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A Case Study of Secondary Varicositis Associated with May-Thurner Syndrome: Evaluation and Therapeutic Approach

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Abstract:

Varicose veins are a common condition in developed societies, often associated with valvular dysfunction but also secondary to other underlying pathologies. Secondary varicositis, characterized by superficial vein dilation due to venous obstruction or incompetence, presents significant challenges in patient management. May-Thurner syndrome, characterized by left common iliac vein compression by the overlying right common iliac artery against the vertebral body, is a noteworthy etiology contributing to secondary varicositis. Diagnosis involves clinical assessment and imaging studies, such as MR venography or duplex ultrasonography. Management strategies focus on symptom alleviation, disease progression prevention, and venous obstruction addressing. Conservative measures, including compression stock therapy, are initial treatments, with endovascular stenting or surgical correction reserved for refractory cases. This case report illustrates a comprehensive approach to managing secondary varicositis with May-Thurner syndrome, emphasizing early recognition, accurate diagnosis, and tailored intervention for optimal patient outcomes.

Keywords: Secondary varicositis, May-Thurner syndrome, compression therapy, conservative management, endovascular stenting, venous obstruction

Introduction:

Varicose veins are among the most common ailments of the affluent nations. Primarily it is considered to be caused by valvular dysfunctions, but it may be secondary to other pathologies.[1] Secondary varicositis, characterized by the dilation and tortuosity of superficial veins secondary

to underlying venous obstruction or incompetence, presents a challenging clinical scenario with significant implications for patient management.[2] Among the various etiologies contributing to secondary varicositis, May-Thurner syndrome emerges as a noteworthy consideration, particularly in cases where compression of the left common iliac vein by the overlying right common iliac artery against the vertebral body is suspected.[3] May-Thurner syndrome, also recognized as Cockett syndrome, entails anatomical compression of the left common iliac vein, leading to venous stasis, increased venous pressure, and subsequent development of varicosities in the left lower limb. The clinical presentation of secondary varicositis secondary to May-Thurner syndrome often includes symptoms such as lower limb discomfort, heaviness, and visible dilated veins.[4] Diagnosis typically involves a combination of clinical assessment and confirmatory imaging studies, such as MR venography or duplex ultrasonography. Management of secondary varicositis associated with May-Thurner syndrome necessitates a comprehensive approach aimed at alleviating symptoms, preventing disease progression, and addressing underlying venous obstruction.[5] Conservative measures, including compression therapy with compression stockings, serve as a cornerstone in the initial management of symptoms.[6] However, in cases of refractory symptoms or evidence of significant venous obstruction, more invasive interventions such as endovascular stenting or surgical correction of the vascular anomaly may be warranted to optimize patient outcomes.

This case report aims to present a comprehensive evaluation and management approach for secondary varicositis with suspected May-Thurner syndrome, highlighting the importance of early recognition, accurate diagnosis, and appropriate intervention in optimizing patient care and outcomes.

Case study

A 21-year-old male, sought medical attention due to symptoms suggestive of secondary varicositis affecting both of his lower extremities, notably involving the great saphenous vein. He described experiencing discomfort and heaviness in his lower limbs, accompanied by the visual observation of dilated veins.

Symptoms and Examination:

During the examination, patient reported sensations of discomfort and heaviness primarily in his lower limbs. These symptoms were typical presentations associated with varicose veins, indicating venous insufficiency and impaired circulation. Additionally, visible dilated veins were

noted upon inspection of his lower extremities, particularly evident in the area of the great saphenous vein. These dilated veins were characteristic of varicosities, indicating venous congestion and increased pressure within the affected vessels.

Diagnostic Assessment:

In order to further evaluate the extent and underlying pathology of patients' symptoms, duplex ultrasonography was performed. This imaging modality allows for the visualization of blood flow within the veins and can identify the presence of thrombus or other abnormalities. Notably, no significant findings suggestive of complications such as groin hematoma or pseudoaneurysm were observed during the examination. These findings suggested that the varicosities present in patients' lower extremities may not be associated with acute vascular complications. The duplex ultrasonography further revealed no evidence of thrombus within the common femoral vein. This finding was significant as it ruled out deep vein thrombosis, a potentially serious complication of venous insufficiency. Additionally, it confirmed the absence of acute vascular obstruction in the lower extremities, supporting the diagnosis of secondary varicositis. The presentation of symptoms, including lower limb discomfort, heaviness, and visible dilated veins, along with the absence of significant vascular complications on examination, suggested a diagnosis of secondary varicositis affecting both lower extremities, particularly involving the great saphenous vein. The negative findings on duplex ultrasonography, specifically the absence of thrombus in the common femoral vein, provided further support for this diagnosis and helped to exclude other potential vascular pathologies.

