Phlebology

Phlebology
2014, Vol. 29(8) 540–542

DOI: 10.1177/0268355514545573
phl.sagepub.com

Summaries of Recent Phlebological Papers

LS Kabnick and J Almeida

Anomalous features of iliac vein stenosis that affect diagnosis and treatment

S Raju and M Davis

J Vasc Surg: Venous Lym Dis 2014;2:260–267

Venous lesions, particularly iliac vein stenoses, differ from their arterial counterparts in some crucial respects. This report expands on three such anomalous features that we have noted previously in anecdotal form: (1) a unique form of a long and diffuse stenosis (Rokitansky stenosis); (2) the invariable failure of plain old balloon angioplasty (POBA) to relieve iliac vein stenosis (both focal and diffuse); and (3) the stent compression by venous strictures, whether focal or diffuse, extrinsic to the stent. Although these features are somewhat interrelated from the concentric fibrous structure of iliac vein stenosis, they represent different phases in the overall management of iliac vein lesions. The analyses are derived from electronic medical records of 2534 iliac vein stent procedures performed from 1996 to 2013. Smaller subsets were used to record more detailed intravascular ultrasound planimetry data than were available in the generic database. The incidence of Rokitansky stenosis without focal lesions was 1.5%. After POBA, stenotic area increased from a median of 60 mm^2 to 62 mm^2, a miniscule improvement. Lumen area increased to a nearly "normal" 172 mm^2 after stent placement. In 103 limbs with residual or recurrent symptoms, in-stent restenosis (ISR) was present in all limbs; additional stent compression was evident in 25% of the limbs, adding to the overall severity of the stenosis. ISR responded well to high-pressure balloon dilation, with total clearance in 62% of treated limbs and substantial improvement in others. In contrast, stent compression was resistant, remaining unchanged in 68% after balloon dilation. The authors concluded that Rokitansky stenosis is easily missed unless routine planimetry is used. POBA as a primary treatment invariably fails to correct focal or diffuse iliac vein stenosis, and stenting is always required. Stent compression responds poorly to balloon dilation, whereas the associated ISR shows complete clearance in the majority of treated limbs.

Anatomic and functional outcomes of pharmacomechanical and catheter-directed thrombolysis of iliofemoral deep venous thrombosis

E Hager, T Yuo, E Avgerinos, A Naddaf, G Jeyabalan, L Marone and R Chaer

J Vasc Surg: Venous Lym Dis 2014;2:246–252

The purpose of this study was to examine the short- and long-term venous patency and venous valvular function as well as clinical outcomes of patients treated for iliofemoral deep venous thrombosis (DVT) by pharmacomechanical (PMT) and catheter-directed thrombolysis (CDT). A retrospective review of all patients with symptomatic DVT treated between 2006 and 2011 with PMT or CDT was performed. Patients were divided into two groups on the basis of initial treatment modality: patients treated by PMT alone (group 1), and those who underwent PMT and CDT or CDT alone (group 2). Post-procedural duplex ultrasound was used to assess valve function and treated vein patency rates. There were 79 patients with 102 limbs treated for extensive iliofemoral DVT (median age, 51.5 years; range, 16.6–83.8 years). A total of 102 limbs were analyzed, 24 in group 1 and 78 in group 2. Patients in group 1 had a shorter symptom duration compared with group 2 (7 days vs. 16 days; $p = .011$). The median number of procedures in group 1 was lower than in group 2 ($p < .001$). At last clinical follow-up, there was no significant difference between the Villalta and CEAP scores or the rate of clinical improvement in symptoms between groups. By Kaplan–Meier analysis, there was no difference in primary patency, secondary patency, and treated valve function at 48 months. The investigators concluded that PMT as a stand-alone therapy is as effective as CDT with or without PMT in preserving valve function and preventing post-thrombotic syndrome. Long-term physiologic and functional outcomes are comparable between the modalities, with preserved venous valve function in the majority of patients.

The incidence of contralateral iliac venous thrombosis after stenting across the iliocaval confluence in patients with acute or chronic venous outflow obstruction

XA Caliste, AL Clark, AJ Doyle, JP Cullen and DL Gillespie

J Vasc Surg: Venous Lym Dis 2014;2:253–259

These investigators examined the issue of jailing the contralateral iliac vein when projecting a Wallstent into the vena cava. The aim of this study was to assess whether this placement led to thrombosis of a normal contralateral common iliac vein. A retrospective review of prospectively collected data from 2008 to 2012 was collected by use of the American Venous Forum venous stent database variables. Stent patency rates and the incidence of contralateral iliac vein thrombosis were analyzed. In 65 patients (median age, 48 years; range, 15–80 years), 200 iliocaval stents were placed. Of these patients, 41 received ipsilateral stents that extended into the inferior vena cava (IVC) and completely across the contralateral common iliac vein orifice; 39 (95%) of these had venous outflow obstruction as a result of thrombotic disease. In 22 patients (54%), post-thrombotic disease involved the IVC. All patients had stents that extended into the IVC, crossing the normal contralateral iliac vein orifice completely. Most patients (97.5%) were maintained by full anticoagulation with warfarin or low-molecular-weight heparin. Four patients (9.7%) suffered new thrombosis of the non-stented contralateral iliofemoral vein; two patients had initial involvement of the IVC, and three were totally noncompliant with their postoperative anticoagulation. Thus, 2.4% of compliant patients had new contralateral thrombosis after stenting across a normal contralateral common iliac vein and into the vena caval wall. In this select patient population, univariate analysis of patient compliance with the postoperative anticoagulation strategy showed a strong correlation with postoperative contralateral iliofemoral venous thrombosis ($p = .0004$). From these data, it appears that stenting across the iliocaval confluence can be done safely in the majority of patients maintained with therapeutic anticoagulation. In post-thrombotic patients, however, stenting across the iliocaval confluence can result in a small number of new contralateral thromboses, more often if the patients are noncompliant with anticoagulation after stenting.

