

A 22-Year-Old Woman with Diagnosis of May-Thurner Syndrome Managed with Endovenous Stent Implantation: Case Report

May-Thurner Sendromu Tanısı Olan 22 Yaşındaki Kadının Endovenöz Stent İmplantasyonu ile Tedavisi

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ABSTRACT May-Thurner syndrome (MTS) or iliac vein compression syndrome is a rare clinical condition resulting from the compression of left common iliac vein by other tissues. Diagnosis of MTS is generally based on the history of the patient, physical examination and radiologic findings upon clinical suspicion. We hereby describe an unusual presentation of MTS. A 22-year-old woman complained of unilateral leg swelling that had been present for ten years without any other symptoms of specific disease. There were no other findings like deep vein thrombosis, chronic venous ulcers or pulmonary embolism. The patient was suspected for MTS during physical examination, and radiological imaging confirmed the diagnosis. She was treated with bare metal stent implantation.

Keywords: Iliac vein; stents; endovascular procedures

ÖZET May-Thurner sendromu (MTS) ya da iliak ven kompresyonu sendromu, sol ana iliak venin diğer dokular tarafından kompresyonu sonucu ortaya çıkan, nadir bir klinik entitedir. MTS tanısı; genellikle klinik şüphe, fizik muayene ve radyolojik bulgulara dayanır. Biz sol iliak vene stent yerleştirerek tedavisini yaptığımız bir MTS vakasını paylaşmak istedik. Yirmi iki yaşındaki kadın hastanın yaklaşık on yıldır devam eden tek taraflı bacak şişliği vardı. Derin ven trombozu, kronik venöz ülser veya pulmoner emboli gibi başka bulgular yoktu. MTS tanısı fizik muayeneke şüphe ve radyolojik görüntüleme ile tanımlandı. Hasta metal stent yerleştirilerek tedavi edildi.

Anahtar Kelimeler: İliak ven; stentler; endovasküler prosedürler

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May-Thurner syndrome (MTS) or iliac vein compression syndrome occurs due to compression of left common iliac vein by right common iliac artery, anterior to lumbar vertebrae.¹ In this syndrome, there is increased risk for deep vein thrombosis (DVT), chronic venous stasis ulcers, and pulmonary embolism.¹ These patients have persistent left lower extremity swelling with or without deep vein thrombosis. The risk of DVT in the left lower extremity increases three to eight fold in MTS.²

Upon clinical suspicion, the diagnosis of MTS can be confirmed by iliac venography, which is the gold standard for the diagnosis of MTS.³ There are many different treatment options like conservative management, endovascular techniques, and surgery.

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CASE REPORT

A 22-year-old woman admitted to our clinic with left leg swelling that had been present for 10 years. On physical examination, the diameter of left lower extremity was significantly larger than that of right lower extremity. There were no other symptoms or findings of DVT, or chronic venous stasis. First, bilateral lower extremity venous Doppler ultrasonography was performed. There were no findings of lymphedema, deep venous thrombosis or venous insufficiency on Doppler examination. After Doppler ultrasonography, iliac venography was planned. There was stagnation of blood in the left common iliac vein below the level of compression. This compression was caused by right iliac artery. Venous drainage below the occlusion via well-developed pelvic collateral veins was demonstrated on the venography (Figure 1). Venography revealed that right iliac vein was normal and patent. Finally, MTS was diagnosed based on clinical presentation and venography findings. After obtaining informed consent of the patient, we planned to proceed with endovenous stent implantation for treatment. After a micro-puncture, 6F sheath was placed into both right and left common femoral veins, under local anesthesia.

A 40x12 mm Sinus-super Flex Visual 6F (Optimed, Germany) stent was deployed and dilated with the angioplasty balloon across the stenotic segment of the left iliac vein. The blood flow through the stent was seen during venography.

The patient received enoxaparin 0.4 ml twice a day, clopidogrel 75 mg/day, and acetylsalicylic acid 300 mg/day after the procedure. Control computed tomography showed no compression on the iliac vein stent after one year (Figures 2, 3).

DISCUSSION

In this case report, we reported a patient with MTS who was managed with endovascular stent implantation. Patients diagnosed with iliac vein obstruction without DVT, as we described above, can be successfully treated with stent implantation and antiplatelet therapy.

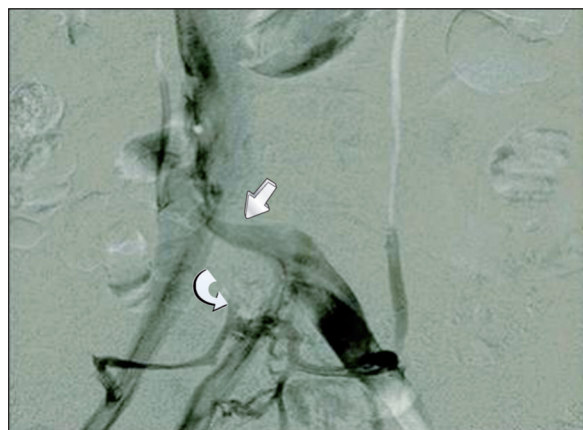


FIGURE 1: Anteroposterior imaging of direct venography. Left common iliac vein compression by right common iliac artery (upper arrow). Contralateral venous drainage via pelvic venous collaterals (lower arrow).

