

Surgical images: soft tissue

Recurrent deep vein thrombosis caused by hypoplasia of the inferior vena cava

A 62-year-old man had relapsing episodes of deep vein thrombosis of the lower extremities. The first episode had occurred almost 40 years earlier, followed by at least 7 similar episodes. He was taking anticoagulants orally. He had no other concomitant disease.

On clinical examination dilated veins could be seen on the lateral abdominal wall and periumbilically (Medusa's head) (Fig. 1). Both lower extremities showed signs of chronic venous insufficiency, with enlarged varicose veins, hyperpigmentation and skin atrophy (Fig. 2).

Chest x-ray, routine hematologic test results and the electrocardiogram were within the normal range. CT of the abdomen showed absence of the inferior vena cava (IVC) below the level of the liver. MR venography confirmed the presence of an extremely narrow structure below the confluence of the right renal vein to the IVC and was considered as the continuation of the IVC (hypo-

plastic IVC) (Fig. 3). The azygos and hemiazygos venous systems as well as the left lumbar vein were massively dilated. The dilated left lumbar vein received enlarged collateral veins from the external iliac vein and common femoral vein.

Congenital malformations of the IVC occur in 2%–3% of the population, which reflects the complexity of its embryogenesis especially in its postrenal segment.¹ The commonest congenital anomalies include left positioning and duplication of the vein.² The presence of spontaneous, recurrent, usually bilateral, deep vein thromboses of the lower extremities in young patients, which tend to extend to the iliac veins, should alert the physician to this anomaly.³ However, the development of the deep vein thrombosis as a paraneoplastic manifestation or as a result of a hypercoagulation must be ruled out.⁴ Absence or hypoplasia of the IVC can be accompanied by other congenital abnormalities such as dextrocardia

or other congenital heart disease.⁴ Treatment consists of lifelong anticoagulant therapy.

Competing interests: None declared.

References

1. Obernosterer A, Aschauer M, Schnedi W, et al. Anomalies of the inferior vena cava in patients with iliac venous thrombosis. *Ann Intern Med* 2002;136:37-41.
2. Hamoud S, Nitecky S, Engel A, et al. Hypoplasia of the inferior vena cava with azygos continuation presenting as recurrent leg deep vein thrombosis. *Am J Med Sci* 2000;319:414-6.
3. Timmers GJ, Falke TH, Rauwerda JA, et al. Deep vein thrombosis as a presenting symptom of congenital interruption of the inferior vena cava. *Int J Clin Pract* 1999; 53:75-6.
4. Chee YL, Culligan DJ, Watson HG. Inferior vena cava malformation as a risk factor for deep venous thrombosis in the young. *Br J Haematol* 2001;114:878-80.



FIG. 1. Dilated collateral veins of the abdominal wall.



FIG. 2. Signs of chronic venous insufficiency of both lower extremities, with hyperpigmentation and chronic ulcers.

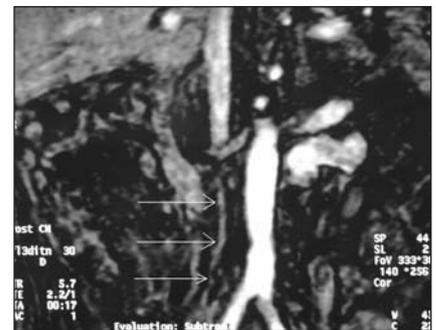


FIG. 3. MR venography. A hypoplastic inferior vena cava is seen below the confluence of the right renal vein.

Submitted by Konstantinos Atmatzidis, MD, PhD, Basilios Papaziogias, MD, Theodoros Pavlidis, MD, George Paraskevas, MD, Charalambos Mirelis, MD, and Thomas Papaziogias, MD, PhD, from the 2nd Surgical Clinic of the Aristotle University of Thessaloniki, Greece

Correspondence to: Dr. Basilios Papaziogias, Fanariou str. 16, 551 33 Thessaloniki, Greece; fax 0030-2310-992563; papaziog@med.auth.gr

Submissions to *Surgical Images*, soft-tissue section, should be sent to the section editors: Dr. David P. Girvan, Vicoria Hospital Corporation, PO Box 5375, Station B, London ON N6A 5A5 or Dr. Nis Schmidt, Department of Surgery, St. Paul's Hospital, 1081 Burrard St., Vancouver BC V6Z 1Y6.