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J Vasc Surg. 2006;44(3): 572-9.

Abstract and Commentary by:
Elna M. Masuda, MD Honolulu Hawaii

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§ Immediate and Midterm Complications of Sclerotherapy: Report of a Prospective Multicenter Registry of 12,173 Sclerotherapy Sessions

Guex JJ, Allaert FA, Gillet JL, Chleir F.
Dermatol Surg. 2005;31:123-8.

Abstract and Commentary by:
Corradino Campisi, MD, Genova, Italy

Abstract

Growing interest in sclerotherapy has emphasized the need for complete knowledge of all aspects of this method. This study was done to precisely delineate the actual incidence of immediate and delayed untoward events of daily sclerotherapy. To accomplish this, a multicenter prospective registry was established in 22 phlebology clinics to record their activity and complications.

During the study period, 12,173 sessions of sclerotherapy were carried out, 5,434 with liquid, 6,395 with foam, and 344 using both. There were 4,088 (33.9%) sessions carried out with ultrasound guidance. Forty-nine adverse events (0.4%) occurred, of which 12 were with liquid and 37 with foam. These were reported during the time of the study and an additional one-month follow-up. The most numerous were 20 cases of visual disturbances. In 19 of these, foam or air block was used. All resolved promptly without any after-effects. A femoral vein thrombosis was the only serious adverse event in this study.

Commentary

The problem of varicose veins affects 10% to 20% of adult men and 25% to 33% of adult women and can lead to complications that result in lost time from work and lost wages. Treatment has improved with the use of minimally invasive techniques that reduce recovery time and complications and offer better long-term results.

Innovative endovascular procedures have been implemented over the last five years: endovenous radiofrequency obliteration, endovenous laser treatment and ultrasound-guided sclerotherapy with foam. Evidence-based prospective trials with large numbers

of participants comparing the interventional procedures with high ligation and stripping are still absent.

With regard to sclerotherapy, clinical series reports indicate that 80% to 90% of saphenous trunks remain occluded after three years when treated by foam sclerotherapy. Complications are seldom encountered but significant skin discoloration and a smouldering superficial thrombophlebitis are common. Temporary vision changes have occurred, as mentioned above after both foam and liquid sclerotherapy treatment, but these are always transient.

Finally, it is important to mention that various studies have proven the presence of a more or less significant lymphatic impairment in patients with chronic venous insufficiency. A proper diagnostic assessment of these mixed pathologies is indispensable to choosing the best therapy in order to avoid worsening the lymphatic drainage which could lead to edema after the treatment of the venous pathology. ♦

§ Review: Isolated Muscular Calf Vein Thrombosis

JL Gillet, M.D., Bourgoin, France

Although muscular calf vein thrombosis (MCVT) is commonly seen in everyday practice, few publications address this subject and no treatment guidelines are available.

Labropoulos¹ identified 113 (15%) isolated MCVT in a series of 742 deep vein thrombosis (DVT) limbs in which there were 282 isolated calf DVT. O'Shauhnessy² and Krunes³ estimated the prevalence of isolated MCVT respectively at 16 and 25% of all DVT.

Although the natural history is poorly known, the risk of thrombus extension and/or pulmonary embolism (PE) must be taken into account.

MacDonald⁴ followed 219 isolated MCVT in 185 patients without anticoagulation therapy (Ag). One hundred thirty-five limbs were studied for three months ; in 16.3% of cases the thrombus extended to the adjacent crural vein or higher and in 3% propagated to the popliteal vein. The great majority (91%) of thrombus extensions occurred within two weeks of the initial diagnosis. Unfortunately, this study had a 35.1% failure rate for follow-up at 3 months and 22 patients died during the study. Schwarz⁵ conducted a prospective non randomized study including 84 MCVT. He investigated the outcome in two cohorts of consecutive patients. The first received heparin for 10 days at therapeutic doses with compression therapy and the second received compression therapy alone. In patients on therapeutic

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heparin (n=52) no progression to deep vein thrombosis occurred. Patients without anticoagulation (n=32) showed a higher rate of progression (25%), which was statistically significant.

Several publications have reported PE in patients with MCVT. In a recent work (submitted for publication) we evaluated short and mid-term evolution of 131 isolated symptomatic MCVTs (in 128 patients) treated with Ag for one month, or three months if risk factors for venous thromboembolism (VTE) were present. Patients have been followed at 1, 3 and 9 months and up to the 36th month. Seventy-three (55.7%) thrombosis of medial gastrocnemius veins and 58 (44.3%) thrombosis of soleal veins have been enrolled. Nine PEs (6.9%) were clinically suspected and confirmed with X-Rays. These complicated the MCVT and were present at the initial examination. Two non lethal hemorrhagic events were observed. Three patients died during the follow-up, but long after the end of the Ag therapy. We observed no thromboembolic events at three-month follow-up but there was superficial venous thrombophlebitis. Six non lethal

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PEs and 23 deep or muscular venous thrombosis occurred in 24 patients (19%) during the follow-up (average : 26.7 months) with comparable figures in both thrombosis groups.

