

## Case Report

## Cockett's Syndrome: What the Radiologist Should Know

Marrakchi Salma<sup>\*</sup>; Hadj Hsain Ihssan; El Yousfi Zakia;  
Laamrani Fatima Zahrae; Jroundi Laila; El Aoufir Omar  
Department of Emergency Radiology, Ibn Sina University  
Hospital, Rabat, Morocco

**\*Corresponding author: Marrakchi Salma**

Department of Emergency Radiology, Ibn Sina University  
Hospital.

Address: Mohamed Ben Abdellah regrabui, Al Irfane,  
Rabat, Morocco.

Tel: +212650095952

Email: marrakchi.salma@gmail.com

Received: April 27, 2024

Accepted: May 22, 2024

Published: May 29, 2024

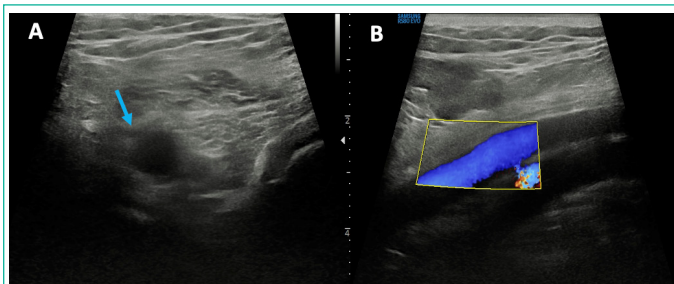
## Abstract

Cockett's syndrome, also known as May-Thurner Syndrome (MTS), is a rare vascular condition characterized by compression of the Left Common Iliac Vein (LCIV) by the Right Common Iliac Artery (RCIA), predisposing to venous thrombosis. While often asymptomatic, it can present with lower limb swelling and pain. Diagnosis relies on imaging, with Computed Tomography (CT) angiography being particularly useful. Prompt recognition is essential to prevent thrombotic complications, with endovascular intervention being the preferred treatment. This article presents a case highlighting the radiological features of Cockett's syndrome in a 54-year-old male with recurrent deep vein thrombosis.

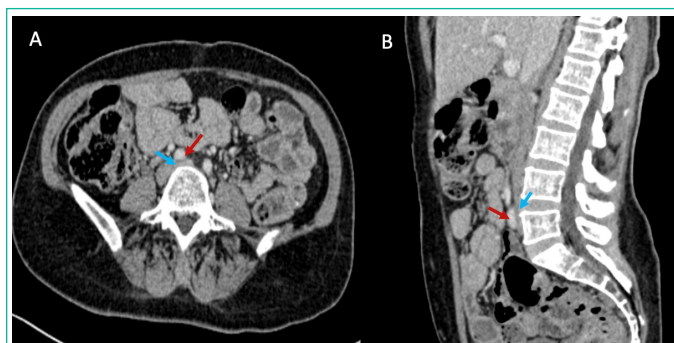
**Keywords:** Cockett syndrome; Compressive venous syndromes; May-Thurner syndrome (MTS); Deep vein thrombosis (DVT)

## Case Presentation

We present a case of a 54-year-old male with a history of recurrent deep vein thrombosis of the left lower limb. Addressed for follow-up assessment and etiological exploration following treatment of his latest episode of left lower limb deep vein thrombosis, Doppler ultrasound of the left lower limb revealed the resolution of venous thrombosis (Figure 1). Subsequent abdominopelvic CT angiography depicted compression of the left common iliac vein by the right common iliac artery, with the vein remaining patent and devoid of intraluminal thrombus (Figure 2). The patient was treated with endovascular vein patch angioplasty and stenting, resulting in symptom improvement.



**Figure 1:** Ultrasound in B-mode (A) and color Doppler (B) of the left popliteal vein: showing a Popliteal vein compressible after compression maneuver by the ultrasound probe (Arrow). Color Doppler ultrasound images of the popliteal vein in longitudinal section demonstrating patency with color Doppler signal.



**Figure 2:** Axial (A) and sagittal (B) reformatted images of MDCT venography of a 54 years old male with history of recurrent deep vein thrombosis of the left lower limb, showing compression of left common iliac vein (Blue arrow) by right common iliac artery (Red arrow) which remains permeable without intraluminal thrombus. (MDCT: Multi-Detector Computed Tomography).

## Discussion

Cockett's syndrome, also known as May-Thurner syndrome or iliac vein compression is a rare vascular condition in which the Left Common Iliac Vein (LCIV) is compressed when it passes between the Right Common Iliac Artery (RCIA) and the vertebral body on the lower lumbar spine [1].

This condition is thought to be present in up to one-third of

the general population. It is primarily seen in people aged 18–50 years old, and women are five times more likely than men to have Cockett's syndrome [2].

Most patients with this anatomy are asymptomatic, but some can develop symptoms of venous thrombosis with swelling and pain in the lower left limb.

The compression caused by the pulsatile force of the artery on the vein damage the intima and lead to the formation of membranes or bands in the vascular lumen that hinder or obstruct the flow of blood in the vein, favoring thrombus formation [1].

In 1957 May and Thurner reported the presence of intraluminal fibrous bands in the left iliofemoral vein secondary to compression from the right common iliac artery in 22% of the 430 cadavers they dissected and called this finding MTS [3].

Cockett and Thomas were the first to report these findings in living patients [3].

The diagnosis may be suspected on clinical features with recurrent deep vein thrombosis of the left lower limb. Positive diagnosis is made with imaging.

Venous duplex ultrasound or Doppler-Ultrasound is performed for exploring leg swelling, to look for Deep Venous Thrombosis (DVT), and rule out its deferential diagnosis. However, the diagnosis of iliac venous compression can be difficult on ultrasonography because direct ultrasound visualization of the iliac veins is not always possible due to their relatively high location within the pelvis [2].

Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) are extremely useful non-invasive tests that can directly visualize compression of left common iliac vein when it passes between right common iliac artery, as well as DVT and collateral vessels if present[2].

If not recognized and treated in a timely and effective fashion, DVT, post thrombotic sequelae and pulmonary embolism are the most serious complications.

The current treatment strategy of choice is endovascular vein patch angioplasty and stenting with the aim of improving the caliber of the lumen and enabling normal venous drainage[1].

### Conclusion

While Cockett's syndrome may be rare, its diagnosis should not elude the vigilant eye of the radiologist during the etiological evaluation of venous thromboses. With the advancements in endovascular interventional therapy, the once rare complications associated with this syndrome have become increasingly manageable. It underscores the pivotal role of radiology in not only identifying but also effectively managing this condition.

### References

1. Gil Martín AR, Carreras Aja M, Arrieta Ardieta I, Labayen Azparren I. Cockett's syndrome, May-Thurner syndrome, or iliac vein compression syndrome. *Radiologia*. 2014; 56: e5-8.
2. Liddell RP, Evans NS. May-Thurner syndrome. *Vasc Med*. 2018; 23: 493-496.
3. Mangla A, Hamad H. May-Thurner Syndrome. In: StatPearls. Treasure Island (FL): StatPearls Publishing. 2022.
4. Poyyamoli S, Mehta P, Cherian M, Anand RR, Patil SB, Kalva S, et al. May-Thurner syndrome. *Cardiovasc Diagn Ther*. 2021; 11: 1104-1111.
5. Sedhai YR, Golamari R, Salei A, Alukai J, Basnyat S, Pathak S, et al. May-Thurner Syndrome. *Am J Med Sci*. 2018; 355: 510-514.