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Adesh University Journal of Medical Sciences & Research

Case Report

Pretibial varicose veins with anomalous intraosseous venous drainage: A rare disease entity

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Received : 25 November 19
Accepted : 25 November 19
Published : 27 December 19

DOI
10.25259/AUJMSR_6_2019

Quick Response Code:

ABSTRACT

We present a case of pretibial varicose veins with intraosseous perforating vein incompetence, which manifested as swelling and tenderness over the shaft of tibia. It was misdiagnosed by referring clinicians as a case of subacute osteomyelitis based on clinical findings and X-ray film. Further investigations were done which included magnetic resonance imaging, computed tomography scan, and color Doppler.

Keywords: Pretibial varicose veins, Intraosseous, Drainage

INTRODUCTION

Varicose veins are dilated tortuous veins usually affecting superficial venous system but can also affect deep venous system or both. They usually occur due to venous outflow abnormality, more commonly affecting lower limbs. A variety of causes has been implicated in the development of varices such as incompetent saphenofemoral junction, saphenopopliteal junction, or incompetent perforator. Association of these pretibial varices with anomalous intraosseous venous drainage is relatively rare.[1] This study aimed at reporting an unusual case of anomalous intraosseous venous drainage with pretibial varices, the diagnosis of which is pivotal for correct management and improving the quality of life of the patient.

CASE REPORT

A young adult male patient reported in the orthopedic outpatient department with chief complaints of pain and swelling on the right shin from past 4 years. On physical examination, a swelling was seen on the shaft of tibia with tenderness present over that site. The patient was provisionally diagnosed as subacute osteomyelitis due to swelling and tiny osteolytic lesion on X-ray [Figure 1] by referring clinician and was advised magnetic resonance imaging (MRI) for further evaluation. MRI right leg was done along with complementary computed tomography (CT) scan and color Doppler for academic purposes. Color Doppler sonography revealed [Figure 2] varices in mid part of the right leg with competent saphenofemoral junction/ saphenopopliteal junction with incompetent perforators on medial aspect of leg. CT scan revealed an osteolytic lesion corresponding to intraosseous tract/nutrient foramina of dilated perforating vein [Figure 3]. MRI of the right leg was performed using TIWI, T2WI, and STIR sequences in multiple planes before and after IV contrast. There was evidence of dilated intraosseous

Figure 1: X-ray showed a tiny round lytic defect of prominent nutrient foramina in mid tibial diaphysis location.

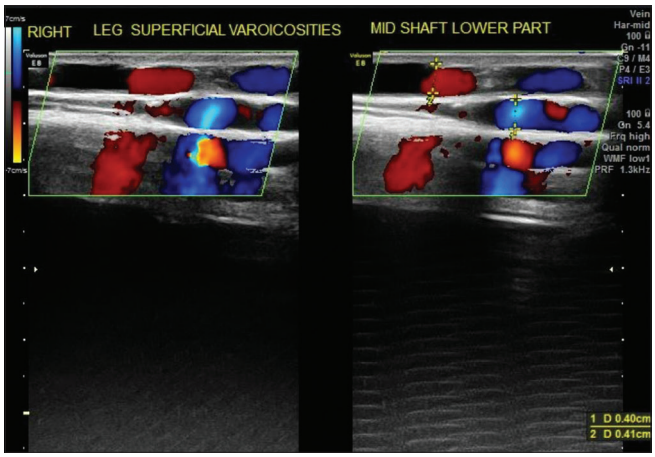

Figure 2: Color Doppler right leg showing varices in shaft region and incompetent perforator.

perforating vein in mid-tibial diaphysis corresponding to lytic defect/prominent nutrient foramina seen in X-ray along its course in tibial diaphysis. It shows anomalous communication with pretibial varices. Intraosseous course of perforating vein extends inferiorly from medial aspect of tibia and extends superiorly in shaft region for length of approximately 7.5 cm (Max. diameter ~7.8 mm) and opens on lateral aspect of mid shaft of tibia [Figures 4a and b].

