

CASE REPORT

Spindle cell sarcoma of the profunda femoris vein mimicking deep venous thrombosis

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Introduction

Ultrasound has been shown as an effective screening investigation for patients with suspected deep venous thrombosis (DVT) of the lower extremity.^{1–4} It is also useful in the discovery of alternative diagnoses, which include conditions such as Baker cysts, haematomas, pseudoaneurysms, lymph nodes, or pelvic masses.^{3,5} The above pathologies are not necessarily associated with a DVT, and if they are, they usually cause extraluminal venous compression.

It is rare for intra-luminal venous obstruction diagnosed by compression ultrasound alone to be secondary to a lesion other than a venous thrombus. Even more unusual is venous obstruction due to sarcoma arising from within the vessel itself rather than from surrounding muscle, bone or other mesenchymal structures.

Soft-tissue tumours are classified based on their principal cytological pattern. The spindle cell pattern is characterized predominantly by atypical spindle cells with fusiform or ovoid nuclei and elongated uni or bipolar cytoplasm. The cells are mostly arranged in sheets or fascicles. Typical spindle cell sarcomas include the leiomyosarcoma, a subset of monophasic synovial sarcoma and dermatofibrosarcoma protuberans, and infrequently, spindle cell GIST and fibrosarcoma.

We report a case of spindle cell sarcoma arising from the profunda femoris vein as a rare mimic of recurrent progressive DVT.

Case report

A 55-year-old woman on hormone replacement therapy (HRT) presented with left calf pain and swelling and was initially diagnosed with a DVT clinically. She had no other risk factors for venous thrombosis. Ultrasound showed a dilated common femoral vein that was filled with hypoechoic material presumed to represent acute thrombus. This was occlusive and had no blood flow distal to it. Within the calf, old post-thrombotic changes were seen in the popliteal vein, whereas the posterior tibial and peroneal veins were found to be occluded. Warfarin therapy was started and she was followed up by a vascular surgeon. Four months after the initial diagnosis, the patient continued to have calf pain and was now beginning to experience claudication after 400 m. The swelling now extended more proximally to involve the thigh with a girth discrepancy of 1 cm in the foot and the ankle, 2 cm in the calf and 9 cm in the thigh. Ankle–brachial pressure indices remained at a normal value of 1, confirming the patient's symptoms to be secondary to venous claudication. A repeat venous duplex examination produced similar ultrasound appearances as before. The INR (International Normalised Ratio) therapeutic range was raised from 2.5 to 3.5 after consultation with a haematologist and computed tomography (CT) examination of the abdomen and pelvis was carried out to eliminate abdominal or pelvic malignancy as a cause of hypercoagulability (Fig. 1). The CT appearances of the intra-luminal filling defect was thought to confirm the left common femoral vein thrombus. Three months later the symptoms were continuing to worsen with claudication distance now reduced to only 100 m and a thigh circumference that had now increased a further 4 cm and the calf circumference by

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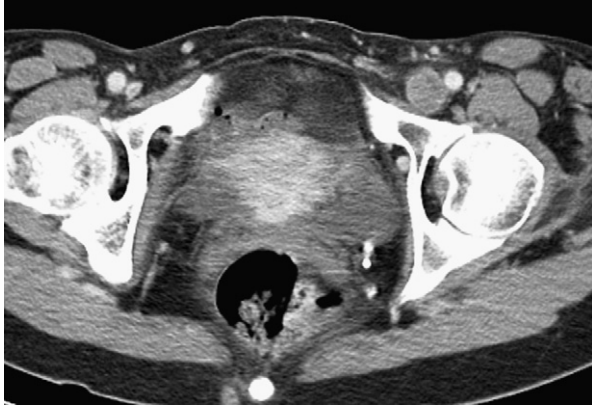


Figure 1 Axial contrast-enhanced CT image. The left common femoral vein is expanded by intra-luminal low attenuation material, thought at the time to be consistent with deep vein thrombosis.

a further 3 cm. Clinically and ultrasonically, it appeared that the DVT had propagated further despite increasing anti-coagulation. Venous duplex still demonstrated an occluded common femoral vein with no recanalization and the thrombus remained echo-poor. There was now evidence of chronic iliac vein thrombosis with complete occlusion of the external iliac vein, and in addition, new occlusive thrombosis of the profunda vein. The profunda vein was grossly swollen. There was no evidence of a discrete mass at this stage nor was there any abnormality identified outside the vein to suggest a neoplasm. HRT was discontinued at this stage and treatment changed from warfarin to enoxaparin, again after haematological review.

