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Rare Case of Isolated True Aneurysm in the Superficial Femoral Artery with Deep Vein Thrombosis: A Case Report

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ABSTRACT

This is a case report of a 83-year-old male patient who has undergone multiple dialysis of late via femoral vein cannulation of both lower limbs, who presented with bilateral limb swelling, pain and immobility of about of three weeks.

Doppler ultrasound scan revealed a huge left superficial femoral aneurysm with Ying-Yang colour flow sign with ipsilateral deep vein thrombosis. Note associated muscle collections bilaterally worse on the left.

We present a case of left superficial femoral artery aneurysm with associated deep vein thrombosis as well as bilateral lower limb intramuscular hematoma. Doppler ultrasound is extremely valuable in the immediate diagnosis of cause of swollen and painful limbs to rule out deep vein thrombosis and/or aneurysms. Most facilities have doppler component in their ultrasound machine and also Radiologists who are proficient in the doppler studies.

KEYWORDS: Superficial femoral artery aneurysm, Doppler Ultrasonography, Deep vein thrombosis, Case report.

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INTRODUCTION

Aneurysms can occur in any part of the body, aneurysms are infrequent in the femoral artery and fewer in the superficial femoral artery (SFA).[1–3] The few number of reported cases of femoral artery aneurysms frequently occur simultaneously with other aneurysms. Interestingly, they share similar risk factors with aortic aneurysms including older age, male sex, smoking, hypertension, hyperlipidaemia or diabetes mellitus.[4] The diagnosis of SFA may be delayed until severe complications happen, since its anatomical location which is deep within the leg is a disadvantage in disguise.[2,3,5] In addition, the absence of the above-mentioned risk factors, diagnosis could be extremely delayed until severe complications such as rupture occur. We present a case of SFA with co-existence of deep vein thrombosis (DVT) and intramuscular hematoma in a dialysis patient.

AIM/OBJECTIVE

To report the co-existence of multiple deep vein thrombosis, intramuscular hematoma and superficial femoral artery aneurysm in a dialysis patient in our environment as well as further add on the already existing knowledge of the invaluable use of doppler ultrasonography in confirming the diagnosis of this rare condition.

CASE REPORT

Our case study is an 83years old man who presented to the Radiology department for an emergency lower limb doppler ultrasonography on account of bilateral lower limbs pain and swelling? Due to femoral vein cannulation for dialysis for about three weeks. Positive history of immobility was given by his relative.

On physical examination, patient was in severe painful distress, vital signs were normal and throughout his stay in the ultrasound suite. Patient also had a musculoskeletal scan done which revealed multiple pockets of collections involving the thigh muscles of both limbs (Left >>Right). The multiplicity of cannulations, age and immobility could be the predisposing factors in this case study.

Doppler ultrasound shows a huge saccular dilatation seen in the proximal segment of the left SFA measuring 2.51cm x

2.32cm with turbulent flow giving the Ying-Yang colour sign(see images below). The proximal portion of the left femoral vein is dilated and filled with a slightly passable echogenic thrombus that is non-compressible. Similar echogenic thrombus is also seen in the left popliteal vein and the small saphenous vein. Multiple collections are seen in the muscles of the thigh bilaterally with reactive lymph-nodes. Note extensive subcutaneous swelling extending up to the proximal thigh bilaterally. Patient is currently on medications-antithrombotic agents and antibiotics.

Images:

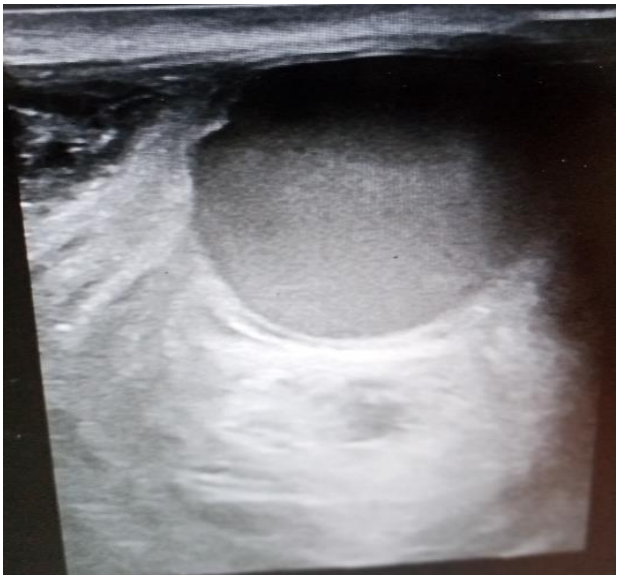
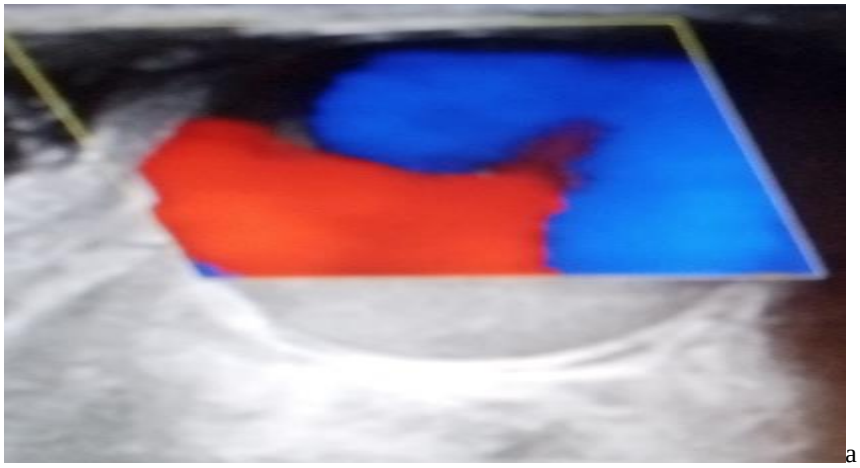
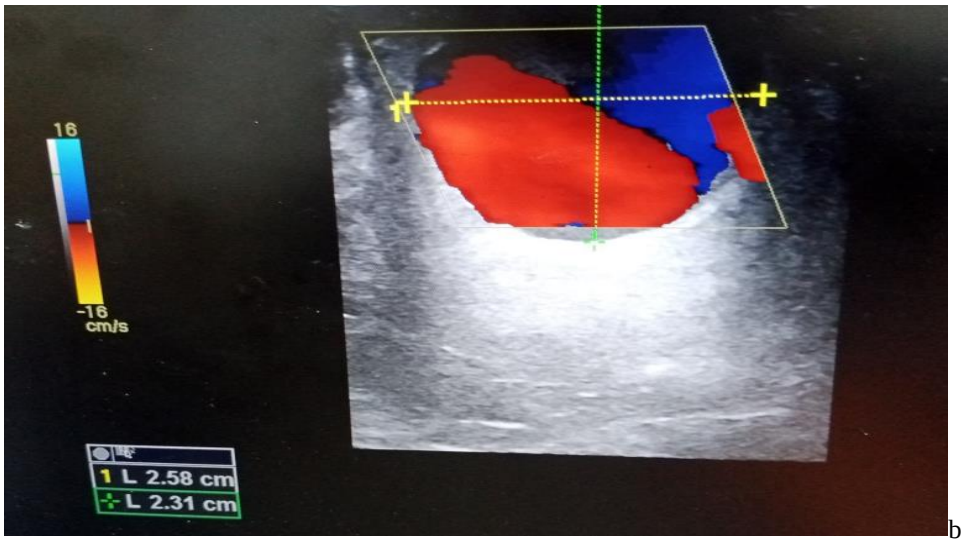


Figure 1 is a b-mode image of the superficial femoral artery.



a



b

Figure 2a and 2b are colour doppler image of the SFA with its dimensions alongside the Ying-Yang sign..

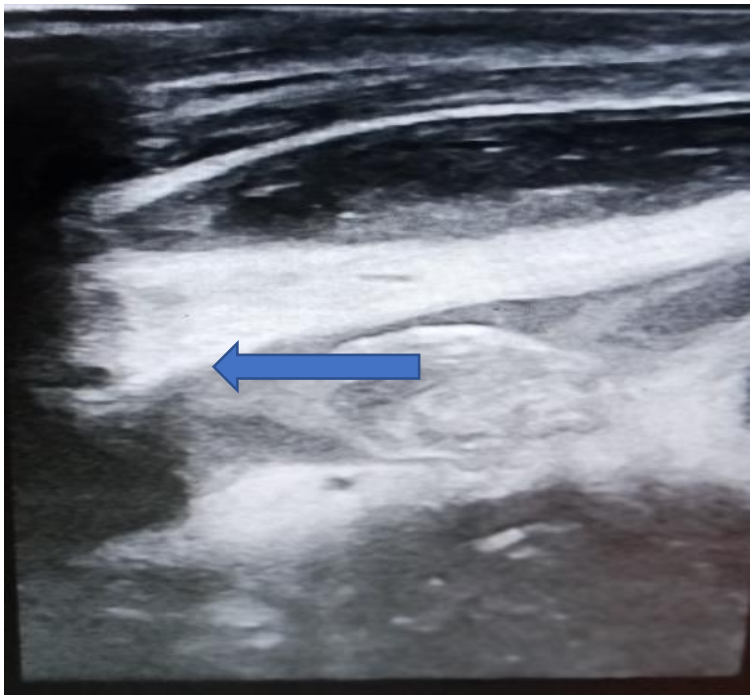
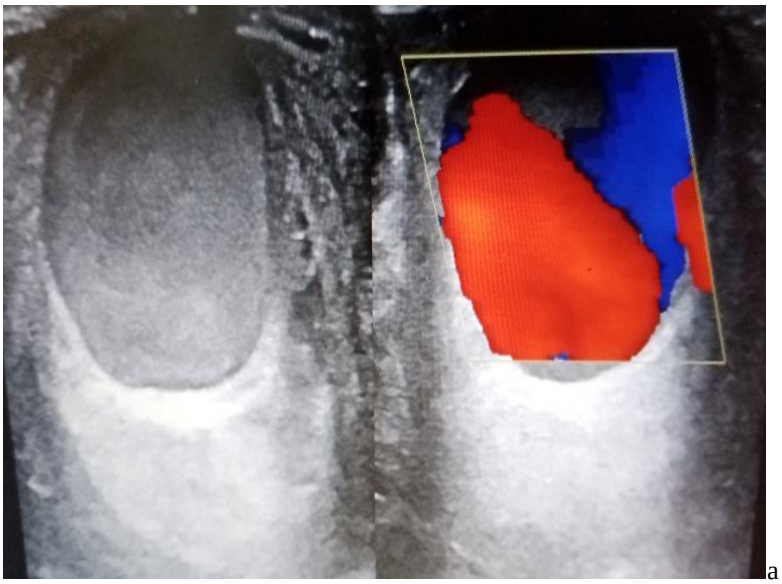
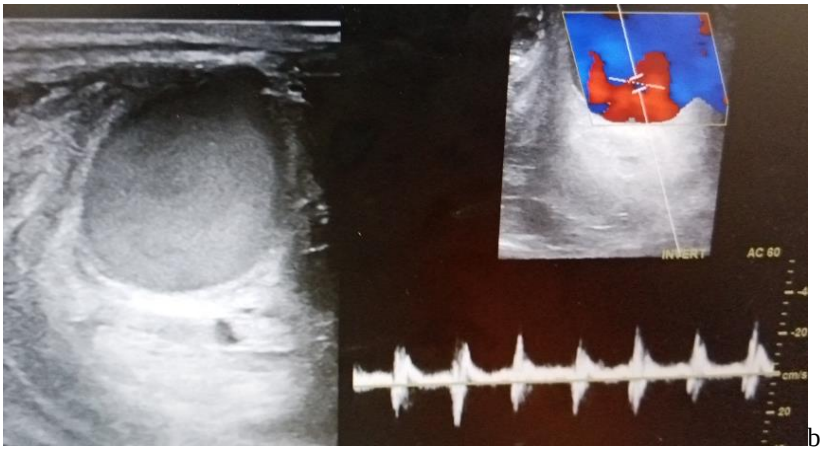


