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A Rare Finding of May-Thurner Syndrome in an 88-Year-Old Female: A Case Report

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ABSTRACT

Deep vein thrombosis (DVT) is a major contributor to cardiovascular morbidity and mortality and may arise secondary to anatomical abnormalities such as May-Thurner syndrome (MTS). We present the case of an 88-year-old female with multiple comorbidities who presented with acute left lower extremity swelling and pain following recent air travel. Imaging confirmed extensive thrombosis extending from the popliteal to the common iliac vein, with significant venous compression consistent with MTS. The patient underwent successful mechanical thrombectomy, balloon angioplasty, and venous stent placement, resulting in restoration of venous flow without immediate complications. This case highlights the importance of rapid diagnosis and intervention in extensive iliofemoral DVT and underscores the potential for delayed clinical recognition of MTS in elderly patients. Earlier recognition of underlying anatomical risk factors may improve outcomes, guide procedural planning, and help prevent recurrent thrombotic complications in high-risk populations.

***Keywords:** May-Thurner Syndrome; Interventional Radiology; Intravenous Ultrasound; Anticoagulation; Deep Vein Thrombosis; Femoral Vein.*

Introduction

Deep vein thrombosis (DVT) is a blood clot that forms within the deep veins, most commonly in the lower extremities, but it may also occur in the upper extremities, mesenteric veins, and cerebral venous system [1]. DVT is part of the broader spectrum of venous thromboembolism (VTE), which remains an important cause of cardiovascular morbidity and mortality [1]. While many cases of DVT are associated with acquired risk factors such as immobility, recent travel, malignancy, surgery, or hypercoagulable states, anatomical venous compression syndromes may also contribute to thrombus formation [2].

May-Thurner syndrome, also known as iliac vein compression syndrome, is characterized by impaired venous outflow caused by extrinsic compression of the left common iliac vein, most often by the overlying right common iliac artery against the lumbar spine [2]. This chronic pulsatile compression can lead to endothelial injury, venous stasis, and the development of intraluminal fibrotic changes or venous spurs, thereby predisposing patients to left-sided iliofemoral DVT [2,3]. Although MTS is classically described in younger to middle-aged women, it may remain clinically silent for years and present later in life when additional thrombotic risk factors are present [3,4].

Diagnostic evaluation often begins with duplex ultrasound in patients presenting with unilateral leg swelling or pain; however, ultrasound may be limited in assessing the iliac veins and pelvic venous anatomy [5]. Cross-sectional imaging with CT or MR venography can help identify iliac vein compression and thrombus extension, while intravascular ultrasound (IVUS) provides detailed intraluminal assessment of stenosis severity, lesion length, and vessel diameter during endovascular intervention [5,6]. IVUS has become particularly valuable in guiding venous stent sizing and placement, as venography alone may underestimate the degree of iliac vein compression [6,7].

Treatment of MTS-associated iliofemoral DVT depends on symptom severity, thrombus burden, bleeding risk, and the presence of chronic venous obstruction. Management options include anticoagulation, catheter-directed thrombolysis, pharmacomechanical thrombectomy, balloon angioplasty, and venous stent placement [8,9]. In patients with extensive symptomatic iliofemoral DVT and an underlying compressive lesion, endovascular thrombus removal followed by stenting may restore venous outflow, reduce obstruction, and decrease the risk of recurrent thrombosis or post-thrombotic morbidity [8-10].

This article presents the case of an 88-year-old female who developed extensive left lower extremity DVT and was subsequently found to have May-Thurner syndrome. She was treated with mechanical thrombectomy, balloon angioplasty, and venous stent placement, resulting in restoration of venous flow without immediate procedural complications.

Case Presentation

The patient was an 88-year-old female with a past medical history significant for coronary artery disease, stage 3 chronic kidney disease, hypertension, hyperlipidemia, and type 2 diabetes. The patient initially presented to the emergency department with a 3-day history of left lower extremity swelling and pain. She had recently traveled by air from a nearby state. Otherwise, she denied chest pain, shortness of breath, abdominal pain, nausea, or vomiting.

On evaluation by the emergency department physician, the patient was noted to have significant left-sided lower extremity swelling. Bedside point-of-care ultrasound demonstrated an occlusive thrombus. A formal venous ultrasound was subsequently performed and confirmed an occlusive thrombus involving the common femoral, saphenous, and femoral veins. Based on the extensive thrombotic burden, the patient was started on a heparin infusion, and interventional radiology was consulted. CT imaging of the abdomen with intravenous contrast was then performed and demonstrated a probable thrombus (Figure 1).

