

A Case Report on May-Thurner Syndrome in Recurrent Unilateral Left Lower Limb Deep Vein Thrombosis

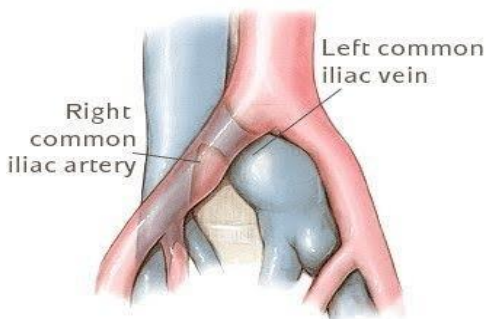
Claire Ng¹, Adrian Ng²

1. Aberdeen Royal Infirmary, Foresterhill Rd, Aberdeen, UK.

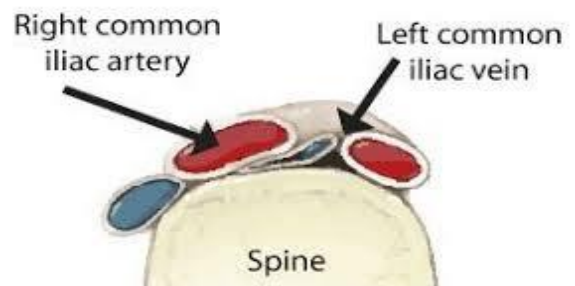
2. University of St Andrews, St Andrews, UK.

Introduction

- May-Thurner Syndrome (MTS) is a condition characterised by symptomatic occlusion of the lower limb venous system due to mechanical compression of the left common iliac vein between the overlying right common iliac artery and the underlying lumbar spine.
- In 1956, May and Thurner had discovered that trauma to the endothelium of the left common iliac vein from chronic pulsation of the overlying right common iliac artery led to the formation of 'spurs' between the walls of the vein. This coupled with external venous compression led to venous stasis and obstruction which increases the risk of deep vein thrombosis (DVT) within the iliofemoral region. (1,2)
- As it often affects the left lower limb (L LL), the risk of left iliofemoral DVT is higher.
- It is a frequent anatomic variant, causing >50% occlusion in the left common iliac vein in 1/4 of the general population and >25% occlusion in 2/3 of general population. (3)
- Complications to be aware of is pulmonary embolism (PE) which carries a high risk of mortality and morbidity.(4)



(5)



(5)

Objective

To raise clinicians' awareness of MTS and discuss its presentation, pathophysiology, imaging investigations and management.

Presentation

- A 76-year-old overweight female presented with 1-week history of worsening unilateral L LL swelling associated with severe pain, warmth and inability to mobilise secondary to pain.
- Previous DVT was 10 years prior.
- No other risk factors or triggers identified.
- She was seeking a second opinion as was not improving on oral cloxacillin and prednisolone which were prescribed by another hospital who diagnosed her with L LL cellulitis.

Investigation

- Ultrasound (US) of the LL veins revealed DVT of the left common femoral vein with suspicion for MTS.
- Multiphase CT Abdomen Pelvis (CTAP) confirmed MTS and revealed extensive DVT from the left common iliac vein to the common femoral vein secondary to proximal compression of the left common iliac vein by the right common iliac artery.

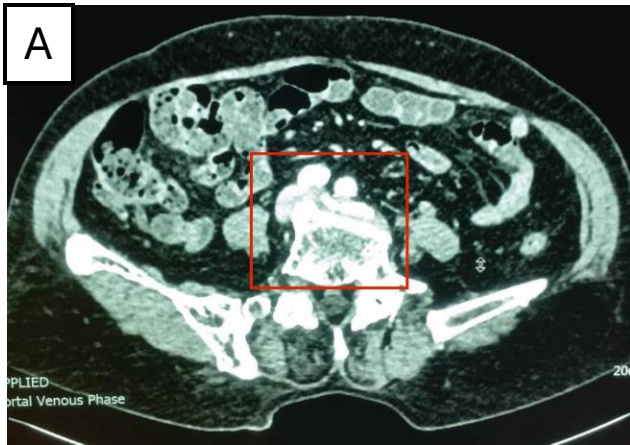


Image A: CTAP at level of L5 and confluence of LCIV and RCIV, area of interest outlined in red (Image B).

