A 61-year-old man with acute myocardial infarction developed a painful hematoma in his groin after percutaneous coronary intervention. Ultrasonography, including color Doppler, detected a pulsatile, hypoechoic, single compartment lesion (2.3 × 3.0 × 2.9 cm) consistent with a partially thrombosed pseudoaneurysm originating from the distal part of the common femoral artery (Figure, A). Sampling from the neck of the pseudoaneurysm connecting the pseudoaneurysm to the common femoral artery, spectral Doppler waveform analysis unexpectedly displayed flow directed toward the pseudoaneurysm cavity both in systole and diastole (Figure, B), in contrast to the characteristic to and fro–like flow pattern detected in uncomplicated pseudoaneurysms (Figure, C). The turbulent monophasic flow of the pseudoaneurysm neck, with its characteristic high end-diastolic velocities (Figure, B), suggested flow to an area of low peripheral resistance, in contrast to the normal high-resistance biphasic arterial flow pattern observed in the proximal superficial femoral artery immediately below the pseudoaneurysm neck (Figure, A). In addition, the common femoral vein displayed a grossly abnormal spectral Doppler flow, most pronounced in the distal portion. The flow pattern was characterized by high-velocity, turbulent, slightly pulsating, monophasic venous flow that was not influenced by respiration (Figure, B). When interpreted together, these spectral Doppler findings indicate the presence of a pseudoaneurysm in communication with an arteriovenous fistula emptying into the distal portion of the common femoral vein. This assumption was confirmed by color Doppler imaging, in which a transverse section of the femoral vessels displayed pseudoaneurysm neck (red) and arteriovenous fistula (blue) in full length as 2 parallel tracts, shunting blood from the common femoral artery to the common femoral vein (Figure, B).

Thrombotic occlusion of the pseudoaneurysm cavity using ultrasound-guided thrombin injection is a highly recommended treatment for a pseudoaneurysm and is associated with a high success rate and few complications.1,2 Rarely, the pseudoaneurysm may be complicated by an arteriovenous fistula, making treatment with thrombin injection contraindicated because of the potential leakage into the venous circulation, which may cause venous thrombosis.3 Most small pseudoaneurysms (<3 cm), with or without communicating arteriovenous fistula, may undergo spontaneous thrombosis within 4 to 8 weeks.4 The present combined pseudoaneurysm and arteriovenous fistula resolved spontaneously within 3 weeks despite antithrombotic treatment with acetylsalicylic acid and clopidogrel. In asymptomatic patients, repeated ultrasound may be performed within 3 to 4 weeks of follow-up. However, in patients who develop symptoms indicating disease progression or the pseudoaneurysm/arteriovenous fistula fails to undergo spontaneous thrombosis within 3 months, other treatment options, including surgery or interventional therapy with stent graft of the feeding artery, must be considered.

Disclosures
None.

References
Figure. Ultrasound images. A, Color Doppler long-axis view of the femoral artery and the pseudoaneurysm (PA) with high-resistance Doppler flow curve from the superficial femoral artery (SFA). B, Color Doppler short-axis view of the femoral vessels and the pseudoaneurysm with the pseudoaneurysm neck (red) and the arteriovenous fistula (blue) and the corresponding spectral Doppler signal from low-resistance monophasic arterial flow in the pseudoaneurysm neck (upper right) and high-velocity turbulent venous flow in the arteriovenous fistula (lower right). C, Color Doppler long-axis view of a common femoral pseudoaneurysm and the corresponding characteristic to and fro-like flow pattern. CFA indicates common femoral artery.
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