



# Folate Deficiency in May-Thurner Syndrome

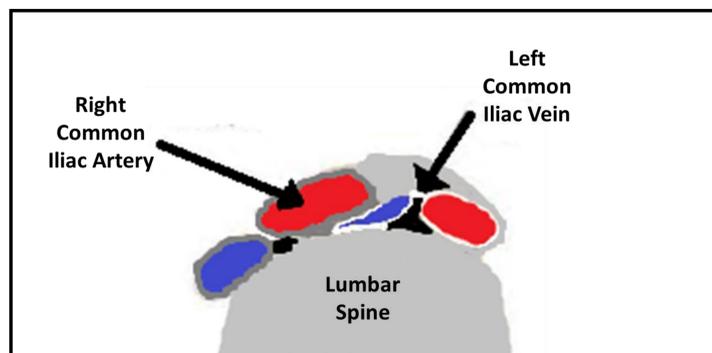
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## Introduction

May–Thurner Syndrome (MTS) also known as iliac vein compression syndrome was first described by Virchow in 1851, but further classified in the 1950s by May and Thurner (1-2). It is a condition defined by an anatomical variant that results in the compression of the left common iliac vein by the right common iliac artery and usually the fifth lumbar vertebrae leading to vessel wall injury and subsequently thrombosis (2). The prevalence of MTS is estimated between 20-30% per recent autopsy reports but overall incidence of lower extremity DVT is 2-3% (3.). This case report describes MTS in an Hispanic female with right hydroureter/ureterocele and folate deficiency.

## Background



**Figure 1:** Depiction of right common iliac artery compressing the left common iliac vein leading to thrombosis formation

## Case Presentation

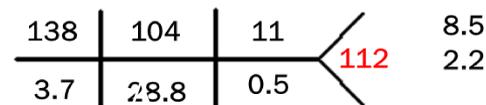
44-year-old Nicaraguan female who is a lifelong nonsmoker without any significant past medical history presented to the emergency room with left leg pain and swelling for seven days. The patient stated that her whole left leg was edematous without erythema or increased warmth. Pain was aggravated by ambulation especially in the back of her left calf. No recent travel, trauma, surgery or immobilization of the lower extremity. Review of system was negative with exception of a mild sinusitis. Patient denied fever/chills, chest pain, coughing, dyspnea, hemoptysis, or abdominal pain. Admitted to tubal ligation as only surgical procedure but this was two years ago. Patient does not have a family history of any ailments including DVTs, bleeding disorders, or unplanned miscarriages. No recent allergies or medications use including oral contraceptives or pills/herbal supplements.

## Hospital Course

Initial vitals on presentation showed blood pressure of 149/92 mm Hg, pulse 91 beats per minute, temperature 98.8 F (36.7°C), respiratory rate of 18 per minute with an oxygen saturation of 98% on room air. Patient is 5 feet tall and weighed 160 pounds (76kg) with BMI of 33. Physical exam revealed middle-aged, obese Hispanic female lying in her bed in no acute distress. Significant physical examination findings included: tender swollen of left leg from ankle to the thigh; left calf measured 19 inches, whereas right calf measured 16 inches; +Homan’s sign; pulses were palpable in bilateral lower extremities.

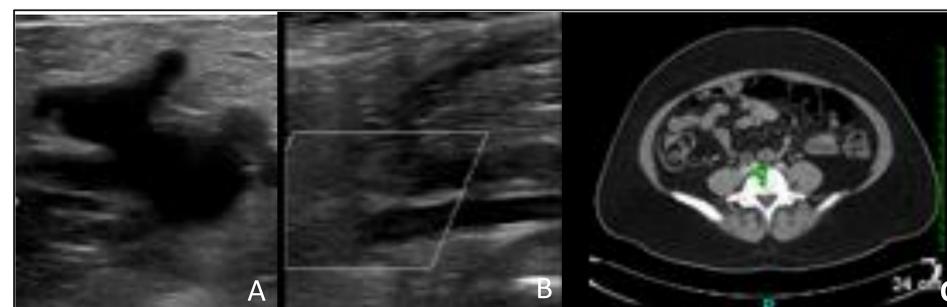


Segs: 77%  
Lymphs: 20%  
Mono: 0.2%  
Eosin: 2.0%  
MCV: 66

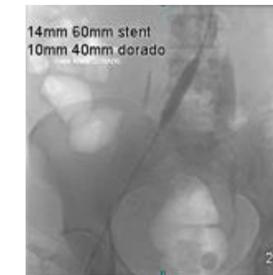


Alb: 3.3  
Total Bili: 0.4  
Alk Phos: 77  
Protein: 6.4  
ALT: 16  
AST: 12  
CRP: 8.8  
D-dimer: 6589  
PT/INR: 11.5/1.1  
PTT: 21.8  
β-HCG: <0.5

**Figure 2:** Patient’s Labs on Arrival



**Figure 3:** Imaging. **A-B.)** Doppler ultrasound of left lower extremity showed extensive DVT with common femoral vein, proximal greater saphenous vein, femoral vein, proximal deep femoral vein, and popliteal veins thrombosed. **C.)** CT of abd/pelvis with contrast showed DVT involving left femoral, common femoral and iliac vein with abrupt tapering of the left common iliac vein interposed between the common iliac artery and the L5 vertebral body which is consistent with May-Thurner lesion.



**Figure 4:** Treatment. Venogram was performed and a 5-French infusion catheter was placed with tPA infusion. Angioplasty and two overlapping 14 mm Bard Luminexx 60 mm Nitinol self-expanding stents

## Discussion

- MTS is hypothesized to be as a result of elastin and collagen deposition in left common iliac vein after chronic arterial pulsation of the right common iliac artery leads to vascular thickening or “venous spurs” (2.) These venous spurs lead to venous thrombosis.
- It has always been stipulated that the incidence of MTS is in the 30% but DVT associated from MTS is around 2% (4).
- Oral contraceptive, pregnancy and trauma are known risk factors of MTS and over 60% of patients have a hypercoagulable state (5).
- Tests include: computed tomography venography (CTV), magnetic resonance venography (MRV) and intravascular ultrasound
- Management of MTS consists of anticoagulation for acute DVT to prevent recurrence, percutaneous catheter-directed thrombolysis, angioplasty and stent placement (5)
- Folate deficiency which is an independent risk factor for venous thrombosis

## References

1. Virchow R. Uber die Erweiterung Kleiner Gefasse. Arch Path Anat 1851;3:427
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5. Kolbel T., Lindh M., Akesson M., Wasselius J., Gottsater A., et al. “Chronic iliac vein occlusion: midterm results of endovascular recanalization”. J Endovasc Ther 2009;16: 483-449.
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