VOLUME - 10, ISSUE - 04, APRIL- 2021 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

General Surgery

A RARE CASE OF MAY- THURNER SYNDROME

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ABSTRACT May-Thurner syndrome (MTS) is a venous outflow obstruction disorder characterized by compression of the left common iliac vein by an overriding right common iliac artery. MTS primarily affects young to middle-aged women, although many patients remain entirely asymptomatic.We report a unique case of a 25 -year-old male who presented with MTS-related multiple varicosities in left lower limb.

KEYWORDS : May-thurner Syndrome, Iliac Vein Compression, Varicose Veins

Introduction

May–Thurner syndrome (MTS) is caused by compression of the left common iliac vein by the right common iliac artery, resulting in symptoms of venous obstruction, insufficiency, and thrombosis. It is also known as iliac vein compression syndrome or Cockett's syndrome.1 McMurrich initially reported association of common iliac vein compression with increased incidence of left lower extremity deep vein thrombus, thought to be congenital. Ehrich postulated acquired degenerative obstruction at the origin of the left common iliac vein. Subsequently, May and Thurner described compression of the left common iliac vein from the right common iliac artery, resulting in mural spur formation.The left common iliac vein has a more transverse or horizontal course compared with the right one and can be compressed by the right common iliac artery against the lumbar spine with each arterial pulsation. This results in increased pressure within the vein and results in symptoms of venous insufficiency, such as leg edema and pain. This compression leads to the back pressure causing varicosities of the lower limb. Chronic repetitive compression leads to secondary venous luminal changes and mural spur formation (secondary to elastin and collagen deposition) with subsequent venous stenosis.

Case Report

A 25 year old male came with complaints of multiple tortuous, dilated veins over the left lower limb involving lateral and posterior aspect of thigh and leg. Varicosities extend upto the left inguinal region. Skin discolouration present from the upper thigh upto the upper part of the leg. A ulcer of 2x2 cm present over the medial side of the foot.

Brodie Trendelenberg Test : SFJ and perforator incompetence.

USG Arterial and Venous Doppler: Suggestive of Varicose Veins with SFJ and Perforator incompetence.

CT venogram : showed narrowing of left common iliac vein.

Fig 1- Clinical image showing dilated veins along with discolouration of the skin

Fig 2 – Sagittal section of CT venogram showing the blockage of iliac veins

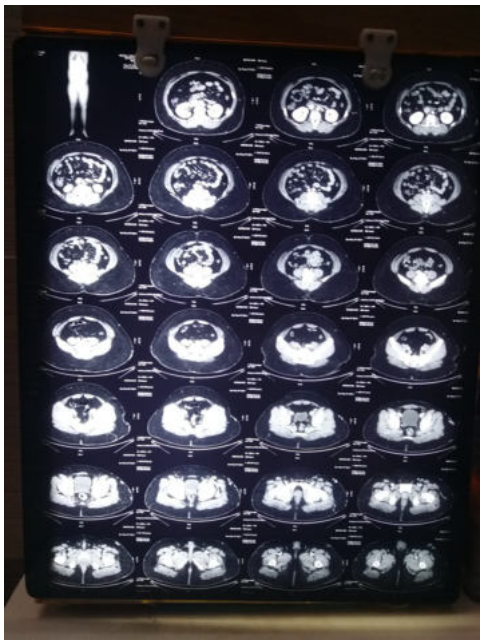

Fig 3 – Coronal section of the CT venogram

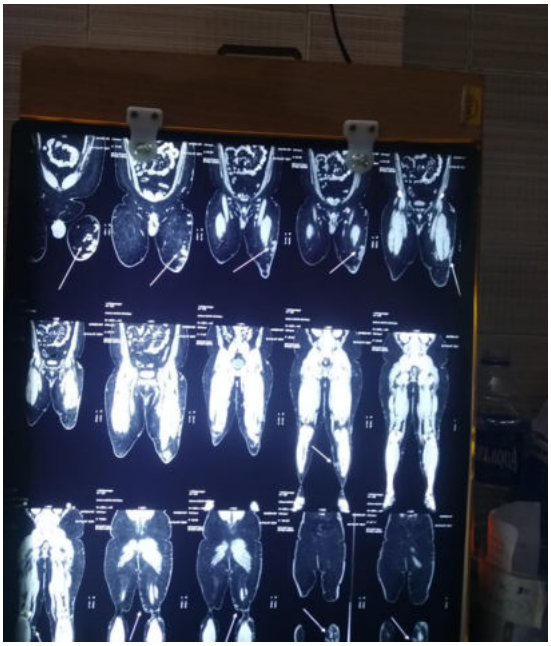

Fig 4 – Sagittal section of the CT venogram with arrow pointed showing the Blockage of iliac vein

Discussion

May-Thurner syndrome (MTS) is a venous outflow obstruction disorder characterized by compression of the left common iliac vein by an overriding right common iliac artery [1]. The condition was first described in 1957, when May and Thurner discovered that 22% of 430 cadavers possessed this unique anatomic substrate . A more recent retrospective analysis has supported this anatomic incidence, having identified significant (i.e., >50%) left common iliac vein compression in 24% of asymptomatic individuals . However, the clinical incidence of MTS is relatively uncommon, reportedly occurring in only 2%-5% of patients who present with lower extremity venous disorder . This discrepancy between anatomic and clinical incidence thus demonstrates that left common iliac vein compression is necessary, but not sufficient, to cause symptomatic MTS.