Management of MCVT remains controversial. Our data and those of the literature show that MCTV is not a benign disease ; PE is not exceptional at the time of diagnosis and thrombus extension can occur in the absence of Ag. Thromboembolic recurrence is not rare. The last ACCP Conference on Antithrombotic and Thrombolytic Therapy⁶ recommends long-term Ag for patients with thrombosis confined to the calf deep veins, but does not distinguish isolated MCVT. In the absence of VTE risk factor, a short duration (15-30 days) Ag could be a suggestion but must be validated by additional studies.

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§ Comparison of New Continuous Measurements of Ambulatory Venous Pressure (AVP) with Conventional Tiptoe Exercise Ambulatory AVP in Relation to the CEAP Clinical Classification of Chronic Venous Disease

Eifell RK, Ashour HY, Lees TA. *J Vasc Surg.* 2006 Oct;44(4):794-802.

Abstract and Commentary by:
Nicos Labropoulos, M.D.
Newark, New Jersey

Abstract

This study was designed to compare conventional AVP measurement with continuous ambulatory venous pressure monitoring (CAVPM) in patients with primary venous reflux. Fifteen healthy volunteers and 49 patients with chronic venous disease (CVD) were included in the study. CEAP classes 2 and 3 had 22 patients, class 4 had 20 and classes 5 and 6 had 12. AVP and 90% refilling time (RT 90) were compared with the new CAVP variables of mean walking pressure (MWP) and percentage fall in walking pressure (%FWP). The measurements for CAVP were performed during continuous walking on treadmill at increasing speeds from 0.5 to 3mph at 3 minutes intervals. Reflux in the superficial veins was most prevalent in all the classes where deep vein reflux was seen in 4 limbs in class 4 and in 3 limbs in classes 5 and 6.

It was shown that MWP and %FWP were more closely associated with the clinical severity of CVD compared to AVP. Also the RT 90 and MWP had a high positive predictive value (PPV) for classifying limbs in relation to the clinical severity by the CEAP class whereas RT90 and %FWP had the best PPV for classifying the limbs in relation to the anatomic reflux sites.

Commentary

This study was well conducted. The selection of patients was good as the group was homogeneous having only primary reflux and all other patients with thrombosis, systemic conditions or impairment of the lower extremity were excluded. The sample size was adequate having a good number of patients in every group to allow meaningful comparisons. This paper also confirms data from previous reports on a good association between venous pressure measurements and clinical severity of the disease.^{1,2,3} It is also in agreement with a previous work showing that in patients with no history of deep vein thrombosis and intact muscle pump the venous hemodynamic changes correlate well with the clinical severity of the disease and this is due to the increased reflux, as the ejecting ability of the calf muscle pump and the venous outflow are normal.⁴ It was interesting to see that walking at different speeds on treadmill did not have any significant impact in separating the different groups of patients using the MWP. The difference was clear and similar among all groups at any given walking speed. It has been shown that the different types of exercise such as knee bends, tiptoes, calf

compression and dorsiflexion can have variations. The CAVMP allows for a more physiologic evaluation of patients with CVD, which is more reproducible as the rate of muscle contraction is regulated by the walking speed on the treadmill. Because of its invasiveness it is difficult to be performed routinely. However, it will be a good test to evaluate the effects of different types of treatment when used serially in longitudinal studies. The pressure measurements in the GSV at the ankle seem to reflect the overall hemodynamic changes in the limb but do not represent the pressures in the different compartments.⁵ These data are applicable only to patients with primary reflux and should not be applied to patients with post-thrombotic disease or calf muscle pump impairment. This also was not the intent of the authors.

In future studies such patients should be evaluated with CAVMP and more importantly when clinical outcomes are being studied.

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§ External Venous Valve Plasty (EVVP) in Patients with Primary Chronic Venous Insufficiency (PCVI)

Rosales A, Slagsvod CE, Kroese AJ, Stranden E, Risum O, Jorgensen JJ

Eur J Vasc Endovasc Surg. 2006;32:570-6.

Abstract and Commentary by:
Michel Perrin, M.D., Lyon, France

Abstract

The aim of this study was to evaluate the competence of the external venous valve plasty (EVVP) and its effect in symptom relief, ulcer healing and ulcer-free period in C4-C6 patients. 17 patients (median age 52, M:11, F:6) graded C4=6, C5=4, and C6=7, Ep were treated by transmural valve plasty. Five

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patients had a single plasty and the other either multistation plasty (n 12) or multilevel plasty (n 10). Preoperatively all patients were investigated by color duplex ultrasound (CDU), ambulatory venous pressure (AVP) and descending video venography. All patients worn before EVVP a compression stockings class 2 for six months and those presenting a concomitant superficial or/and perforator insufficiency were treated first by conventional surgery. The clinical and hemodynamic endpoints were ulcer or symptom recurrence, reflux or abnormal AVP. The healing ulcer rate was 4/7 (57%) within three months. All C4 patients experienced symptom improvement and had a median recurrence free period of 72 (range 60-120 months). The C5 had a median ulcer-free period of 61 months (12-72) and the C6 of median 48 (12-72). Multi-level repairs and multiple valve plasty reached a better median competence than single valve plasty, respectively 54, 72 and 48 months.

