ELSEVIER

Case Report

Free Omental Flap for Tissue Defect Coverage after Resection of Complicated Venous Malformation in the Area of the Knee

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Venous malformations are the most common slow-flow vascular malformations; they are not prone to volume decrease over time, and invasive treatment is usually required. There are 2 main techniques to address the definitive therapy of these lesions, sclerotherapy and surgical excision, each with its own advantages and disadvantages. We report the case of a 56-year-old man who came to our attention with persistent pain after multiple unsuccessful attempts to treat a large venous malformation located in the area of the right knee. After radical excision of the painful lesion, we covered the resulting major tissue loss (20 cm × 15 cm) with a free omental flap. The arterial and venous anastomoses were on the region above the knee pedicles. The postoperative course was uneventful. A secondary skin grafting was performed. The patient is doing well at 1-year follow-up. The omental flap may be a bailout solution for tissue loss coverage in the knee area when the use of the common fascia-cutaneous or muscular flaps is not possible.

Venous malformations represent the most frequent type of slow-flow vascular malformations.[1] When localized in the limb, in adjunct to pain and esthetic disfigurement, they can also lead to serious complications such as life-threatening bleeding or functional impairment, especially in young and active patients. As they are not prone to volume decrease over time, an invasive treatment is generally required.[2]

The tissue loss caused by the surgical resection in the knee area is usually treated by fascia-cutaneous or muscular flap.[3] However, in the case of large tissue defect in a highly mobile location associated with damaged tissues in the local flap areas, this option become undermined.

CASE REPORT

A 56-year-old man with severe chronic pain localized in the anteromedial aspect of the right knee, refractory to common analgesic drugs, presented to our outpatient consultation (Fig. 1).

Physical examination of the painful area revealed the presence of a nontender mass without any palpable pulsation, and its margins were vague with blue-purple swelling of the above skin. There was a fibrotic transformation of the subcutaneous tissues in the whole anterior aspect of the thigh, the result of several sclerotherapy sessions.

Symptoms had appeared for the first time at the age of 45 years. Later on, the patient underwent Doppler ultrasound and magnetic resonance angiography examinations that revealed the presence of a vascular

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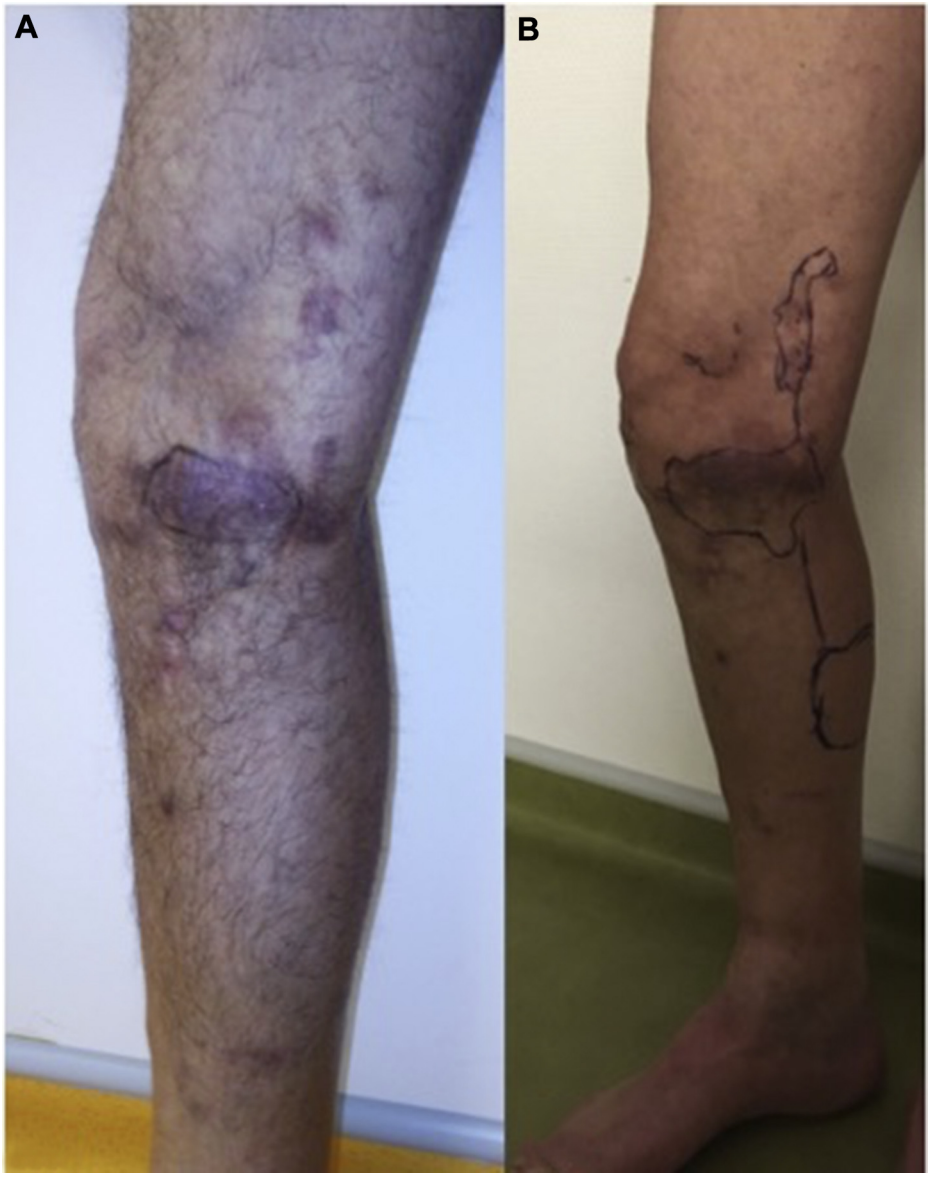

Fig. 1. Preoperative status of the leg in a patient with severe chronic pain localized in the anteromedial aspect of the right knee **(A**, **B)** (the marked area **[B]** shows the painful area).

malformation that extend to anterior and proximal aspects of the thigh. The lesion was partially removed at the age of 48 years. The histologic examination of the surgical specimen confirmed the presence of a venous malformation.

Five years after surgery, because of the persistence of symptoms and extent of recurrences of the lesion, the patient was treated by percutaneous image-guided injection of cyanoacrylate-based biosynthetic glue. This resulted in the dramatic worsening of pain and diffuse fibrotic transformation of the subcutaneous tissue, particularly at the femoral level. Consequently, after the realization of an magnetic resonance angiography, he underwent another uncompleted surgical reintervention without any clinical improvement (Fig. 2).

After multiple attempts to manage the pain with noninvasive techniques, the patient came to our attention to undergo surgical excision of the mass. We planned to cover the resulting loss of substance with a free omental flap and secondary skin grafting.

After large incision on the anteromedial portion of the right leg and thigh, dissection was conducted to identify pathologic tissues, exposing the articular capsule of the knee joint, which were subsequently