Figure 3 is a b-mode image showing the thrombus in the femoral vein (blue arrow), that is passable



a



b

Figure 4a and 4b are b-mode and colour doppler images of the SFA with its wave forms with pulse wave application.

DISCUSSION

SFA aneurysm are scarce disease that is prone to misdiagnosis. Large portion of the earlier reported cases happened in elderly individuals and were ruptured and, thus, surgically managed.[1,2,5] An earlier review literature analyzed 61 cases of SFA aneurysm; the average patient age was 75.7 years (range 59–95), 24 (39.3%) aneurysms were not ruptured, and in only 3 (4.9%) cases endovascular treatment was used.[2] Higher prevalence in the elderly male was documented.[2] Our case was characterized by an unusual clinical course in that SFA aneurysm was diagnosed in an elderly male patient with myriads of risk factor, unruptured at diagnosis with deep vein thrombosis and antithrombotic treatment is engaged. Mostly, the patient's age, 83 years, it falls within the age bracket of earlier studies and the male gender[2, 3] Notably, atherosclerosis is the foremost aetiology of true aneurysm,[3] nevertheless connective tissue disease, infection, or trauma could be alternate sources. It is worthy of note, that a case of congenital aneurysm has also been described in early childhood.[6]. The distal femoral artery could potentially be deformed by bending, twisting, and compressing upon itself with limb flexion and extension.[7]Unheeded minor trauma while attempting to walk and repeated external stress owing to alternate cannulation of both lower limbs, may have led to delayed diagnosis, could be the most likely causes of the aneurysm in this case. Delayed diagnosis/misdiagnosis and inappropriate mechanical treatment may have worsened this condition. This is similar to an earlier report by Seyong Chung et al, [8] who attributed the isolated SFA to golf playing, excessive repeated stress from acupuncture and shock wave treatment respectively on the affected limb during the misdiagnosed period was implicated as cause in their case report. Globally, ultrasonography with Doppler imaging is easy to use and non-invasive method for establishing SFA aneurysm. Notably, SFA aneurysms are extremely rare. Doppler ultrasonography plays an important part in the evaluation of the patient, but standard methods have not been established because of its rarity. Ultrasonography is a non-ionizing imaging modality and is carried out real time, scanning of the region of interest should be undertaken in all patients done in b-mode, colour and pulse wave forms.

CONCLUSION

This case report has shown that radiological investigations are pivotal in the management of suspicious deep venous thrombosis and palpable thigh masses which could be an aneurysm awaiting reupture. In which doppler ultrasonography and computed tomography angiogram (CTA) can be used to confirm the diagnosis.

CONSENT: Verbal/written consent was obtained.

CONFLICT OF INTEREST: None

AUTHORS CONTRIBUTION

VNA- Manuscript conceptualization, reviewed the manuscript, performed and interpreted the radiological studies, CW-Reviewed and edited the manuscript, OI - Clerked, scanned and interpreted images, reviewed and edited the manuscript.

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