Serial 2-Point Ultrasonography Plus D-Dimer vs. Whole-Leg Color-Coded Doppler Ultrasonography for Diagnosing Suspected Symptomatic Deep Vein Thrombosis: A Randomized Controlled Trial

Reference:
Bernardi, E et all (2008). Serial 2-Point Ultrasonography Plus D-Dimer vs. Whole-Leg Color-Coded Doppler Ultrasonography for Diagnosing Suspected Symptomatic Deep Vein Thrombosis: A Randomized Controlled Trial. *Journal of the American Medical Association.* Vol 300, No. 14, 1653 – 1659.

Scientific Literature Review

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Podiatry Relevance:
Podiatric surgery in many cases requires a period of LE immobilization and NWB, at times leading to DVT. Suspected DVT is usually evaluated by 2 - point ultrasonography or by whole leg ultrasonagraphy (US). The latter method is generally considered superior. The whole leg method requires state-of-the-art equipment and experienced operators, accessing which may cause a delay in evaluation and necessary anticoagulation. The 2 – point US method with D-Dimer test is more readily available, can be done more quickly and is less expensive. The purpose of this study is to assess if two differing diagnostic methods are equivalent in the diagnosis of suspected DVT.

Methods:
A prospective, randomized, multicenter study was done including 2098 patients with a first episode of suspected DVT. The groups were randomized to include 1045 in the 2 – point US method with D-Dimer and 1053 in the whole leg method. Patient age for both groups was at an average of 62 - 63 (+/- 16) years old, and sex was split in both groups to 60 % male vs. 40 % female. Exclusion criteria included pregnancy, age under 18 years, history of VTE, suspected PE, ongoing anticoagulation and short life expectancy. Patients with normal findings were followed for 3 months. Patients with abnormal findings were treated accordingly and excluded from results.

Results:
Symptomatic venous thromboembolism occurred in 7 of 801 (0.9%) patients found to have normal findings with the 2 – point US method with D-Dimer vs. 9 of 763 (1.2 %) patients with normal whole leg evaluation findings. The observed difference between the 2 groups (0.3 %) was deemed equivalent.

Conclusion:
The difference between these two methods is primarily availability. The whole leg method is beneficial, in that one normal examination is enough to r/o DVT. However access to this type of exam may be limited and treatment delays may have serious consequences. The 2-point US method with D-Dimer allows for a more expedient examination of suspected DVT which can be done using a traditional US machine. However, in the presence of initial normal findings, a follow-up examination is recommended within one (1) week.