Superficial Femoral Vein Dysgenesis: CT Venography: Case Report

Süperfisiyal Femoral Ven Disgenezisi: BT Venografi

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ABSTRACT A 17-year-old male patient was admitted to our outpatient clinic with the initial diagnosis of perforating vein insufficiency. Lateral marginal vein which was not noticed by radiologist was detected by vascular surgeonby using M-Mode and duplex ultrasound. Then, computerized tomography venography was performed. There were common venous malformations distal to the knee in the lateral aspect of the leg, and popliteal vein was continuous with the lateral marginal vein. A rudimentary superficial femoral vein was detected. Before surgical intervention, vascular surgeons should evaluate patients by duplex ultrasound.

Key Words: Venous insufficiency; vascular malformation

ÖZET On yedi yaşındaki erkek hasta, polikliniğimize perforan venöz yetmezlik ön tanısı ile başvurdu. Polikliniğimizde vasküler cerrah tarafından yapılan M-Mod ve Doppler ultrasonografide (USG) radyolog tarafından tespit edilemeyen lateral marginal ven tespit edildi. Hastaya yapılan bilgisayarlı tomografi (BT) venografide diz altında yaygın venöz malformasyonlar mevcuttu, popliteal ven lateral marginal venle devam etmekteydi ve yüzeyel femoral ven rudimenter olarak gözlendi. Cerrahi işlem öncesi mutlaka vasküler carrahlar da Doppler USG ile hastaları değerlendirmelidirler.

Anahtar Kelimeler: Venöz yetmezlik; vasküler malformasyon

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Lateral marginal vein (LMV) is a kind of persistent fetal vein that has failed to regress. It is typically located along the lateral aspect of lower extremity. The presence of LMV as an isolated lesion is quite rare and this congenital venous malformation is usually associated with Klippel-Trenaunay syndrome.[1] This anomaly is usually seen in childhood and young adulthood.[1-3] The presence of LMV is not uncommon in patients with lower extremity venous malformations (VM). LMVs are often associated with deep venous anomalies such as aplasia or hypoplasia. We present a case of LMV with lower extremity VM which was diagnosed by detection of LMV in our clinic.

CASE REPORT

A 17-year-old male patient was admitted to our outpatient clinic with pain and multiple giant varicosities in his right leg. He had leg pain since his

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childhood. He had no limb hypertrophy, capillary malformations or limb discrepancy on physical examination. The patient's C score according to CEAP classification was C3. The patient was referred to our clinic with an initial diagnosis of perforating vein insufficiency based on his venous duplex ultrasonography performed by a radiologist in another hospital. The diagnosis on the report was great saphenous vein and perforating vein insufficiency. Before the planning the operation, duplex ultrasonography was performed in our clinic by a vascular surgeon. The proximal part of the great saphenous vein was not visualized, and we noticed that the superficial femoral vein diameter was quite small. Therefore, we suspected the possibility of a venous malformation. We followed the dilated vein along the lateral aspect of lower extremity andLMV was detected. After consulting with radiology clinic, a computed tomographic venography was performed subsequently, and common venous malformations were detected below the knee. The popliteal vein was continuous with LMV and a hypoplastic superficial femoral vein was present (Figures 1, 2A-C). Lateral marginal vein was draining into the common femoral vein. Coil embolization was recommended for the malformed venous malformations below the knee.

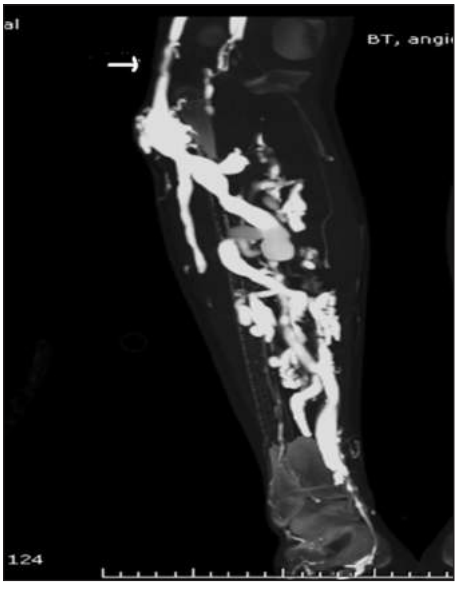

FIGURE 1: Varicosities constitute collateral channels with deep venous system and lateral marginal vein (arrow).

