dissection of a secondary branch 20 months after the initial event.

To the best of our knowledge, this is the first study reporting a large series of patients with SCAD with a noninvasive angiographic follow-up. This technique appears to be an excellent follow-up technique, free of complications, and allows confirmation of vessel wall healing among most of the patients, but especially those that did not receive PCI. Moreover, patients without signs of dissection in the CTA performed at 3 to 6 months after the SCAD episode had excellent prognosis at long-term follow-up. Invasive coronary angiography of patients with SCAD is risky because the injection of contrast at high flow can make the possible persistent intimal flap progress. CTA is a noninvasive technique that can be of great usefulness in assessing the patency of coronary vessels at follow-up.

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REFERENCES

1. Vrints CJ. Spontaneous coronary artery dissection. Heart 2010;96:801–8.

2. Alfonso F, Paulo M, Lennie V, et al. Spontaneous coronary artery dissection: long-term follow-up of a large series of patients prospectively managed with a "conservative" therapeutic strategy. J Am Coll Cardiol Intv 2012;5:1062–70.

3. Saw J. Coronary angiogram classification of spontaneous coronary artery dissection. Catheter Cardiovasc Interv 2014;84:1115–22.

4. Roura G, Gomez-Lara J, Ferreiro JL, et al. Multislice CT for assessing in-stent dimensions after left main coronary artery stenting: a comparison with three dimensional intravascular ultrasound. Heart 2013;99:1106–12.

Detection of Deep Venous Thrombosis Using a Pocket-Size Ultrasound Examination Device

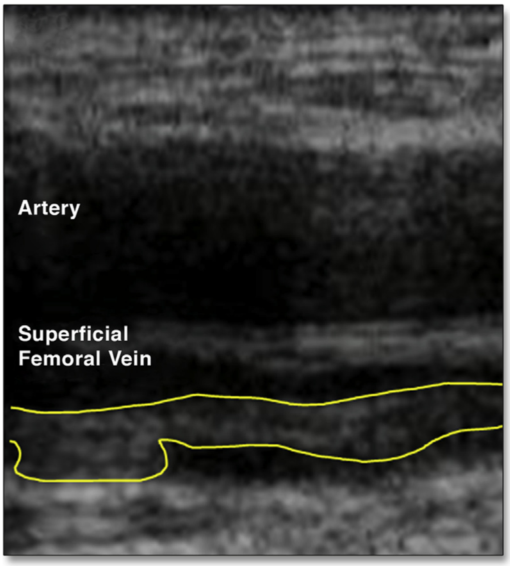
Early and accurate diagnosis of deep vein thrombosis (DVT) is required for prognostication and appropriate clinical management. Ultrasound examination is well recognized as an initial screening imaging modality for the presence and extent of DVT (1). Advances in electronic miniaturization have resulted in the advent of a pocket-size ultrasound examination (PUE) device (2,3) equipped with a linear array transducer. The present study investigated the feasibility and accuracy of the PUE for the diagnosis of DVT compared with the standard ultrasound examination (SUE).

Sixty-one consecutive patients (20 men; age 79 ± 9 years) were scheduled for SUE for the screening of DVT. They had a PUE immediately after the SUE. This study was approved by the ethics committee of the Baba Memorial Hospital. PUE was performed using the Vscan Dual Probe (GE Medical Systems, Milwaukee, Wisconsin), which was equipped with a 3.4- to 8.0-MHz linear array transducer and sector transducer. Compression ultrasonography was conducted in the standard manner. Investigators scanned 4 predefined segments, including the iliac, femoral, popliteal, and peroneal, tibial, and soleal veins. Thrombus was diagnosed as a lack of compressibility, visualization of an intraluminal echo-dense mass, vein dilation, filling defects on Doppler method, or a combination thereof. In cases with DVT, the maximum thickness of the thrombus was measured in each segment.

Pearson's correlation coefficient and Bland-Altman analysis were used to evaluate the correlation of the measurement of DVT thickness between PUE and SUE. Differences were considered significant at $p < 0.05$.