CT angiography of the lower extremities demonstrated distention of the left popliteal vein with an intraluminal filling defect consistent with DVT, extending into the femoral and common femoral veins, with further involvement of the left external and common iliac veins (Figure 2). There was significant compression of the left common iliac vein by the aortic bifurcation, consistent with May-Thurner syndrome. A questionable filling defect versus inflow artifact was noted in the right popliteal, femoral, and common femoral veins, while the right common and external iliac veins, inferior vena cava (IVC), portal vein, and hepatic veins remained patent. The abdominal aorta, mesenteric, renal, iliac, and common femoral arteries were widely patent, as were the superficial femoral and popliteal arteries bilaterally. The proximal trifurcation was patent, with occlusion versus diminutive caliber of the posterior tibial arteries. Overall, these findings were consistent with extensive left lower extremity DVT extending from the popliteal vein to the common iliac vein, with associated May-Thurner compression requiring endovascular intervention.

Figure 1: *Patient CT with intravenous contrast demonstrating a probable thrombus.*

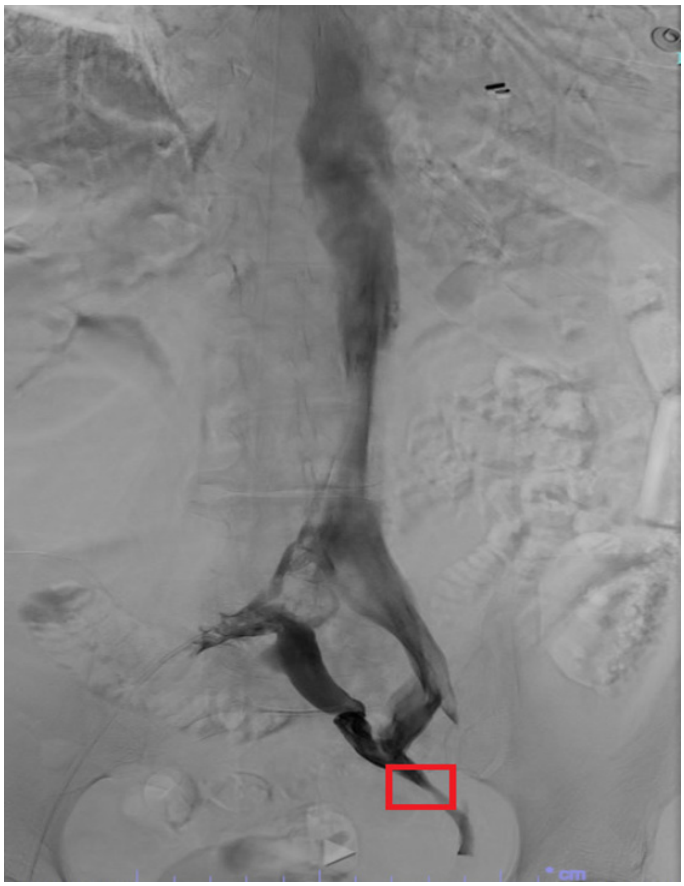

Figure 2: *CT angiogram demonstrating decreased blood flow distal to the vascular compression.*

The risks, benefits, and alternatives of the procedure were discussed in detail with the patient. All questions were answered, and informed consent was obtained. The patient was brought to the interventional suite, where a pre-procedure time-out was performed. She was positioned prone on the angiography table, and ultrasound guidance was used to evaluate potential access sites and confirm the presence of popliteal vein thrombus, with permanent image recording obtained. The thrombus was successfully crossed. Venography demonstrated extensive thrombus throughout the left lower extremity venous system, with compression at the level of the common iliac vein extending into the distal IVC.

Mechanical aspiration thrombectomy was performed in multiple passes, and post-thrombectomy venography demonstrated resolution of filling defects. IVUS was then performed, revealing greater than 50% stenosis involving the distal IVC, left common iliac vein, and left external iliac vein (Figure 3). Balloon angioplasty was performed using a 12 mm balloon at the sites of narrowing, followed by repeat IVUS evaluation. Final venography demonstrated excellent contrast progression through the left iliofemoral venous system into the IVC, with no residual stenosis.

