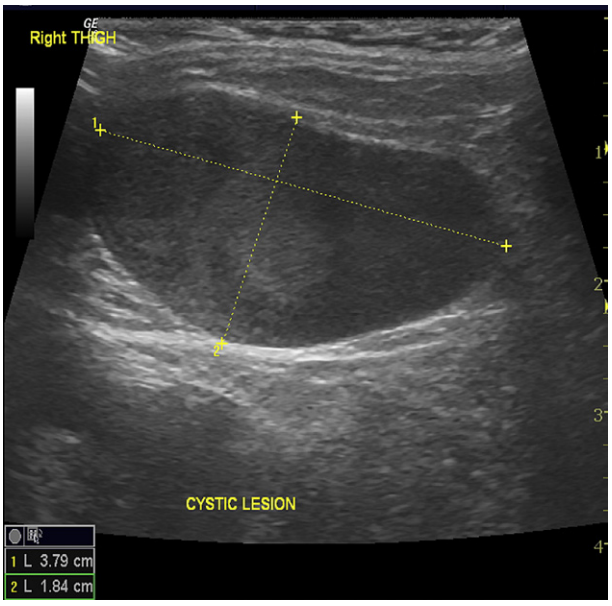

Figure 1 A sac-like fluid collection in the absence of Doppler interrogation.

Discussion

The groin is subdivided into two distinct anatomic areas: the inguinal canal and the femoral triangle. The canal is the medial half of a thickened, external oblique U-shaped inguinal ligament which curls back on itself to form a gutter. While it contains the spermatic cord in the male, it is occupied by the round ligament with fascial coverings in the female [1]. The femoral triangle is bordered by the inguinal ligament superiorly, the long adductor muscle, (medially); the medial border of the sartorius muscle (laterally); and the iliopsoas, pectineal, and long adductor muscles (in the floor). Within the triangle is the femoral sheath containing the femoral artery, femoral vein, and femoral canal. The femoral canal is a space medial to the vein that allows for venous expansion and contains lymph node. Other features of the femoral triangle include the femoral nerve and the great saphenous vein (Fig. 5).

Good anatomical knowledge of this region is necessary to confidently diagnose likely malformations and pathologies in the groin [1,2]. Such conditions include congenital abnormalities, non-congenital hernias, vascular conditions, infectious or inflammatory processes, indirect and direct hernias and neoplasms.

A lump in the groin could be a femoral hernia, cysts, enlarged lymph node, lipoma, undescended testis, retractile testes and vascular lesions like femoral artery aneurysm and the less likely saphenous varix [3]. Lumps occur in the groin at any age, and an appropriate assessment will guide any interventional or treatment pathway.

Ultrasound plays an invaluable role as a front-line, readily available and non-invasive imaging modality in the differential diagnosis of groin pathologies. Its use with MRI and CT scan of the inguinal area has been well documented in making accurate diagnosis to inform patient management and care [4,5].

Ultrasound revealed a sac-like collection, (Figs. 1, 2 and 3) measuring about 4 cm, forming part of a column of blood extending to the femoral vein down the right leg of the patient. This incidental finding of saphenous varix prompted a review of the limited literature on this uncommon malformation [6–9], which indicated that it occurs as a result of valvular incompetence of the vessel; sometimes expanding to reach the size of a golf ball. Physical examination of it with a sharp tap on the varix transmitted an impulse seen in the dilated vessel below.

During scanning, diagnosis was confirmed by observing that the varix filled from below and on palpation with no neck or evidence of a hernia sac contents observed [8]. The soft varix was reducible with manual palpation using ultrasound probe excluding the possibility of partial or full thrombosis of the vein.

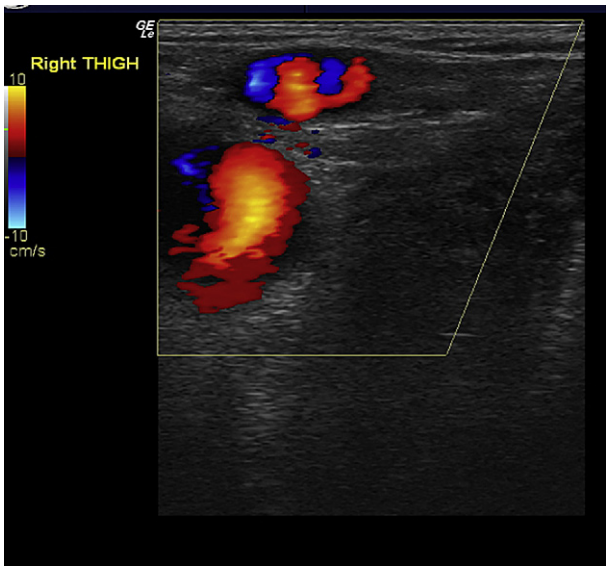

Figure 2 Saphenous varix shows flow on colour Doppler.