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# Review and commentary of key non-JVS-VL articles

## The efficacy of rotational pharmaco-mechanical thrombectomy in patients with acute iliofemoral deep vein thrombosis: is the standard treatment of deep vein thrombosis changing?

Rodoplu O, Yildiz C, Oztas D, Beyaz M, Ulukan M, Unal O, et al. Phlebology 2021;36:119-26.

**Key Finding:** Pharmacomecanical thrombectomy with the Cleaner thrombectomy device (Argon Medical Devices, Frisco, Tex) was safe and beneficial in the treatment of acute iliofemoral deep vein thrombosis (DVT).

**Study Summary:** This study retrospectively evaluated 75 patients with acute DVT involving the iliofemoral segment who underwent pharmaco-mechanical thrombectomy with the Cleaner thrombectomy device (Argon Medical Devices). Approximately 91% had complete thrombus resolution, and >90% could be treated in a single session. Short-term improvement occurred in post-thrombotic syndrome assessed via Villalta scores; however, the scores worsened over time.

**Commentary:** This study seems to be of another "me too" mechanical thrombectomy device that removes acute soft thrombus efficiently using a strong rotating wire that macerates the thrombus, delivers thrombolytic agents, and, basically, scrapes thrombus from the venous endothelium. The advertisements for the device state that is effective with adherent thrombus but with a reduction in the risk of endothelial damage. What data are available to support this statement, which seems to have been a common one made by the manufacturers of various thrombectomy devices during the past almost 20 years? We know that post-thrombotic syndrome can appear anywhere from 6 months to 20 years after an acute DVT. How long do the investigators plan to monitor this small group of patients? Perhaps this device is efficacious in cleaning out synthetic dialysis grafts or lower extremity bypass conduits. However, it is difficult to imagine a "powerful" wire whipping around in a delicate vein already damaged by thrombus. I am concerned additional recurrent DVTs could develop once anticoagulation therapy has been discontinued owing to the increased endothelial damage. Of course, I also have no data to support this statement.

## The analysis of selected morphological and hemodynamic parameters of the venous system and their presumable impact on the risk of recurrence after varicose vein treatment

Szary C, Wilczko J, Plucinska D, Pachuta A, Napierala M, Bodziony A, et al. J Clin Med 2021;10:455.

**Key Finding:** Treatment of lower extremity venous disease focusing on saphenous vein reflux can result in higher than expected recurrence rates signifying the need for a change in strategy.

**Study Summary:** This was a retrospective review of 535 women with venous disease, 183 (34%) after therapy and 352 (66%) before treatment. The therapeutic modalities included thermal ablation, stripping, ligation, and sclerotherapy. A variety of imaging modalities were used, including ultrasound, computed tomography, and/or magnetic resonance venography. Advanced venous disease was seen in patients who had already received treatment and had developed recurrence. However, no difference was found in the rates of symptoms consistent with pelvic venous congestion.

**Commentary:** This is an interesting study of an all-female cohort and recurrent venous disease. Rather than labeling the recurrences as treatment failures, they discussed the need for further investigation into the origin of the disease. Similar to educational seminars in which I have heard Dr Mark Meissner and others discuss eliminating the highest point of reflux, perhaps we do need to investigate further in women. Not all disease is the same. Pregnancy-induced venous volume expansion can result in subsequent insufficiency of the great saphenous vein, in addition to labial, vaginal, and vulvar varicosities. Abdominal and pelvic venous reflux should be assessed when evaluating women with chronic venous insufficiency. We owe it to our patients to "rule out" pelvic venous reflux from the start rather than waiting for a recurrence.

## Randomized controlled trial of compression after endovenous thermal ablation of varicose veins (COMETA trial)

Bootun R, Belramman A, Bolton-Saghdaoui L, Lane T, Riga C, Davies A. Ann Surg 2021;273:232-9.

**Key Finding:** Patients undergoing endovenous thermal ablation for great or small saphenous vein reflux with concomitant phlebectomy who wore compression hose had lower pain scores in the first postoperative week.