MR Venography:

The MR venography was conducted to assess patients' venous anatomy and identify any underlying pathologies contributing to his symptoms. The findings revealed several key observations. Firstly, there was significant antero-posterior compression observed in the ostioproximal segment of the left common iliac vein, situated between the proximal right common iliac artery and the vertebral body. Additionally, mild compression was noted at the site where the left common iliac vein crossed with the left common iliac artery. Moreover, dilation of the left external iliac vein and common femoral veins was evident on the MR venography, indicating increased venous pressure and impaired venous return in these vessels. Further, multiple venous collaterals were observed in various regions, including the proximal left thigh, anterior abdominal wall, and left anterior scrotal wall. These collateral vessels typically develop

in response to venous obstruction or insufficiency and serve to bypass occluded or incompetent veins. Importantly, no evidence of thrombus was detected in the inferior vena cava (IVC), right iliac veins, or right common femoral veins, ruling out the presence of deep venous thrombosis (DVT) in these vessels. Additionally, the bilateral renal veins appeared normal in caliber and contrast opacification, suggesting normal venous drainage from the kidneys and excluding renal vein thrombosis or compression as contributing factors to patients' symptoms. Overall, the MR venography findings suggested a fisio May-Thurner morphology, characterized by compression of the left common iliac vein between the right common iliac artery and the vertebral body, along with associated venous collaterals. Despite the absence of deep venous thrombosis, the presence of venous compression, dilatation, and collateralization supported the diagnosis of May-Thurner syndrome. Further management likely involved interventions aimed at relieving venous obstruction and improving venous drainage to alleviate patients' symptoms and prevent complications associated with secondary varicositis.

Treatment Plan:

Upon diagnosis of secondary varicositis secondary to May-Thurner syndrome, a comprehensive treatment plan was formulated to address patients' symptoms and prevent disease progression. Conservative management with compression stockings was recommended as the initial approach. The rationale behind this recommendation lies in the ability of compression stockings to improve venous return, reduce venous congestion, and alleviate symptoms associated with venous insufficiency. By applying graduated pressure to the lower limbs, compression stockings promote better blood flow towards the heart, thereby reducing swelling, discomfort, and the risk of complications such as venous ulcers. Patient was advised to wear compression stockings consistently, especially during periods of prolonged standing or sitting, to maximize their therapeutic benefits. Furthermore, he was instructed on proper fitting and care of the stockings to ensure optimal efficacy and comfort. The importance of adherence to the treatment regimen was emphasized, as consistent use of compression stockings plays a crucial role in achieving symptom relief and preventing disease progression. In addition to conservative measures, patients' treatment plan included a holistic approach to managing his condition. Lifestyle modifications, such as regular exercise, elevation of the legs, and avoiding prolonged periods of immobility, were recommended to complement the effects of compression therapy. These

lifestyle changes were aimed to promote healthy venous circulation and minimize exacerbating factors that contribute to venous insufficiency.

Follow-up Plan:

Following initiation of conservative management, patient was scheduled for regular follow-up visits to monitor his response to treatment and assess for any changes in clinical status. During these follow-up appointments, the effectiveness of compression therapy in alleviating symptoms and improving venous circulation was evaluated through subjective reports from the patient and objective assessments, such as measurement of leg circumference and examination of venous ulcers, if present. Repeat imaging studies, including venography or ultrasound, were considered if there was a significant change in clinical status or if further evaluation of venous anatomy and hemodynamics was warranted. These imaging studies provided valuable information regarding disease progression, response to treatment, and the need for additional interventions. In addition to clinical assessments, patient education and counseling were integral components of the follow-up plan. Patient was provided with ongoing support and guidance on adherence to compression therapy, lifestyle modifications, and strategies for preventing complications associated with venous insufficiency. Overall, the follow-up plan aimed to optimize patients' long-term outcomes by ensuring appropriate management of his condition, monitoring for potential complications, and addressing any evolving needs or concerns that may arise during the course of treatment.

Discussion:

May-Thurner syndrome, alternatively referred to as Cockett syndrome, is characterized by the compression of the left common iliac vein due to the overlying right common iliac artery against the vertebral body.[7-9] This anatomical aberration predisposes individuals to develop venous hypertension in the left lower limb, resulting in a spectrum of symptoms ranging from mild discomfort to significant morbidity.[10] The ensuing venous insufficiency typically presents with manifestations such as swelling, pain, and visible varicosities in the affected limb.

Diagnosing May-Thurner syndrome typically involved a multifaceted approach combining clinical assessment with confirmatory imaging studies. Patient history and physical examination findings yielded valuable clues suggestive of venous obstruction or incompetence. However, definitive diagnosis relies on imaging modalities such as venography or ultrasound, which enable visualization of anatomical abnormalities and assessment of venous

hemodynamics. Management strategies for May-Thurner syndrome aimed to relieve venous obstruction, alleviate symptoms, and prevent associated complications. Conservative measures constituted the foundation of treatment, encompassing compression therapy, lifestyle modifications, and pharmacological interventions. Notably, compression therapy assumed a pivotal role in enhancing venous circulation and providing symptomatic relief. In cases where conservative measures are insufficient, more invasive therapeutic options such as endovascular stenting or surgical correction of the vascular anomaly remained viable alternatives. Nonetheless, the patient's parameters demonstrated improvement during the follow-up period, underscoring the favorable response to conservative management with compression stockings.

Conclusion:

The presented case underscored the significance of employing conservative management strategies, particularly compression stockings, in the treatment of varicositis secondary to May-Thurner syndrome. Although conservative measures frequently prove effective in mitigating symptoms and impeding disease advancement, instances of symptomatic or progressive disease may necessitate further interventions. It is imperative to adopt an individualized treatment approach that considers the severity of symptoms and underlying venous pathology to achieve optimal patient outcomes. Regular follow-up and diligent monitoring are essential components of the management strategy, facilitating the assessment of treatment efficacy and enabling adjustments as warranted.

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