Corkscrew collaterals in Buerger's disease

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A 62-year-old man with Buerger's disease presented with worsening of intermittent claudication in his right limb. By conventional colour Doppler examination, the posterior tibial artery (PTA) appeared contiguous and nonobstructed (Figure 1, large arrows). Corkscrew arteries could not be visualized due to low resolution (small arrow). In contrast, advanced dynamic flow examination using Aplio SSA-700A (Toshiba, Japan) clearly demonstrated characteristic arterial features of Buerger's disease (Figure 2). First, the flow signal of the PTA was not contiguous (large arrows), suggesting multiple recanalization of organized thrombus, which is often seen in the chronic stage of Buerger's disease. Second, the flow signal within the PTA disappeared at the origin of the corkscrew artery (open arrow). Third, the corkscrew artery existed outside the lumen of the PTA (small arrows). These suggested that the corkscrew artery represented a collateral vessel, which ran alongside the obstructed PTA.

Recanalization of the thrombosed vessel and the presence of corkscrew collaterals around areas of segmental occlusion are characteristic

features of Buerger's disease (1,2). Conventional colour Doppler examination, however, cannot document the blood flow within tiny vessels because of the low resolution and low frame rates. Advanced dynamic flow images are very similar to B-mode images and can depict tiny vessels due to high resolution, wide dynamic range and high frame rates. Directional flow information can also be obtained in different colours. Advanced dynamic flow examination in the present patient provided visualization of the recanalized arterial segment and corkscrew collateral vessel circumventing the occlusion. This technique may be applied for noninvasive diagnosis of Buerger's disease.

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Figure 1

Figure 2

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