Of the 61 patients (122 lower extremity veins), the feasibility of PUE was 94% for visualizing the iliac vein, 98% for the femoral vein, 100% for the popliteal vein, and 96% for the peroneal, tibial, and soleal veins. The mean time for PUE examination was 7.4 ± 3.0 min. SUE identified 33 DVTs in 16 patients. Numbers of DVT at the different segmental levels were as follows: iliac vein in 11 segments, femoral vein in 11 segments, popliteal vein in 6 segments, and soleal veins in 5 segments (none in the peroneal and tibial veins). All DVTs in the iliac, femoral, and/or popliteal vein were detected using the PUE, resulting in a sensitivity of 100% and a specificity of 100%. However, 1 DVT in the soleal vein was missed using the PUE (80% sensitivity and 100% specificity for the peroneal, tibial or soleal vein level). Pearson's correlation coefficient showed a strong correlation in DVT thickness between SUE and PUE ($r = 0.94$, $p < 0.001$). In the Bland-Altman analysis, the 95% limits of agreement of DVT thickness was 0.36 ± 1.65 mm (mean ± 1.96 SD). The thickness of the missed DVT was 4.4 mm, whereas PUE-detectable DVT was 7.1 ± 2.2 mm. A representative case is shown in **Figure 1**.

FIGURE 1 **PUE and DVT**



A representative case of DVT in the superficial femoral vein by PUE. DVT is outlined by **yellow lines**.

This is the first study to demonstrate the ability of a PUE equipped with a linear array transducer for the visualization of veins and for the detection of DVT. The severity of DVT (location and thickness) assessed using the PUE is consistent with the results of SUE. Although ultrasound examination is widely used as an initial screening imaging modality for DVT, an expensive high-end instrument in the ultrasound laboratory may limit the clinical utility of ultrasound examination in daily practice. Further, the indication for ultrasound examination is dependent on the findings of a physical examination, along with a patient interview, although DVT diagnosis via physical examination alone has limitations (4). The accurate and immediate decision making allowed by the PUE has the potential to exert a significant impact on the current diagnostic strategies for DVT (5). Positive PUE can make other diagnostic or therapeutic procedures available earlier for the patient without SUE.

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REFERENCES

1. Gornik HL, Gerhard-Herman MD, Misra S, Mohler ER 3rd, Zierler RE. ACCF/ACR/AIUM/ASE/IAC/SCAI/SCVS/SIR/SVM/SVS/SVU 2013 appropriate use criteria for peripheral vascular ultrasound and physiological testing part II: testing for venous disease and evaluation of hemodialysis access: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force. J Am Coll Cardiol 2013;62:649-65.

2. Lafitte S, Alimazighi N, Reant P, et al. Validation of the smallest pocket echoscopic device's diagnostic capabilities in heart investigation. Ultrasound Med Biol 2011;37:798-804.

3. Kimura BJ, Gilcrease GW 3rd, Showalter BK, Phan JN, Wolfson T. Diagnostic performance of a pocket-sized ultrasound device for quick-look cardiac imaging. Am J Emerg Med 2012;30:32-6.

4. Oudega R, Moons KG, Hoes AW. Limited value of patient history and physical examination in diagnosing deep vein thrombosis in primary care. Fam Pract 2005;22:86-91.

5. Wells PS, Anderson DR, Rodger M, et al. Evaluation of D-dimer in the diagnosis of suspected deep-vein thrombosis. N Engl J Med 2003;349:1227-35.

Is Echocardiography Adequate to Identify the Severity of Anomalous Coronary Arteries?

I read with interest the comprehensive and diligent review by Lorber et al. (1) regarding congenital coronary anomalies, as studied by echocardiography in the young. The authors' main conclusion seems to be that echocardiography, when used by highly trained professionals, can identify high-risk coronary artery anomalies and can be used to manage their treatment (indications and techniques) in patients younger than 30 years of age. To better understand such anomalies (2,3), I believe that the following concepts should be collegially discussed.

Terminology is important. The authors seem to use the term anomalous aortic origin of a coronary artery (AAOCA) to designate any case of abnormal origin of a coronary artery from the opposite sinus (ACAOS). My group recently proposed different terms to signify both the involved artery (left vs. right) and the proximal course (intramural [IM] vs. intraseptal [IS] or intraconal) (2,3). For example, left ACAOS-IM versus right ACAOS-IS would, respectively, identify an anomalous left coronary artery with an IM aortic