DISCUSSION

The prevalence of lower limb varices is more in Northern Indian population.[2] However, the presence of intraosseous incompetent perforator is a very rare entity. The diagnosis of this rare disease is very important for appropriate management of such cases. It can only be confirmed by radiological investigations and also helps in ruling out various close differential diagnosis.

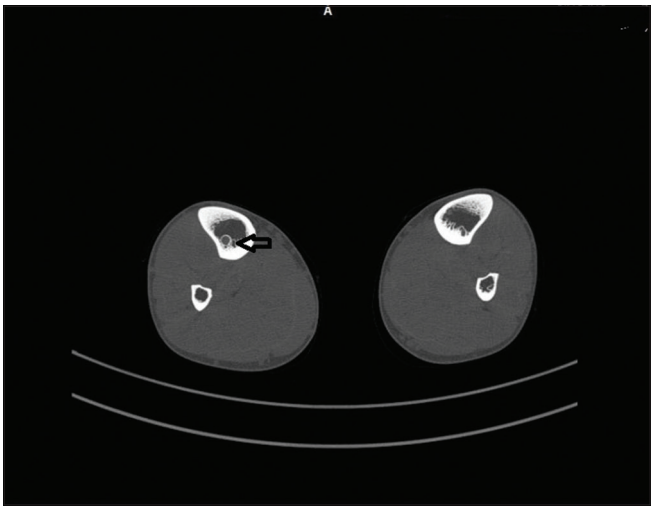

Figure 3: Computed tomography scan showing lytic area corresponding to tract of anomalous intratibial dilated perforating vein.

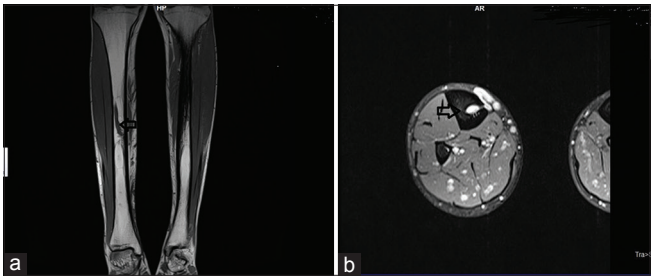

Figure 4: (a) Magnetic resonance imaging (MRI) leg showing complete tract of intratibial dilated perforator including its entry and exit point as well as external varices. (b) MRI leg showing complete tract of intratibial perforating vein including its entry and exit point as well as external varices.

On X-ray close differential diagnosis of prominent nutrient, foramen includes oblique fracture,[3] lytic lesion, and osteomyelitis. X-ray can be misleading as lytic defect of prominent nutrient foramen seen on X-ray can be interpreted as cloaca and along with overlying soft tissue swelling, the clinician can misdiagnose it as osteomyelitis as it was done in our case. CT scan helps in ruling out these close mimics seen on X-ray and also helps in diagnosing intraosseous anomalous perforating vein and shows lytic defect associated with anomalous tract. Other differential diagnoses of enlarged intraosseous vessel are arteriovenous malformation (AVM) and primary intraosseous hemangioma which can be ruled out by Doppler scan and MRI.[4] Ultrasound is useful investigation to diagnose pretibial varices and to see reflux; however, intraosseous communication can be missed on it. However, MRI is considered to be the most sensitive as well as more accurate method for diagnosis of this anomaly. MRI provides complete details including the presence

of pretibial varices and its anomalous intraosseous tract through medullary canal. Furthermore, MRI helps in excluding other close differentials such as AVM,[5] primary intraosseous hemangioma, prominent nutrient foramen, and osteomyelitis.

CONCLUSION

Pretibial varices with intraosseous anomalous communication are rare entity which can be diagnosed with confirmation on radiological investigations especially MRI. Diagnosis of this anomaly is very important before treatment as sclerotherapy, which is the treatment option for patients with varicosities due to other common causes, is not done in such cases. The best treatment option for these patients of varicosities with underlying intraosseous anomalous vein is ligation and stripping or percutaneous ablation.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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How to cite this article: Singh P, Kaur M, Garg N. Pretibial varicose veins with anomalous intraosseous venous drainage: A rare disease entity. Adesh Univ J Med Sci Res 2019;1(1):37-9.