

pulmonary embolism, surgical treatment is recommended when aneurysm diameter >20 mm and turbulent flow on duplex ultrasound are found. Herein, we present a novel technique for the treatment of popliteal venous aneurysm with surgical resection and venoplasty with collagen matrix.

Methods: A 53-year-old man presented with popliteal aneurysm in association with chronic venous disease categorized as Clinical, Etiology, Anatomy, and Pathophysiology (CEAP) class C4 in his left limb. Duplex ultrasound showed a venous aneurysm of the left popliteal vein with a diameter of 30 mm and significant turbulent flow. Phlebography imaging confirmed the fusiform aneurysm in the popliteal fossa. No thrombus was shown with duplex ultrasound or phlebography. Tangential aneurysmectomy and lateral venorrhaphy were performed with subsequent circumferential placement of a collagen matrix. The patient was followed up with duplex ultrasound on postoperative days 15, 30, 60, and 90, and ascending phlebography was performed 3 months after surgery. During this period, anticoagulation and elastic compression therapy were indicated.

Results: Popliteal venous diameter correction was shown 3 months after surgery was performed. No complication occurred subsequently. Until 4 months after treatment, no recurrence was observed.

Conclusions: Surgery for popliteal venous aneurysm in addition to the placement of a collagen matrix seems to be an encouraging and promising treatment in the short term. More cases are required for a final long-term conclusion to be issued.

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AVF19



Migraine: A Common and Unknown Symptom of Pelvic Congestion Syndrome

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Objective: In 2007, Scholbach published a paper on the nutcracker phenomenon of the left renal vein (midline congestion syndrome) as a cause of migraine, headache, back and abdominal pain, and functional disorders of pelvic organs (Med Hypotheses 2007;68:1318-27); he described that patients with the nutcracker syndrome can present with migraine and exposed a possible mechanism. According to the International Association for the Study of Pain, the prevalence of migraine in adult women is about 13% to 18% of the population, and 2% suffer chronic migraine (15 or more days a month). If migraine occurs in the nutcracker phenomenon, it can occur in other forms of pelvic congestion syndrome (PCS).

Methods: From January 2015 to July 2019, we diagnosed 362 patients with PCS. As part of clinical exploration, we searched for the presence of migraine. If the answer was yes, we asked about the intensity, frequency, medical treatment, and results. We repeated the question 6 to 18 months after PCS treatment.

Results: Of the 362 patients with PCS, 123 (33.98%) presented with migraine as part of the syndrome. Their ages ranged from 26 to 74 years with an average of 49.3 years. The migraine was present for 2 to 5 years; 32 (26.02%) patients had mild migraine, and 91 (73.98%) suffered severe migraine (two or more episodes a week). Of these patients, 45 (almost half of severe migraines and 36.6% of all patients) suffered it daily. In all the patients, it appeared in every moment and did not have a relation with the menstrual period (inclusive; the age average is over the postmenopausal age). All had medical treatment with analgesics, nonsteroidal anti-inflammatory drugs, ergotamine, or sumatriptan that alleviated the acute symptoms, but the migraine episodes remained. Only in 93 patients were the PCS treatment and the minimal follow-up period of 6 months completed. The symptoms disappeared in 72 patients (77.42%); 9 presented with eventual and mild attacks easily controlled with mild analgesic (9.68%), and 12 remained with the same symptoms (12.9%). A positive response in the midterm was obtained in 87.1% of the patients against 0% with medical treatment.

Conclusions: In some unknown way, the PCS associated with venous outflow obstruction produces migraine as a symptom of the syndrome in 33.98% of patients (almost two to three times the prevalence in the general population). This symptom had a rapid and permanent response in the midterm to the correction of the PCS cause in 87.1% against the

well-known results of medical therapy that control only the acute symptoms.

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AVF20



Ultrasound Anatomy of Dermal and Subdermal Venous Plexus

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Objective: Anatomic studies have shown drainage of the dermal and subdermal venous plexus to the deeper system. Some authors, like Weiss, demonstrated the direct relationship between telangiectasia and reticular varicose veins with dermal-subdermal plexus venous reflux.

Methods: A high-frequency ultrasound transducer was used.

Results: With the advent of new technology, such as the high-frequency ultrasound transducer, it is possible to understand the anatomy of this complex area and to identify clearly the reflux sources and therefore the huge clinical implications that this entails. The use of this technology is one of the cornerstones of the present telangiectasia and reticular varicose vein treatment.

Conclusions: This communication shows the ultrasound anatomy and the drainage and mapping of the venous dermal and subdermal plexus.

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AVF21



Do Patients With Isolated Symptomatic Varicose Veins (C2 Disease) Improve After Truncal Ablation?

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Objective: Many insurance payers are hesitating to cover interventional treatments in patients with isolated symptomatic varicose veins (C2). In this study, we sought to determine the outcomes of patients with varicose veins (C2) who were treated with venous ablation alone or ablation plus phlebectomy using the Vascular Quality Initiative Varicose Vein Registry.

Methods: Using data from the Varicose Vein Registry between January 2015 and March 2019, we investigated immediate postoperative as well as long-term clinical and patient-reported outcomes among patients with documented C2 disease undergoing truncal endovenous ablations alone and combined ablation and phlebectomy. Preprocedural and postprocedural comparisons were performed using *t*-test, χ^2 test, or nonparametric tests when appropriate. Multivariable ordinal logistic regression was performed on ordinal outcome variables.

Results: We identified 3514 patients with C2 disease documented in the treated leg. The median follow-up was 45 days (interquartile range [IQR], 9-86 days). Median age was 54 years (IQR, 42-63 years), 76% were female (2657), and 82% were white; the median body mass index was 26.6 kg/m² (IQR, 23.5-30.9 kg/m²). Most patients had never undergone previous varicose treatment (37.4%). The median Venous Clinical Severity Score (VCSS) was 6 (IQR, 5-7); 43.5% of patients (1532) underwent isolated truncal ablation, and 56.5% (1989) underwent ablation and phlebectomy. Complications overall were low (6.8%) and varied between 6.3% and 7.0% in patients undergoing ablation alone and ablation plus phlebectomy (*P* = .47). The most common complication noted was paresthesia, 2.5% overall, which occurred more commonly after ablation and phlebectomy (3.3%) vs ablation alone (1.3%; *P* < .001); 84.3% of patients experienced an improvement in VCSS (median change in VCSS was 4 points [IQR, 2-5 points]), with an improvement of 3 points among patients undergoing ablation alone (IQR, 0-5 points) and 5 points among patients undergoing ablation and phlebectomy (IQR, 3-5 points; *P* < .001). In examining patient-reported outcomes, 91.7% of patients experienced