

Comments: This study is worth a read and paying attention to small refluxing superficial veins. These authors point out that physicians need not only to look at the larger truncal veins but also to pay attention to the contribution of the smaller (<4 mm) diameter superficial veins and their contribution to more severe venous disease.

Excellence in ultrasound screening for deep venous thrombosis

The Prevalence of Chronic Deep Venous Thrombosis in Trauma: Implications for Hospitals and Patients



Cannon KA, Badiie J, Wallace J, Brill JB, Sise MJ, Bansal V, et al. *J Trauma Acute Care Surg* 2018;84:170-4.

Conclusions: Up to 30% of deep venous thrombosis (DVT) found in trauma patients can be classified as chronic in nature. This has financial as well as risk and prophylactic implications for health care systems, clinicians, and patients.

Summary: This is a single-center retrospective review of 10 years of trauma patients with a >48-hour hospital stay that triggers lower extremity duplex ultrasound screening for DVT. Patients with DVT on initial lower extremity duplex ultrasound examination underwent review of the images to assess clot chronicity by standard imaging criteria. Chronic DVT was found in 30% of patients who were older and less severely injured than those with acute DVT; however, only 40% reported a history of DVT. This cohort had 9% incidence of thrombus progression and a 14% rate of new DVT formation.

Comments: At high-volume trauma centers, a screening ultrasound examination of every admission during 48 hours would be labor intensive. However, the authors make many good points, especially in use of the distinguishing criteria between acute and chronic clot so that patients can be treated and appropriately counseled. Furthermore, hospitals then are not penalized for old, nonpreventable DVT that the patients themselves did not know about or report.

The implications of a long life expectancy in the catheter-directed thrombolysis decision-making tree

Results of Catheter-Directed Thrombolysis for Acute Iliofemoral Deep Venous Thrombosis—A Retrospective Cohort Study



Madsen CP, Gesla J, Vijdea RL, Serifi MA, Christensen JK, Houliind K. *JRSM Cardiovasc Dis* 2018;7:2048004018766801.

Conclusions: The efficacy of catheter-directed thrombolysis (CDT) in a small, retrospectively reviewed cohort of very young Danish patients demonstrated excellent results at 1-year follow-up, with a small percentage of patients developing post-thrombotic syndrome (PTS).

Summary: This is an observational and retrospective review of 48 patients, average age of 28 years, with iliofemoral deep venous thrombosis who underwent CDT. In this cohort, 75% were women. There was complete thrombus lysis in 43 cases and partial lysis in 2 cases; 26 stents were placed in culprit iliac venous lesions. There were no major bleeding complications and no deaths. At 1-year follow-up, 7 of 32 patients did not have evidence of PTS.

Comments: This is an usually young group of patients treated with CDT, and the study thus far has only 1 year of follow-up. Many studies have demonstrated that CDT is effective in removing thrombus, but the main question is the prevention of the long-term sequelae of PTS. The patients in this study are a selected group of young persons with potentially another 50+ years to live. The authors raise provocative questions about quality of life, longevity, and the use of CDT as a preventive measure for a possibly chronic disease.

The new frontier: Artificial intelligence and varicose veins

Clinical and Genetic Determinants of Varicose Veins: Prospective, Community-Based Study of ≈500000 Individuals



Fukaya E, Flores AM, Lindholm D, Gustafsson S, Zanetti D, Ingelsson E, et al. *Circulation* 2018 Sep 24. [Epub ahead of print]

Conclusions: This enormous epidemiologic study of almost a half-million people in the UK data repository yielded clues into the genetic biology related to varicose veins. Several genes were found that may be implicated as translational research targets.

Summary: This study used machine learning to comb through the UK Biobank, which is both a long-term study and a genetic repository that includes genomic data of almost 500,000 persons, approximately 10,000 of whom had venous disease. The results confirmed many known associations, such as age, sex, pregnancy, and history of deep

venous thrombosis, but height emerged as a risk factor and remained as an independent variable after adjustment and Mendelian randomization analysis, thus confirming height as both serving as a predictor and having a causal role in varicose vein development.

Comments: Artificial intelligence, really what machine learning involves, is the next frontier for medical discovery. Harnessing the power of computers to search rapidly for genetic associations using robust specimen repositories will, it is hoped, fast track the research process, increasing understanding of disease pathophysiology and targeting future improvements in the management of varicose veins.