Commentary

Basically speaking direct valve repair can be listed in two groups internal and external and various techniques have been reported, in the first group by Kistner, Raju, Sottiurai and Tripathi and in the second by Belcaro, Kistner, Raju and Sottiurai. Report on the outcome after valve plasty in the English literature brings together

about 500 legs, consequently every new report have to be analyzed as the effectiveness of this surgery remains debated.

First of all it must be noted that very few patients were selected for EVVP in this Norwegian centre of vascular surgery and only after failure of conservative or traditional surgery. One of the main criticism addressed to this deep venous reconstructive surgery is the absence of randomized con-

muscle pump. In our experience this status contraindicate any kind of deep reconstructive surgery for reflux


Considering their results they recommend external valve repair, but if you look carefully at the published literature most authors recommend internal valve plasty (Kistner, Perrin, Sottiurai, Tripathi) and the results provided by this technique are better. Raju is in the side of external valve plasty, but he used a different technique namely transcommisural valve plasty.

In conclusion deep valve plasty must be considered in active patients presenting a primary severe chronic insufficiency with extended deep axial reflux and not improved by traditional treatment. ♦

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trol study, but in the entire valve plasty series reported all patients were failure of conservative or superficial/perforator surgery. Secondly the series is small but no patient was lost to follow-up providing precise results for each CEAP class and one interesting point is that some C4b patients were operated on and none of them developed an ulcer.

I have only two remarks concerning this outstanding report

The rate of non-healing ulcer was relatively high (43 %) and the author suggested that it might be attributable to a deficient calf-

§ Chronic Venous Leg Ulcers Benefit from Surgery: Long-Term Results from 173 Legs Obermayer A, Gostl K, Walli G, Benesch T.

J Vasc Surg. 2006;44(3):572-9.

Abstract and Commentary by: Elna M. Masuda, M.D., Honolulu Hawaii.

Abstract

This paper is a retrospective review of data collected over seven years examining the outcomes of treating large ulcers in 173 patients. The median size of the ulcers was 12 cm² with

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the largest ulcer reported as 500 cm². Although the title of the paper implies these were purely "venous" ulcers, it turns out that 17% had concomitant arterial insufficiency or "mixed disease" and were treated at the operation like a venous ulcer. The surgical procedures were performed to eliminate superficial reflux and

Kaplan-Meier analysis of ulcer recurrence, the 5-year ulcer recurrence rate was 4.6%, and the mean time of recurrence was 70.4 months.

Commentary

The authors concluded that surgical treatment of venous leg ulcers should be offered at any stage. They go on to state that surgery is indicated before an ulcer is "intractable", but do not define what an intractable ulcer is, and how one would identify the intractable ulcer and avoid surgery on these.

ing. They tried to explain that PAD did not affect ulcer healing or recurrence. However, when one looks at the type of patients treated, 13% had tendons, bones and joints involved, leading one to suspect a cause other than venous was involved (possibly traumatic, neuropathic, ischemic or a combination).

In summary, this paper showed a very impressive ulcer healing and low recurrence rate when surgery and compression therapy was applied to a group of leg ulcers with primarily venous insufficiency.

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perforators, and if needed, local procedure targeting the ulcer. Deep venous valve reconstruction was not performed, even in the presence of deep venous reflux. The surgeries consisted of ligation and stripping of the great saphenous vein, small saphenous vein, and/or interruption of perforators alone, and depending on the severity of the tissue sclerosis, a procedure of either debridement with or without skin grafting. After surgery, all patients except for the 30 legs with arterial disease, were treated with compression bandaging. The follow-up ranged from three months to seven years, with a median of 3.1 years.

The initial ulcer healing rate was 87%. Thirteen percent never healed and recurrent venous ulcers occurred in 5%. Based on

I would agree with the authors that based on their results, surgery of the venous system can be appropriately performed in the face of superficial reflux and perforator disease, and is associated with a high ulcer correction rate when combined with compression therapy. The authors should be commended for their excellent results at 5 years, with a recurrence rate of only 5%.

Unfortunately, the authors did not describe the length of compression therapy that was provided to the patients after surgery, and therefore, the long-term success may have been due to external compression. Furthermore, by adding a group of patients with arterial insufficiency and treating the venous component, makes interpretation of the data confus-

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