DISCUSSION

The marginal vein is an abnormal superficial vein of the lateral lower limb and this valveless vein may lead venous stasis. Limb length discrepancy and nevus may coexist. Venous insufficiency caused by LMV ultimately creates persistent venous hypertension of the lower extremity. LMV consti-

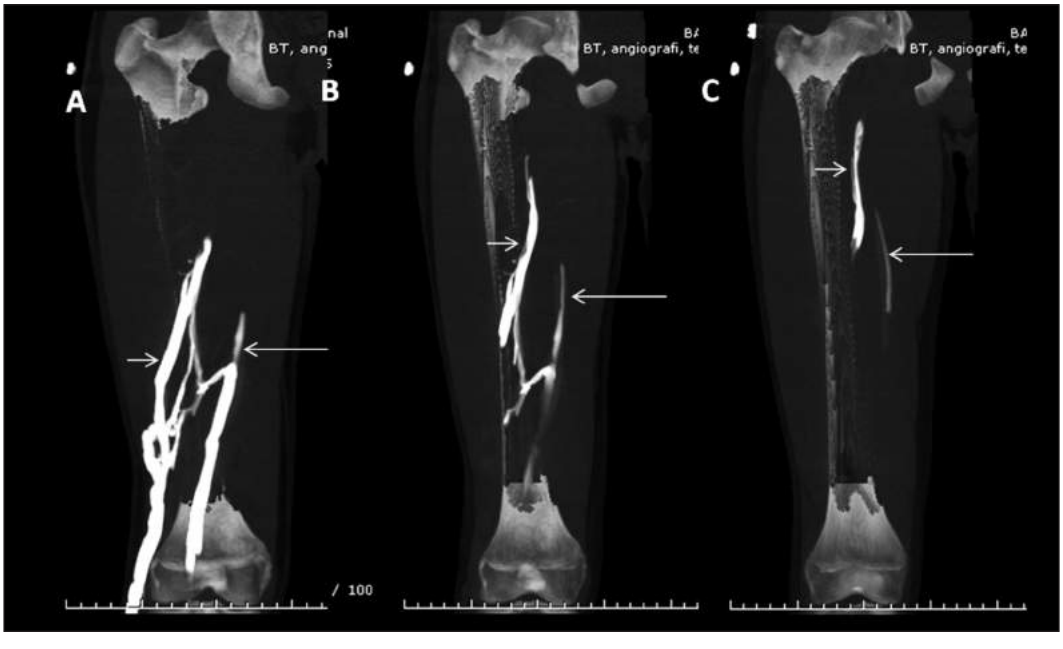

FIGURE 2: Popliteal vein is continuous with lateral marginal vein (arrow) and hypoplasia of superficial femoral vein (big arrow) is seen.

tutes a collateral venous channel for the affected limb with other venous collaterals in patients with deep venous aplasia of the lower extremity.[4] Sometimes, lateral marginal vein is connected with bifid great saphenous vein; but in our patient, great saphenous vein was draining into the varicosities below the knee; not into the common femoral vein, and there was no bifid great saphenous vein.

The most common is the persistence of the LMV, found in 68-80% of Klippel-Trenaunay syndrome patients.[3,5] Klippel-Trenaunay syndrome is a rare condition. It consists of a combination of vascular malformations (capillary malformations, most commonly port-wine stains which usually has an irregular margin and a clear, sharp border, venous malformations and varicose veins) and hypertrophy (bone and/or soft tissue). There is a tendency to affect the lower limb unilaterally.[6] In a study, capillary malformations (port-wine stains) were observed in 98%, varicosities or venous malformations in %72, and limb hypertrophy in 67% of patients with Klippel-Trenaunay syndrome.[7] Our patient had only venous malformations and hence we did not diagnose this syndrome.

Lateral marginal vein treatment depends on the patient's symptoms and condition of the deep venous system. Compression stockings are sometimes recommended when LMV is not prominent or the patient is asymptomatic. The best treatment is complete surgical resection of the vein.[8] Surgical excision indications of LMV are (i) prominent LMV accompanied with clinical symptoms of chronic venous insufficiency; (ii) thrombus in LMV and (iii) significant limb length discrepancy (>2 cm) in pediatric patients.[3] Symptomatic marginal veins with venous stasis and limb-length discrepancy in childhood should be treated as soon as possible to achieve length discrepancy correction.[9] Closed stripping should not be preferred because of the hazard of massive bleeding and hematomas. A semi-closed resection is recommended with clear exposure of the veins, especially for large perforators to be ligated. Even though embolo-sclerotherapy procedure can be recommended in complex form of congenital venous malformation;[10] this management or laser treatment can cause skin damage and uncomfortable scar and long-lasting painful inflammation especially in a visible vein. Surgical resection should be avoided if LMV is associated with the deep venous agenesis or hypoplasia of the ipsilateral leg. Therefore, an assessment of the deep venous system is mandatory, because LMV excision in patients with aplasia or hypoplasia of the deep venous system subsequently leads to worsening of the venous hypertension. Moreover, even if not specified by ultrasound, when the absence of proximal or distal part of greater saphenous vein is detected during the closed stripping orientation of the wire to the lateral aspect of the limb intraoperatively, VM can be considered. However, in our opinion, most of the time it is not possible and detection of the deep venous anomaly is impossible intraoperatively.

In conclusion, especially in young adulthood, venous system anomaly should be kept in mind in patients who suffer from chronic venous insufficiency the possibilityand superficial capillary malformations such as nevus flammeus, limb-length discrepancy andlimb hypertrophy should be examined. Nevertheless, every vascular surgeon should perform duplex ultrasonography by himself before the surgical intervention, and in case of any suspicion, duplex ultrasonography should be performed by another qualified radiologist. Although these VMs are rare, all venous structures should be examined to avoid an inappropriate surgical procedure.

Conflict of Interest

Authors declared no conflict of interest or financial support.

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