Iliac Venous Compression Syndromes

In the April issue of *Vascular Disease Management*, Dr. Low and colleagues present an excellent case report in which there was a duplicate vena cava, left iliac venous compression by the right iliac artery (May-Thurner syndrome), and thrombophilia (hypercoaguable state).

It is rare to have all of these problems at the same time in an individual patient, but iliac venous compression is actually quite common. As cited by Dr. Low, several autopsy studies have shown that greater than 20% of the general population has some degree of congenital iliac venous compression. The most common site is where the right common iliac artery crosses over the left common iliac vein, compressing it against posterior vertebrae. This was described by May and Thurner as well as Cockett and is often referred to as May-Thurner or Cockett’s syndrome. Compression of iliac veins posteriorly by the internal iliac arteries can also occur.

The vast majority of congenital venocompressive disorders do not receive diagnosis by physicians because symptoms may be subtle or nonexistent, and noninvasive studies are often inconclusive. This is particularly the case for patients with obesity, even in the best noninvasive centers. Venography often is nondiagnostic if the iliac vein is not totally occluded. Transpelvic venous collaterals are strongly suggestive of underlying iliac venous compression, but most venograms don’t demonstrate this and are not conclusive. Computed tomography angiography (CTA) venography has been touted as helpful, but the diagnosis is often missed by CTA. Intravascular ultrasound remains the “gold standard” in diagnosing venous compression. Typically there must be greater than 50% reduction in cross-sectional area to be considered significant. Typically IVUS is recommended based on clinical judgment rather than any single diagnostic test.

These venocompressive syndromes clearly predispose individuals to venous stasis and an increased risk of proximal venous thrombosis, pulmonary embolus, recurrent deep venous thrombosis, post-phlebitic syndromes, and chronic venous ulceration. Venous compression should be considered in the differential diagnosis of patients with recurrent DVT (particularly when there is no obvious thrombophilia or injury), patients with significant deep venous insufficiency (particularly when it is unilateral), patients with recurrent pulmonary emboli, and patients with chronic venous ulceration with no obvious superficial venous insufficiency to serve as an alternative etiology. Iliac venous compression can be bilateral and the common femoral veins may occasionally be involved.

The treatment of iliac venous compression is typically balloon angioplasty followed by stenting (most commonly utilizing woven stent designs which have better radial force in large-diameter devices than nitinol tubular stents). When there is thrombosis, lytic therapy is usually recommended prior to stenting. There are varying opinions about the need for placement of IVC filters prior to treatment in cases where lytics are utilized. Careful sizing of the common and external iliac veins is crucial to achieve ideal results and lessen risk of stent migration. Pre and post IVUS images are recommended. Dual antiplatelet agents are typically utilized for at least 3 months, and in cases of thrombophilia, anticoagulants are typically utilized.

Not all iliac venous compression syndromes require interventional therapy. The diagnosis should make clinicians more vigilant in avoiding drugs and therapies that are known to increase coagulability.

I have personally treated patients with recurrent venous ulceration for greater than 10 years resulting in frequent hospital admissions who were diagnosed and treated with stenting of iliac veins with dramatic symptomatic relief and rapid healing of their chronic ulcers. All clinicians must consider this in their differential diagnosis of venous disorders.

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