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Case Report

Minimally invasive treatments for perforator vein thrombosis in varicose vein with recurrent thrombophlebitis: a case report

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ABSTRACT

Perforator vein thrombosis is less studied than deep vein thrombosis (DVT), because it has been considered to be a minor, self-limiting disease that is easily diagnosed on clinical grounds and that requires only symptomatic relief. The most frequently involved sites of the perforator vein are the lower limbs, especially mid leg below knee joint, mostly in relation to varicosities. Lower-limb perforator vein thrombosis shares the same risk factors as DVT; it can propagate into the deep veins, and have a complicated course with pulmonary embolism. We will report about a case of perforator vein thrombosis with recurrent thrombophlebitis and cellulitis and subfascial ligation along with thrombectomy of perforator vein thrombosis following the therapy of truncal varicose vein great saphenous vein (GSV) with endovenous laser ablation (EVLA) in one session after conservative treatment.

Keywords: Perforator vein, thrombosis, DVT, Endovenous laser ablation

INTRODUCTION

Thrombosis in the superficial veins has been termed superficial thrombophlebitis (STP) or superficial vein thrombosis. It is most often found in the veins of the lower extremities but it has been reported in many other locations.

The thrombosis in the area of the perforator vein is rare complication as compare to superficial truncal veins and cutaneous veins (superficial venous thrombosis or thrombophlebitis) is not a rare complication; it requires drug or surgical therapy if the thrombosis grows in the direction of deep veins or patients with thrombosis in proximity to the deep veins.

Risk of deep vein thrombosis is around 20% of cases if thrombosis of perforator vein along with truncal vein thrombosis or thrombophlebitis.[1-5]

Thrombus extension of a below knee saphenous and perforator vein thrombus to the popliteal vein.[6]

If patients have only symptoms of uncomplicated superficial thrombophlebitis is usually treated conservatively with elastic stockings (ES), ambulation, antibiotics, and non-steroidal anti-inflammatory drugs (NSAIDS).[7-10]

CASE REPORT

The 36-year-old male patient presents with pain, erythema, and swelling around a superficial vein that becomes solid and on palpation feels like a cord in the affected area of right leg first time in July 2024. Although its diagnosis was based solely on clinical assessment, the use of duplex ultrasound imaging has enabled the accurate detection of its extent and progress. Doppler report shows varicose veins with perforator vein thrombosis with thrombophlebitis with cellulitis. Both the great saphenous veins and the perforator vein were affected. In a current

case, we saw a fresh thrombosis (approximately 7 days old) of the perforator vein along with thrombophlebitis and cellulitis in the mid leg of right lower limb area of perforator vein. Patient was treated conservative for thrombophlebitis and cellulitis and starts therapeutic dose of anticoagulant and antibiotics, warm compression, limb elevation along with non-steroidal anti-inflammatory agents orally and topical treatment, local application of hirudoid and agents with enzymatic action have been used, these may have some effect in the alleviation of pain and local inflammatory signs. After one week review venous colour Doppler ultrasound done suggestive intact thrombus but reduce localized oedema of lower limb. Due to intact perforator vein thrombosis bulging towards deep vein patient planned for thrombectomy and subfascial perforator ligation along with endovenous laser ablation (EVLA) varicose vein ablation of great saphenous veins on the operating table.

Figure 1: Perforator vein with thrombus.

Figure 2: Visible perforator vein thrombus right lower leg.

On 16 July 2024, minimally invasive therapy using EVLA along with thrombectomy subfascial ligation of affected perforator vein. During procedure the duplex sonographic (Figure 1) localize the perforator vein of thrombus. Skin incision give to affected perforator vein site followed by thrombectomy and subfascial ligation of affected perforator vein (Figures 2 and 3) then we ablated the great saphenous veins in the normal supine position.

Figure 3: Subfascial perforator ligation and thrombectomy of perforator vein.

DISCUSSION

Recurrent superficial thrombophlebitis (STP) associated with clot in perforator vein in case of varicose vein patient can be associated with more serious conditions, notable DVT and PE. Compressive ultrasonography can identify concomitant DVT, evaluate the extent of the thrombus, and confirm the diagnosis.[11,12] There is also a significant association of STP with hypercoagulable states. A relationship between STP and malignancy has been reported but its strength has not been determined. It is important to exclude concomitant DVT at presentation. Therefore, its diagnosis should not rely only on clinical evaluation but DUS should be included.

Minimally invasive treatments have replaced traditional surgical treatments for incompetent perforator veins. Risk factors for incompetent perforator veins are the same as for all chronic superficial venous disease, including history of deep venous thrombosis, multiple pregnancies, advanced age and genetic factors.[13] Current minimally invasive treatment options include subfascial ligation of perforator vein, ultrasound guided foam sclerotherapy (USFS) and endovascular thermal ablation (EVTA) with either laser or radiofrequency energy sources.

In the treatment of truncal varicose veins, catheter-supported procedures (laser, radio frequency ablation, VenaSeal®) have largely become established over the past 21 years and radical surgery has taken a back seat. The VenaSeal® procedure is currently still the latest, although it was approved in Europe in 2011 and the USA in 2015.

It can be said that the therapy of thrombosed perforator vein of varicose veins is primarily the healing and recanalization of the thrombosed areas by means of medicament therapy. Additional active intervention is only recommended if the medical therapy is failed. This procedure aims to shorten and alleviate the thrombotic changes in the varicose vein as well as absolute protection against deep vein thrombosis with possible pulmonary embolism. So far, we have not seen any side effects or complications in our treated patient.

CONCLUSION

High risk of thrombus extension of a below knee saphenous and perforator vein thrombus to the popliteal vein leads to deep vein thrombosis and pulmonary embolism so clot evacuation is key to prevent recurrent thrombophlebitis in complicated varicose vein.

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