The patient meanwhile had been concurrently presenting multiple times to the physicians with spontaneous bilateral pneumothoraces requiring multiple chest drain insertions. Chest CT at this stage had demonstrated multiple pulmonary nodules. CT-guided needle biopsy of a nodule was inconclusive.

Ten months after the patient's initial clinical presentation with calf pain, a fourth venous duplex examination again demonstrated the completely occluded superficial femoral, profunda, common femoral and external iliac veins. The occluding mass within the profunda vein was now very large measuring 4×7 cm with high vascularity on colour Doppler within it (Fig. 2). The common iliac and internal iliac veins remained patent with very large collaterals within the pelvis. CT of the abdomen and pelvis carried out with images acquired in both arterial and venous phase demonstrated considerable progression with a 9×5 cm mass centred on the confluence of the superficial and profunda femoris veins (Fig. 3). There was peripheral

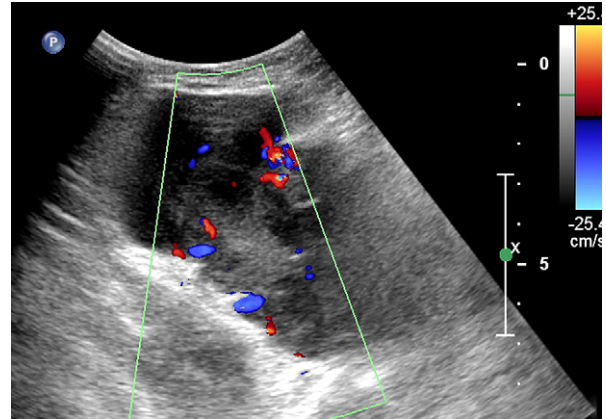


Figure 2 Venous ultrasound of the lower extremity reveals an irregular, large, heterogeneous mass with areas of necrosis at the confluence of the superficial and the profunda femoris veins. The mass demonstrates abnormal high vascularity on colour Doppler. The femoral vessels cannot be identified discretely at this level.

enhancement and central areas of low attenuation. The mass infiltrated adjacent muscle tissue and extended proximally along the common femoral vein and into the origin of the long saphenous vein. Superiorly it extended to the level of the proximal external iliac vein. There was no lymphadenopathy locally or intra-abdominally. At the same time, the possibility of pulmonary metastases was raised as the patient was continuing to have recurrent pneumothoraces, although previous CT-guided biopsies had proved inconclusive.

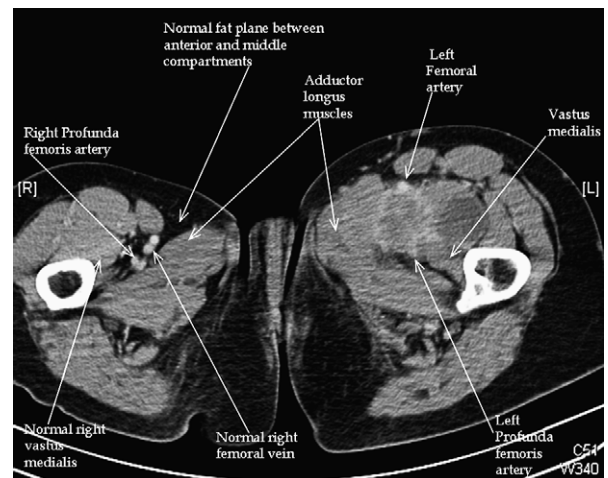


Figure 3 Axial contrast-enhanced CT image shows a heterogeneous, soft-tissue mass filling the fat plane between the anterior and medial compartments of the thigh at the confluence of the superficial and profunda femoris veins. The adductor longus and vastus medialis muscles cannot be delineated separately from this mass. Superficial collaterals noted. The femoral and profunda femoris arteries fill with contrast normally.

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