Classification of anatomic involvement of the iliocaval venous outflow tract and its relationship to outcomes after iliocaval venous stenting

J Crowner, W Marston, J Almeida, R McLafferty and M Passman

J Vasc Surg: Venous Lym Dis 2014;2:241–245

The purpose of this study was to propose an anatomic classification for iliocaval venous obstruction (ICVO) based on patterns of venous obstruction and to correlate severity to clinically relevant outcomes. A multi-institutional retrospective evaluation of patients with ICVO who underwent venous stenting procedures was performed to identify anatomic patterns of iliocaval obstruction. The sites of venous disease were categorized on the basis of computed tomography or magnetic resonance venography supplemented by contrast venography or intravascular ultrasound. Proposed anatomic classification was defined as follows: type I, stenosis of a single venous segment; type II, stenosis of multiple venous segments; type III, occlusion of a single venous segment; and type IV, occlusion of multiple venous segments. Anatomic segments included in the classification scheme were defined as inferior vena cava, common iliac vein, external iliac vein, and common femoral normal iliocaval outflow. Outcomes, including initial procedural success and rethrombosis rates within six months, were determined for each type of ICVO. A consecutive 120 patients with ICVO underwent venography and attempted intervention. The type of ICVO was well distributed across all categories, with type I involvement identified in 42.5% of cases, type II in 19.2%, type III in 13.3%, and type IV in 25%. Procedural success was achieved significantly more often in types I and II ICVO ($p = .02$). Stent reocclusion was more frequent in type IV (26.7%) than in type I (7.8%) or type II (4.3%) ($p = .009$). On the basis of a proposed anatomic classification, the diversity of ICVO may be stratified according to the severity of venous involvement. The anatomic classification was found to correlate to the technical success and short-term patency of venous intervention.

Role of endovenous laser therapy in large and very large diameter great saphenous veins

C Florescu, G Curry and T Buckenham

ANZ J Surg 2014 May. Epub ahead of print, doi: 10.1111/ans.12672

A retrospective one-year review of 38 GSV EVLT ablations was done and grouped amongst those patients with diameter size >1 cm (20) and 2 cm (4). All underwent a

six-week post-procedural duplex with 100% successful closure. GSV median length was 21.5 cm. The LEED was approximately 80. Approximate tumescent volume was 3.7 mL/cm and 4.6 mL/cm for >1 and >2, respectively. The authors conclude that size does not matter in ablation rates when performing EVLT.

Round ligament varicosities: a rare cause of groin swelling in pregnancy

AV Polat, R Aydin, AK Polat, IS Kececi, G Karahan and GO Taskin

Abdom Imaging 2013;38:1178–1181

The natural history of round ligament varicosities (RLVs) was studied and deemed to only occur in pregnancy. The differential including inguinal hernia is important; however, the RLV swelling tends to disappear after delivery and the diagnosis can be made by duplex ultrasound.

Risk marker associations with venous thrombotic events: a cross-sectional analysis

BA Golomb, VT Chan, JO Denenberg, S Koperski and MH Criqui

BMJ Open 2014;4:e003208. doi: 10.1136/bmjopen-2013-003208

A total of 2404 men and women aged 40–79 years from four ethnic groups: non-Hispanic White, Hispanic, African-American and Asian were studied from University of California at San Diego employees and relations. Outcome measures included superficial venous thrombosis (SVT), deep venous thrombosis (DVT), pulmonary embolism (PE) and combined deep venous events (DVE) comprising DVT and PE. Using multivariable analysis, significant correlates were identified for SVT: female sex, ethnicity (African-American = protective), lower educational attainment, immobility and family history of varicose veins. For DVT and DVE, significant correlates included: heavy smoking, immobility and family history of DVEs (borderline for DVE). For PE, significant predictors included immobility and, in contrast to DVT, blood pressure (BP, systolic or diastolic). In women, estrogen use duration for hormone replacement therapy, in all and among estrogen users, predicted PE and DVE, respectively. The authors substantiate the already known risk factors. However, among these risk factors is an association of PE, but not DVT, to elevated BP. The authors postulate that PE may serve as cause rather than consequence. In addition, the authors state that oxidative stress and cell energy compromise are proposed to explain and predict many risk factors, operating through cell-death mediated triggering of coagulation activation.

Recurrent orbital varices after surgical excision with and without prior embolization with *n*-butyl cyanoacrylate

A Mokhtarzadeh, JA Garrity and HJ Cloft

Am J Ophthalmol 2014;157:447–450.e1. doi: 10.1016/j.ajo.2013.10.011

The authors studied the natural history of patients (4) who had periorbital vein treatment – two treated with embolization and two via craniotomy – who had recurrence. Each had initial complete resolution of their symptoms followed by recurrence to a lesser degree. The authors concluded that orbital varices may be recurrent, even after *n*-butyl cyanoacrylate embolization, with repeated Valsalva-type maneuvers.