

## Anomalous course of the left common iliac vein anterior to the right common iliac artery with resultant May-Thurner syndrome



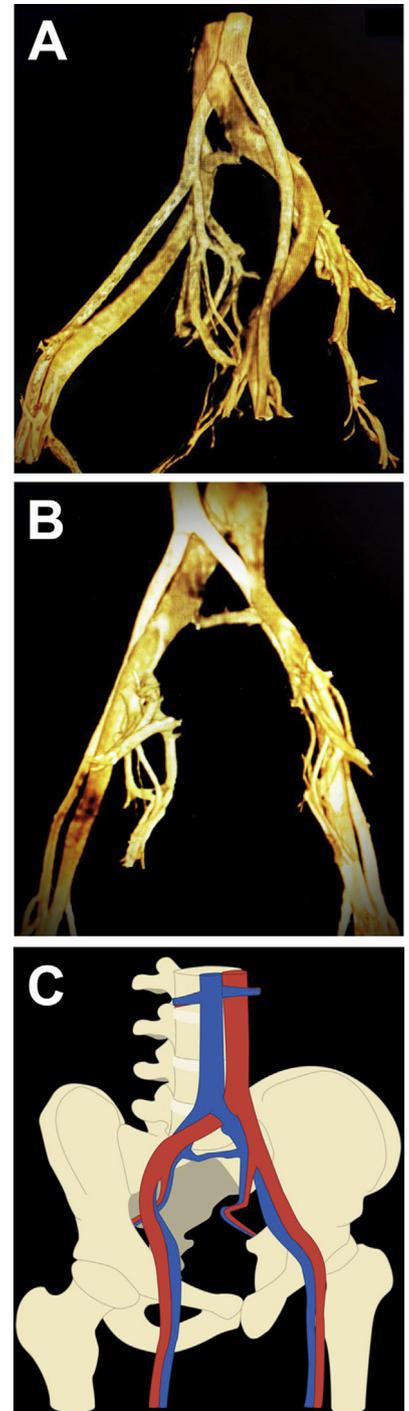
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A previously healthy 20-year-old woman presented with worsening bilateral (left greater than right) leg swelling of 2 years duration. On physical examination, she had nonpitting edema of the lower extremities with no discoloration or ulceration. Duplex venous ultrasound examination of the lower extremities showed no deep venous thrombosis or venous reflux. Given her age and lack of risk factors, lymphedema praecox was the leading differential diagnosis. She was referred for customized lymphatic pump and compression stockings. To rule out anomalous anatomy and iliac venous compression, computed tomography venography was performed, demonstrating that the left common iliac vein (CIV) coursed anterior to the left common iliac artery (CIA), with local compression of the left CIV. Follow-up magnetic resonance venography verified previous findings and demonstrated no other venous anomalies (A/Cover-C).

The patient subsequently underwent bilateral catheter-directed venography of the iliofemoral veins and inferior vena cava (IVC) with concomitant intravascular ultrasound. Venography confirmed left CIV stenosis near its insertion point into the IVC with moderate stagnation of flow and reflux into the internal iliac and pelvic venous circulation (D). One major venous tributary draining the left CIV into the contralateral side distal to the area of stenosis was noted, verifying the hemodynamic significance of the stenosis (E). Intravascular ultrasound revealed 50% and 80% cross-sectional area reduction in the right and left CIVs, respectively. Given the mildness of symptoms and absence of deep venous thrombosis, no intervention was performed in favor of nonoperative management with compression therapy and prophylactic anticoagulation to reduce the risk of thromboembolic events due to variant anatomy.

Compression of the left CIV posterior to the right CIA or a tortuous left CIA has been well described.<sup>1</sup> There have also been reports of compression of the CIV by the ipsilateral internal iliac artery<sup>2-4</sup> and of the IVC by the right CIA.<sup>5</sup> To our knowledge, this variant of the left CIV coursing anterior to the right CIA with resultant venous compression has not been previously reported. Understanding anatomic variations in patients with symptomatic venous compression is essential to refine existing treatments and interventions.

The patient consented to publication of this report.



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## REFERENCES

1. Kaltenmeier CT, Erben Y, Indes J, Lee A, Dardik A, Sarac T, et al. Systematic review of May-Thurner syndrome with emphasis on gender differences. *J Vasc Surg Venous Lymphat Disord* 2018;6:399-407.e4.
2. Molloy S, Jacob S, Buckenham T, Khaw KT, Taylor RS. Arterial compression of the right common iliac vein; an unusual anatomical variant. *Cardiovasc Surg* 2002;10:291-2.
3. Steinberg JB, Jacocks MA. May-Thurner syndrome: a previously unreported variant. *Ann Vasc Surg* 1993;7:577-81.
4. Sharafi S, Farsad K. Variant May-Thurner syndrome: compression of the left common iliac vein by the ipsilateral internal iliac artery. *Radiol Case Rep* 2018;13:419-23.
5. Fretz V, Binkert CA. Compression of the inferior vena cava by the right iliac artery: a rare variant of May-Thurner syndrome. *Cardiovasc Intervent Radiol* 2010;33:1060-3.

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