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The Eye Cannot See What the Mind Does Not Know: An Unusual Cause of Deep Venous Thrombosis

To the Editor:

CASE REPORT

A 45-year-old woman presented with a 3-day history of left lower-extremity swelling associated with pain. She denied any trauma, chest pain, palpitations, shortness of breath, nausea, vomiting, abdominal pain, or bladder and bowel complaints. She did not report any use of oral contraceptive pills. There was no history of prolonged travel, recent surgery, or similar episodes in the past. She did not have any family history of hypercoagulable disorder or personal history of first-trimester abortions. She was an active smoker, occasional drinker, and used marijuana and cocaine. Her medical history was significant for mild intermittent asthma. Her physical examination was remarkable for calf tenderness and diffuse swelling of the left lower extremity without signs of infection. Laboratory data were unremarkable. Venous duplex scan of the left leg showed acute deep venous thrombosis involving the common femoral vein. Abdomen computed tomography with contrast, which was done to rule out an intra-abdominal obstructing mass, showed extensive deep venous thrombosis involving the left common iliac, external iliac, and common femoral veins, consistent with a diagnosis of May-Thurner syndrome. She then underwent left leg venography (**Figure 1**), prophylactic inferior vena cava filter placement, and mechanical thrombectomy of the left iliofemoral veins followed by angioplasty and stent placement (**Figure 2**). She was started on anticoagulation with intravenous heparin and Coumadin. Heparin was discontinued after achieving a therapeutic international normalized ratio of 2-3. Coumadin was continued for 6 months. A repeat venous duplex at 6 months showed complete resolution of the deep venous thrombus.

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DISCUSSION

May-Thurner syndrome or iliac vein compression syndrome refers to extrinsic compression of the left common iliac vein against the fifth lumbar vertebra, caused by an overriding right common iliac artery. This initiates focal stenosis and "spur" formation of the left common iliac vein with subsequent venous outflow obstruction predisposing to deep venous thrombosis. Because compression involves the lower lumbar vertebrae, May-Thurner syndrome should be suspected in patients with scoliosis and dilated perimedullary veins. Although this variant is present in 20% of the population, the prevalence of May-Thurner syndrome is only 2%-3% of all lower-extremity deep venous thromboses.[1] The diagnosis may be missed due to coexistence of other easily identifiable risk factors for deep venous thrombosis, like oral contraceptive use, pregnancy, prolonged travel, or positive family history, which also may predispose these patients to May-Thurner syndrome—related

Figure 1 Computed tomography venography shows occlusion of the left common iliac, left external iliac, left common femoral, and left superficial femoral veins.

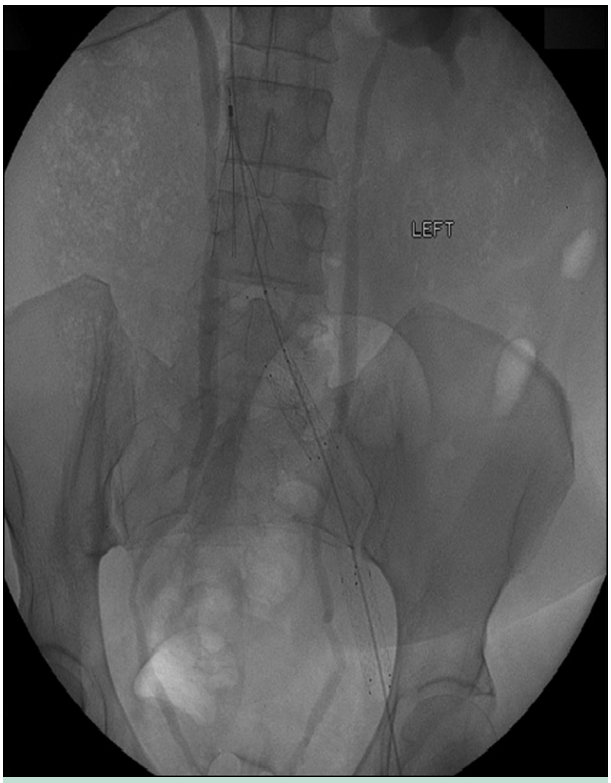

Figure 2 Retrievable inferior vena cava filter along with stent in the above-mentioned involved venous system.

deep venous thrombosis. It commonly affects women aged 25-50 years. Clinical features include pain, swelling, claudication, venous ulcers, and skin changes involving the lower extremities. Potential complications include recurrence if inadequately treated initially, pulmonary emboli, iliac vein rupture, and post-thrombotic syndrome (chronic edema, ulcers, hyperpigmentation and varicosities, lipodermatosclerosis), particularly with extensive deep venous thromboses. Venous duplex ultrasound helps with the dynamic evaluation of deep pelvic veins but may be limited by body habitus, excessive bowel gas, and technical expertise. Labropoulos et al[2] proposed a peak vein velocity ratio of >2.5 across the stenosis as a sensitive measure of a pressure gradient of 3 mm Hg. Computed tomography or magnetic resonance venography are sensitive tools to estimate the degree of stenosis and determine other anatomic variants. Intravascular ultrasound helps in proper vessel sizing and estimating the severity of stenosis before stent deployment. It also helps in postprocedure aspects like determining cross-sectional area gain, confirming stent placement, and evaluating stent expansion and in-stent restenosis. The mainstay of therapy includes endovascular treatment in combination with anticoagulation. Endovascular treatment consists of catheter-directed thrombolysis using tissue plasminogen activator, percutaneous mechanical thrombectomy, or manual aspiration thrombectomy followed by balloon angioplasty and stent placement. A prophylactic retrievable inferior vena cava filter should be placed before intervention to decrease the risk of embolization after catheter-directed thrombolysis, especially with large clots. Patients should subsequently be anticoagulated for at least 6 months. Open surgical options are favored less these days. These include full dissection of the right iliac artery from the underlying left iliac vein, open thrombectomy with possible patch angioplasty of the left iliac vein, and adding adjunct procedures, such as arteriovenous fistulas, to enhance flow in the diseased vein.

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