**Study Summary:** The 206 patients in this prospective study were randomized to 1 week of stockings vs no stockings. One half of the patients were women, and the average age was ~50 years. C2-C3 disease was present in 71% and C4-C5 disease in 29%. Pain and clinical scores were assessed at 2 weeks and 6 months after ablation. Patients who had undergone ablation plus phlebectomy and who had also worn compression stockings had better pain scores at 1 week. However, the differences were not statistically significant at 6 months. No differences were found in the ecchymosis rates, venous occlusion rates, interval to a return to usual activities, or quality of life scores between the two groups.

**Commentary:** Interesting that compression stocking did not show a difference in patients who had undergone ablation alone. They did show a benefit as an adjunct for pain control for those who had undergone phlebectomy in the same setting. This finding is consistent with the 2019 American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology guidelines, which recommend the use of compression after thermal ablation (grade 2C, weak recommendation, low-quality or very-low-quality evidence) but for an unspecified duration. In this study, most patients had stopped wearing their stockings (section titled "Compliance") after 7 days. Perhaps most of the pain and discomfort had resolved within this period and the added discomfort from the stockings was prevalent. I have found that patients appreciate the support of compression stockings after ablation and phlebectomy compared with elastic bandages (ACE wraps; 3M Co, Saint Paul, Minn), which can bunch or slide, causing an almost tourniquet-like effect. However, a patient could experience difficulty in donning stockings over fresh phlebectomy incisions, depending on the extent of the procedure.

## Management and outcomes of patients with isolated superficial vein thrombosis under real life conditions (INSIGHTS-SVT)

Bauersachs R, Gerlach HE, Heinken A, Hoffmann U, Langer F, Noppeney T, et al. Eur J Vasc Endovasc Surg 2021;62:241-9.

**Key Finding:** Although 30% of the patients had received anticoagulation therapy for isolated superficial vein thrombosis (SVT), the risk of recurrent or extension of the SVT was increased.

**Study Summary:** In a retrospective cohort study of 1159 patients with SVT, the patients were followed up for 1 year. The INSIGHTS-SVT study (investigating significant health trends in the management of superficial vein thrombosis) was an observational study that collected data on patient characteristics, diagnosis, management, and outcomes of isolated SVT in Germany under real life conditions. The most common risk factors were varicose veins (75.6%) and chronic venous insufficiency or ulcer (48.3%). Greater than 03% of patients had received anticoagulation therapy of some sort. Other treatments included compression for 77%, cooling for 36.8%, and surgery for 1.9%. A total of 67 patients (5.8%) experienced the combined primary outcome measure of deep vein thrombosis, pulmonary embolism, or recurrent or extended SVT. The bleeding rates were low.

**Commentary:** Well, little changes my mind so drastically as, perhaps, the recent studies and updated guidelines that counter past perceptions that SVT is not the benign entity it was once considered. Patients with

SVT represent a myriad of demographics, risk profiles, presentations, and outcomes. In this study, almost all persons with SVT had received anticoagulation therapy. However, the rate of recurrent SVT or extension of the SVT and the occurrence of the primary outcome (complications of SVT) were still high. Did this cohort represent an inclusion bias of only higher risk patients, with lower risk patients treated with traditional conservative measures that do not involve anticoagulation? Patients with cancer are known to have an acquired hypercoagulable state yet were included in this cohort, although they do reflect "real world" experience. The American College of Chest Physicians 2011 clinical practice guidelines on antithrombotic therapy for venous thromboembolism disease (9th ed) state that anticoagulation should be considered for all patients with SVT of the great and small saphenous veins. The recommendation specifically states the following: "for extensive superficial vein thrombosis, we suggest prophylactic-dose fondaparinux or LMWH [low-molecular-weight heparin] over no anticoagulation (grade 2B) and suggest fondaparinux over LMWH (grade 2C)." I believe my practice will be more individualized and aggressive when necessary for patients with SVT.