Acta Scientific Clinical Case Reports

Volume 3 Issue 1 January 2022

Short Communication

MTS, A Commonly Missed Diagnosis

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Received: November 22, 2021

Published: December 09, 2021

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May Thurner syndrome (MTS) is an anatomically variable condition of venous outflow obstruction caused by extrinsic obstruction [1], resulting in an acquired stenosis commonly of the left common iliac vein secondary to compression by the overlying right common iliac artery [2]. Venous outflow obstruction in young adults was not well understood until 1957 when Dr. Robert May and Dr. Joseph Thurner concluded in their study of 430 cadavers that thrombosis of the pelvic veins occurs approximately eight times more frequently on the left side than on the right side of the pelvis. They attributed this to spur-like formations in the left common iliac vein and described three types of these formations. The first protrudes into the lumen like a pier or pillar, the second divides the lumen completely, and the third obstructs it almost entirely. Based on their histologic data, they reported that those formations are not of a congenital origin but develop during the patient's lifetime [3]. The exact prevalence of MTS is not well known. Many studies estimated an asymptomatic anatomical variant in the general population to be 22-32% [3-5].

Most patients with the venous compression are asymptomatic. Symptoms are more commonly encountered in the second or third decade of life. Extensive ipsilateral deep vein thrombosis (DVT) with or without subsequent pulmonary embolism (PE), chronic lower extremity swelling, venous claudication, skin discoloration and venous ulcer are all possible presenting symptoms. Some patients may develop post-thrombotic syndrome as described by Cockett., *et al.* In 1967 [6]. Risk factors including hormonal therapy, contraceptive pills, pregnancy, recent surgery, prolonged immobilization and dehydration do all play a role in the pathogenesis of DVT.

Some advocates to evaluate for MTS in all young ladies with left sided acute DVT [7]. However, it is more important to evaluate for MTS in all patients especially young ones with unprovoked left lower extremity DVT and those with chronic left lower extremity swelling with no known other etiology. Diagnosis of MTS starts with strong clinical suspicious followed by venous duplex ultrasound to evaluate for lower extremity and iliac veins pathology. However, iliac vein visualization using duplex ultrasound sometimes can be restricted by different factors including body habitus, bowel gas and technical expertise. Visualization of the external iliac and common iliac veins was estimated to be 79% and 47% respectively [8]. Computerized tomography venogram (CTV) and magnetic resonance venography (MRV) are helpful in evaluating the central venous system for stenosis or external compression including compression from tumors and hardware in the adjacent bones. Catheter based venogram combined with intravascular ultrasound (IVUS) remains the gold standard test to evaluate for MTS given their high sensitivity. IVUS has the ability not only to illustrate the morphology and degree of the lesion within the iliac vein, but also to calibrate the vessel to help in choosing the appropriate stent size with high accuracy.

Treatment of MTS depends on the severity of symptoms and the presence or absence of DVT. Non-surgical treatment with compression stockings and exercise can be recommended in patients with minimal symptoms and no DVT. Patients with moderate/ severe symptoms or DVT, treatment with lesion stenting is recommended. In setting of DVT heparin therapy should be initiated as soon as the diagnosis of DVT is established. Those with extensive amount of iliofemoral DVT may benefit from catheter-based thrombolysis or

endovascular thrombectomy before proceeding with lesion stenting. Open surgical approach is becoming less and less favorable with the advancement in the endovascular techniques and equipment. MTS stenting has a success rate of > 90% and 1year patency rate of up to 94% [9,10].

Although MTS commonly occurred in the left side, right side variant of MTS has also been reported [2]. Rare cases of right-sided iliac vein compression have been reported such as MTS secondary to prostate enlargement [11], lumbosacral exostosis [12], or compression of the right iliac vein between the right internal and external iliac arteries [13].

Physicians and medical providers should include MTS in their differential diagnosis during evaluation of lower extremity venous pathology, otherwise MTS diagnosis can be missed, and the delivery of appropriate medical treatment can be delayed.

Bibliography

1. Mousa AY and AbuRahma AF. "May-Thurner syndrome: update and re-view". *Annals of Vascular Surgery* 27 (2013): 984-995.

2. Alnasif A., *et al.* "Unusual presentation of right sided May-Thurner syndrome". *Journal of Vascular Surgery Cases, Innovations and Techniques* 7.4 (2021): 768-771.

3. May R and Thurner J. "The cause of the predominantly sinistral occur- rence of thrombosis of the pelvic veins". *Angiology* 8 (1957): 419-427.

4. McMurrich JP. "The occurrence of congenital adhesions in the com- mon iliac veins and their relation to thrombosis of the femoral and iliac veins". *The American Journal of the Medical Sciences* 135 (1908): 342-346.

5. Ehrich WE and Krumbhaar EB. "A frequent obstructive anomaly of the mouth of the left common iliac vein". *American Heart Journal* 26 (1943): 737-750.

6. Cockett FB and Thomas ML. "The iliac compression syndrome". *British Journal of Surgery* 52 (1965): 816-821.

7. Murphy EH., *et al.* "Symptomatic ileofemoral DVT after onset of oral contraceptive use in women with previously undiagnosed May-Thurner syndrome". *Journal of Vascular Surgery* 49 (2009): 697e703.

8. Messina LM., *et al.* "Clinical signifi- cance of routine imaging of iliac and calf veins by color flow duplex scanning in patients suspected of having acute lower extremity deep venous thrombosis". *Surgery* 114 (1993): 921e7.

9. O'Sullivan GJ., *et al.* "Endovascular management of iliac vein compression (May-Thurner) syndrome". *Journal of Vascular and Interventional Radiology* 11 (2000): 823e36.

10. Hurst DR., *et al.* "Diagnosis and endovascular treatment of iliocaval compression syndrome". *Journal of Vascular Surgery* 34 (2001): 106e13.

11. Hung JB., *et al.* "Prostatism and May-Thurner syndrome". *American Journal of Emergency Medicine* 31 (2013): 445.

12. Wasserburger J., *et al.* "Lumbosacral exostosis as a rare cause of iliac vein compression and significant limb swelling". *Journal of Vascular Surgery Cases, Innovations and Techniques* 5 (2019): 529-531.

13. Tai E., *et al.* "Diagnosis and management of right external iliac vein "sandwich": a rare cause of iliofemoral deep venous thrombosis". *Journal of Vascular Surgery Cases, Innovations and Techniques* 5 (2019): 314-318.

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