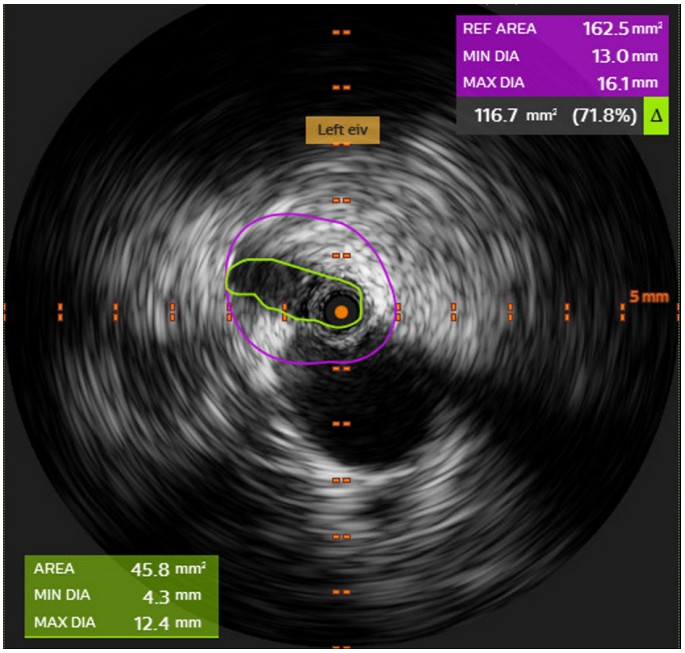

Figure 3: *Intravascular ultrasound of the patient's left external iliac vein demonstrating greater than 50% stenosis.*

The patient tolerated the procedure well and was transferred to recovery without immediate complications. Overall, the procedure resulted in successful mechanical thrombectomy from the left popliteal vein to the left common iliac vein, successful balloon angioplasty of the left common iliac vein, and successful stenting of the left common and external iliac veins, with restoration of normal venous outflow. Following discharge, the patient was instructed to take Apixaban 10 mg PO twice daily for 7 days, then 5 mg PO twice daily for 6 months. She was then instructed to follow up with the interventional radiology clinic for monitoring of symptom improvement and any potential complications such as rethrombosis or edema.

Discussion

This case demonstrates an uncommon presentation of May-Thurner syndrome in an elderly patient who presented with extensive acute left lower extremity DVT. DVT is a common emergency department diagnosis; however, extensive iliofemoral thrombosis should prompt consideration of proximal venous obstruction, particularly when thrombosis is predominantly left-sided. If untreated, extensive DVT may lead to serious complications, including pulmonary embolism, recurrent thrombosis, venous hypertension, phlegmasia, and post-thrombotic syndrome [1,8]. In this patient, rapid recognition, anticoagulation, cross-sectional imaging, and timely interventional radiology consultation allowed for definitive treatment before the development of major complications.

Although May-Thurner syndrome is often associated with younger women, this case is notable because the diagnosis was made in an 88-year-old patient. Late presentation may occur when anatomical compression remains clinically silent until another provoking factor increases thrombotic risk. In this case, recent air travel may have contributed to venous stasis, while the patient's age and comorbidities likely increased her baseline risk for thrombosis. This highlights the importance of maintaining a broad differential diagnosis in elderly patients with extensive unilateral left-sided DVT rather than attributing the clot solely to age or immobility.

Conclusion

May-Thurner syndrome is an important anatomic cause of left-sided iliofemoral DVT and may remain clinically silent until additional thrombotic risk factors precipitate acute presentation. This case is notable because MTS was identified in an 88-year-old female, emphasizing that advanced age should not exclude consideration of underlying iliac vein compression in patients with extensive unilateral left lower extremity DVT. Prompt diagnosis with ultrasound and CT imaging, followed by IVUS-guided endovascular intervention, allowed for successful thrombectomy, angioplasty, and venous stent placement with restoration of venous outflow. Early recognition of MTS is important because anticoagulation alone may not correct the underlying venous obstruction. Further research is needed to better define screening considerations, post-stent surveillance strategies, and optimal antithrombotic regimens, particularly in elderly patients and those with multiple comorbidities.

Statement of Informed Consent

Informed consent was obtained from the patient described in this case report.

Conflicts of Interest

The authors declare no conflict of interest and received no specific funding for this work.

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