Repeated venous duplex ultrasound examination when the initial study is incomplete

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What do you do when you order a venous duplex ultrasound study to determine whether your patient has a deep venous thrombosis and the examination is incomplete? Do you assume that because most of the examination findings were negative that the study probably was overall negative? Alternatively, do you insist that the study be repeated? If the latter, when do you order the new study, immediately or some days later? Is there anything else that you can request to achieve a final valid diagnosis?

This is not an unusual clinical dilemma. Patients may be uncooperative, have legs covered by bandages, or have deformities or obesity, making a complete venous duplex ultrasound examination impossible.

This article establishes that one should not assume negative results because repeated studies have the same positive incidence as initially complete studies.[1] Therefore, studies should be performed as soon as the reason for the incomplete examination can be avoided. This is the take home message from a group whose experience with duplex ultrasound evaluation of the vascular system is exemplary. However, perhaps their experience and reliance on duplex ultrasound technology may not translate to all institutions. After all, how many hospitals have just one physician read >90% of all venous scans? More remarkably, this was done within just a few hours of the tests being completed, even in the wee hours of the night. Furthermore, it appears that this hospital, unlike most, does not use D-dimer level as a screening test to decrease the number of unnecessary venous studies, even after hours; nor do their physicians use the D-dimer test to help determine which incomplete study should be repeated. When challenged during the review process, the authors suggested that the D-dimer test is too nonspecific, making it unreliable. I applaud their conclusions and agree that the D-dimer test is usually not appropriate for use in hospitalized patients. However, our technologists would revolt if they had to perform the many unnecessary tests ordered by neophyte interns or litigation-averse emergency department physicians. For these technologists, the D-dimer test has been a quality of life saver. Furthermore, we have found that the D-dimer level combined with the Wells score is helpful in determining which patient should undergo a repeated venous duplex ultrasound examination after an initial incomplete study. Perhaps the reading physician referred to in this article can do a quick study to assess the relevance of D-dimer levels in incomplete studies? If I am correct that the D-dimer test will help, the reading physician and technologists may finally get some well-deserved, uninterrupted sleep.

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