

1136 Acute iliac vein thrombosis secondary to exacerbation of May-Thurner Syndrome by over-riding arterial cross-over sheath

A 69-year-old man presented with acute left thigh pain and swelling 1 day after successful left superficial femoral artery (SFA) balloon angioplasty and stenting for claudication via contralateral right common femoral artery (CFA) access with a 45cm 6Fr cross-over sheath. Physical examination revealed palpable pedal pulses, left thigh and calf circumference 3cm greater than the right. Venous duplex ultrasound revealed non-occlusive thrombus in the left common femoral vein (CFV) extending proximally into the external iliac vein (EIV). The left common iliac vein (CIV) was obscured and not imaged.

The patient was commenced on standard dose subcutaneous low-molecular weight heparin and underwent invasive venography within 24 hours (Figure 1a). Venography performed via left popliteal vein access with the patient lying prone demonstrated a filling defect in the left CIV. Peripheral intravascular ultrasound (Vision PV 0.35, Philips Volcano, San Diego, CA) revealed severe extrinsic compression of the left CIV (Figures 1b) by the right common iliac artery (CIA) consistent with May-Thurner syndrome. Three overlapping 16mm x 120mm, 14mm x 120mm and 14mm x 60mm dedicated nitinol venous stents (Vici; Veniti Fremont, CA) were deployed from inferior vena cava to the left CFV with excellent angiographic result (Figures 2a) and significant luminal gain by intravascular ultrasound (Figures 2b). Patient's left lower limb swelling rapidly improved and resolved by 3-month follow-up.

During subsequent staged angioplasty to right SFA via left CFA puncture, fluoroscopy demonstrated the cross-over sheath crossed over the left CIV at the point of occlusion (Figures 3a and 3b).

The proposed mechanism of acute left DVT in this case was exacerbation of left CIV compression (i.e. May-Thurner syndrome) by over-riding arterial cross-over sheath causing increased obstruction of venous outflow. Our case also demonstrated venography alone may underestimate the extent of CIV compression in May-Thurner syndrome. Peripheral intravascular ultrasound is recommended for better assessment of CIV compression pre- and post-intervention.