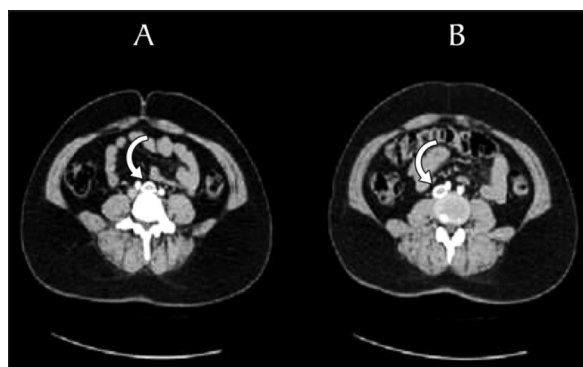


FIGURE 2: Images of pelvic computed tomography. No compression of the iliac vein stent one year after the stent implantation (semicircle arrows).

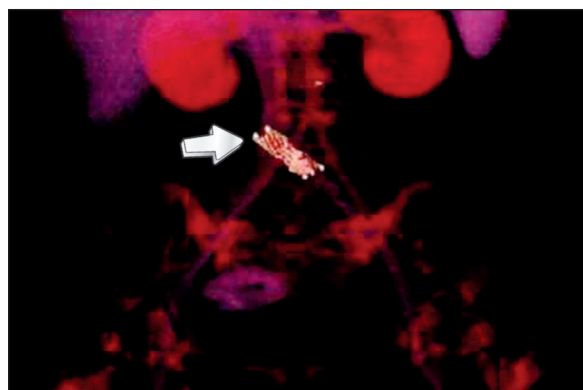


FIGURE 3: Anteroposterior imaging view of maximum intensity projection computed tomography.

According to the autopsy and retrospective computerized tomography studies, the prevalence of anatomical compression of left iliac vein is 22-24%.^{4,5} However, all individuals with this condition do not present with the symptoms of MTS. In

most cases, presence of deep vein thrombosis and/or venous hypertension makes it easy to diagnose this clinical entity. MTS is caused by compression of left common iliac vein by right common iliac artery, and the choice of treatment depends on the presence of deep vein thrombosis. Generally, MTS presents with pain and edema. Deep vein thrombosis can be detected in 77% of the patients.⁶ MTS is usually asymptomatic, but it may cause clinical symptoms at a young age. In early stages, pain and swelling of leg may occur due to compression of iliac artery or external compressions. Clinical presentation varies according to age of the patient and pressure. The development of large pelvic venous collaterals may mask the symptoms at an early age. Pregnancy and postpartum period, dehydration, prolonged immobilization, and oral contraceptive use may cause development of DVT in these patients. Patients can present with acute DVT, or they can present with venous insufficiency symptoms, in the late period.

The patients presenting with deep vein thrombosis can be treated with anticoagulants, catheter based thrombolysis, surgery or stent implantation. As a safe and effective method of treatment, endovenous stent implantation is successfully implemented, particularly in patients who have iliac vein compression syndrome with or without deep venous thrombosis.⁶ Patients who were hospitalized for a long time, undergoing pelvic surgery and using combined oral contraceptives may have more serious complications like pulmonary embolism, rupture of the iliac vein or chronic venous stasis. Hereditary or acquired thrombophilia like factor V Leiden mutation, prothrombin gene mutation, hyperhomocysteinemia and antithrombin III deficiencies are usually identified as underlying causes in young females with deep vein thrombosis.⁷

Most of the studies are concerned with the co-existence of MTS and deep vein thrombosis. Currently, stent implantation is preferred in the treatment of May-Thurner syndrome, and surgical treatment is also an option. Recent studies showed that endovenous stent implantation alone

or combined with surgery became an important treatment option.⁸ Percutaneous endovenous stent implantation as an alternative method to surgery is more practical, and specified as a comfortable and successful option to alleviate symptoms. The mid-term patency rate of stent implantation is high.⁹ Nowadays self-expanded, flexible stents that were made of Nitinol or Elgiloy are used in the treatment of venous diseases. The main features of stents are elimination of the current compression, resistance to thrombosis and flexibility.

Neglen et al. performed stent implantation in 455 legs with stenosis or occlusion. The patency of the stents in the legs without thrombosis was found higher than the legs with thrombosis (89% and 65%, respectively).¹⁰

Within a 3-year-period, Titus et al. used venous self expandable stents in 40 legs of 36 patients. Fifteen of 36 patients with venous occlusion were diagnosed with MTS. The primary patency rates after stent implantation in 6th, 12th and 24th months were 88%, 78.3%, and 78.3%, respectively. The secondary patency rates were found as, 100%, 95%, and 95%, respectively.¹¹

In another study by Raju et al. in 2014, Gianturco Z stent was used as iliac vein stent in 217 legs. Primary and secondary patency rates were found as 69% and 93%, respectively. Gianturco Z stents were found more functional in terms of bilateral stenting.¹²

The data show that stent implantation is recommended in the treatment of venous stenosis or occlusion, in presence or absence of DVT. Although mid-term results are good, a close follow up is recommended in long term due to possibility of hyperplasia.^{10,11}

The patients without deep vein thrombosis, similar to our case, can be treated only with stent implantation in addition to pharmacological treatment. There is no consensus about the treatment of MTS due to low incidence and sporadic occurrence of the disease. Most of the researchers found the patency rate of stents over 95% after one year.⁹

In our case, the patient received acetylsalicylic acid and clopidogrel after stent implantation. One year later, the stent was patent on computerized tomography. The patient had no further symptoms like edema.

MTS is a disease that occurs especially in women and necessitates aggressive treatment. Ag-

gressive surgery or endovenous stent implantation are treatment options with comparable results in patients without deep vein thrombosis who do not need anticoagulant treatment.

Conflict of Interest

Authors declared no conflict of interest or financial support.

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