At the same time, it is also likely that MTS-related DVT may be underreported. MTS primarily affects young to middle-agedmen. These more common causes of DVT can obscure the precise anatomic finding of MTS by deterring further workup after a confirmed DVT diagnosis [6]. The fact that there is a 55.9% predominance for left-sided DVT may also support the idea of an underreported prevalence [7]. An accurate MTS diagnosis is crucial, as failure to correct the anatomic substrate can lead to DVT recurrence, postthrombotic syndrome, and additional complications, including pulmonary emboli, chronic vein stasis, and iliac vein rupture [3, 6, 8, 9].

MTS presentation has two common variants. The more common variant involves DVT either provoked (i.e., with a discernible etiology) or unprovoked [10]. The less common variant involves progressive pain, unilateral left leg edema, varicose veins, and venous ulcers without antecedent acute thrombosis [10]. At the anatomic level, MTS is characterized by compression of the left iliac vein by the right iliac artery,although variations have been reported. These include compression of the right iliac vein by the left iliac artery; compression of the inferior vena cava by the right iliac artery; and concurrent compression of the left iliac vein, right iliac vein, and inferior vena cava by the right iliac artery . Extensive pelvic collateral venous drainage is an additional hallmark of MTS . However, many patients with May-Thurner anatomy remain entirely asymptomatic and may only become symptomatic upon trauma or major surgery [2, 3, 5].

A proper diagnosis of MTS should include imaging demonstration of pelvic venous compression and venous collateralization, as well as clinical manifestations such as DVT, leg edema, and varicose veins. Collateral veins often form in the pelvis, the majority of which emerge from the ipsilateral internal iliac vein, through the parametrial and presacral plexus, to the contralateral internal iliac vein.

Computed tomography venography and magnetic resonance venography are two newer, minimally invasive modalities for evaluating venous architecture and estimating the degree of stenosis; however, cost, contrast, and availability are often significant considerations [3, 10]. Venography can help identify three common angiographic patterns in MMT. These include focal stenosis or collateralized short-segment occlusion of the left common iliac vein, acute iliofemoral venous thrombosis with the underlying lesion revealed after successful thrombolysis, and chronic isolated thrombosis of the left common and external iliac veins with collaterals arising from the common femoral vein. Intravascular ultrasonography (IVUS) and hemodynamic pressure measurements are also useful for confirming an MTS diagnosis [3]. In particular, IVUS has been recognized for its invaluable role in stent selection, deployment, and evaluation [3, 4].Today, MTS patients rarely undergo highly invasive treatment [4]. Whereas surgical techniques have been associated with high morbidity and mixed patency rates, endovascular techniques have found great success with few operative risks . Endovascular management often begins with venography and IVUS, which help confirm MTS and identify the degree of stenosis and pelvic venous collaterals. Based on the findings, thrombolysis and/or thrombectomy can be performed with or without inferior vena cava filter placement, followed by angioplasty and stenting of the left iliac vein [3, 4]. Percutaneous transluminal angioplasty without subsequent stent placement has yielded low patency rates, which suggests that the chronic compression of MTS cannot be relieved by temporary balloon angioplasty. As a result, MTS treatment almost always requires high radial force stents . A number of studies have demonstrated the safety and efficacy of catheter-directed thrombolysis and subsequent stent placement, with high rates of initial technical success as well as one-year patency rates [5].

Prior to addressing our patient's lower abdominal and left groin varicosities, we decided to first correct the underlying pathology by recanalizing and stenting the left iliac vein. Treating the collateral veins prior to correcting the underlying vein compression could have resulted in worse symptoms and outcome. Since the patient's varicosities did not completely resolve, and after continued iliac vein stent patency had been confirmed, we performed successful stab phlebectomy of the large abdominal varicosity and ultrasound-guided sclerotherapy of the feeding vein and left groin varicosities. We recommend a thoughtful approach in similar cases of collateral varicosities.

Following intervention, MTS patients are usually placed on a 4- to 6-week regimen of aspirin (81-325 mg daily) and clopidogrel (75 mg daily) to prevent stent thrombosis, after which they continue on one of the two antiplatelet agents indefinitely [10]. Patients who present with acute DVT and MTS are initiated on anticoagulation therapy for 3-6 months [10]. For patients with documented thrombophilia, long-term anticoagulation therapy may be considered [10]. There has been no consensus on postintervention antithrombotic therapy for MTS patients. Our current approach utilizes direct oral anticoagulant and single antiplatelet therapy for three months, before stopping anticoagulation and continuing

aspirin (81 mg daily) on the long term if repeat imaging confirms stent patency.

Our case highlights the challenges of diagnosing MTS in young men. It also discusses a treatment approach for an unusual presentation of MTS-related postthrombotic syndrome.

Conclusions

May-Thurner syndrome is a rare cause of left lower limb varicosities; however, it is underdiagnosed. In patients presenting with left leg varicose veins without obvious etiology, especially in young men, a high clinical suspicion is needed for prompt diagnosis of MTS. Endovascular intervention with stenting remains the first choice for successful outcomes. Early recognition and aggressive treatment are vital for symptomatic relief and to prevent recurrent thrombosis and postthrombotic syndrome.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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