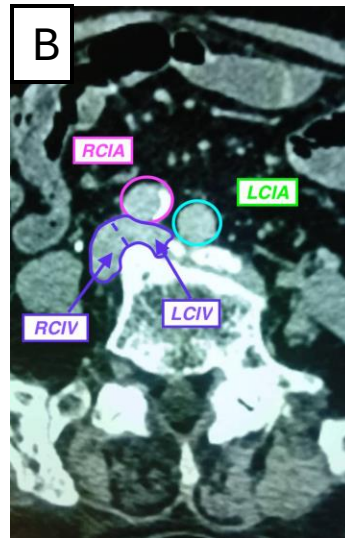


Image B: MTS confirmed. LCIV compressed between RCIA and L5 vertebrae.

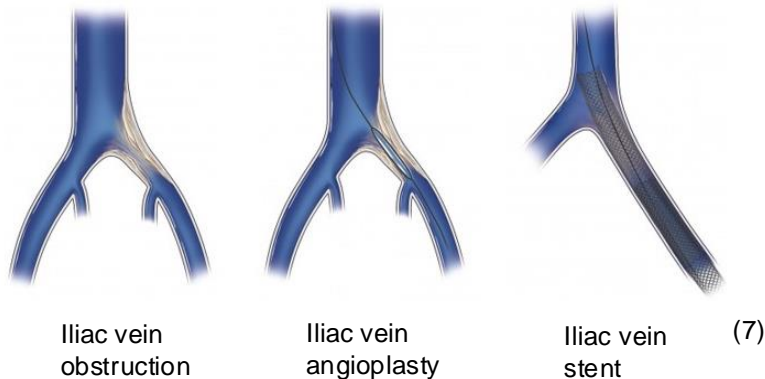
RCIA (Right Common iliac artery); LCIA (Left common iliac artery);
RCIV (Right common iliac vein); LCIV (Left common iliac vein)

Treatment and outcome

- Treated with apixaban long-term.
- Thrombus gradually resolved on follow-up US.
- Made an uneventful recovery and declined any endovascular intervention as she had remained asymptomatic post-treatment.

Conclusion

- Despite the risk of fatal PE, MTS is often overlooked as a differential in patients presenting with unexplained recurrent DVT (4) as other risk factors for DVT are more easily recognised.
- Regardless of age, like our patient who was in her 70s, MTS should always be assessed for in cases of unprovoked recurrent DVT.
- Treatment includes anticoagulants and endovascular intervention such as catheter-guided thrombectomy (CDT), AngioJet rheolytic thrombectomy (ART), balloon angioplasty, and stent implantation (6).
- This differs from other causes of DVT, hence early recognition would enable appropriate intervention.
- This prevents disease recurrence and reduces overall mortality and morbidity.



References

1. May R, Thurner J. The cause of the predominantly sinistral occurrence of thrombosis of the pelvic veins. *Angiology*. 1957;8:419–27.
2. Cockett FB, Thomas ML, Negus D. Iliac vein compression.--Its relation to iliofemoral thrombosis and the post-thrombotic syndrome. *Br Med J*. 1967;2:14–9.
3. Kibbe MR, Ujiki M, Goodwin AL, Eskandari M, Yao J, Matsumura J. Iliac vein compression in an asymptomatic patient population. *Journal of Vascular Surgery* [Internet]. 2004 May 1 [cited 2022 Sep 20];39(5):937–43.
4. Harbin MM, Lutsey PL. May-Thurner syndrome: History of understanding and need for defining population prevalence. *Journal of Thrombosis and Haemostasis*. 2019 Dec 27;18(3):534–42.
5. Alaska Vein Clinic [Internet]. Alaska Vein Clinic - Alaska's Most Experienced Vein Center. 2018 [cited 2024 Oct 21]. Available from: <https://alaskaveinclinic.com/may-thurner-syndrome/>
6. Jin W, Yu G, Huang J, Lu K, Huang C. Timing of Endovascular Interventions for Iliac Vein Compression Syndrome With Thrombus. *Clinical and Applied Thrombosis/Hemostasis* [Internet]. 2021 Jan 1 [cited 2024 Oct 13];27. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8221663/>
7. Recanalizations of Occluded Major Veins Miami | Miami Vein Center [Internet]. *Miamivein.com*. 2017 [cited 2024 Oct 21]. Available from: <https://www.miamivein.com/recanalizations-of-occluded-major-%20veins/>