May-Thurner syndrome

May-Thurner syndrome (Cockett's syndrome, Iliac vein compression syndrome, Iliocaval compression syndrome) arises from **the opression of the left iliac vein** by the ongoing right iliac artery. Oppression occurs most often in the L_5 area.

Pelvic vein compression was first described by Virchow, but May and Thurner determined the anatomical basis and variations of this condition already in 1957.

Aetiology and incidence

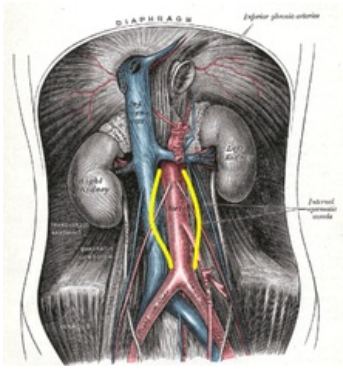
Chronic trauma to the venous wall, caused by the pulsation of the adjacent artery, leads to the accumulation of elastin and collagen in the wall and to local intimal proliferation, which results in the formation of **fibrous synechiae** (so-called spurs). There is a hemodynamically significant barrier to the outflow of venous blood from the limb and there is a gradual closure of the venous lumen and the development of **deep vein thrombosis**. In addition to mechanical damage to the vessel wall, most patients are diagnosed with **hypercoagulability**.

Although compression of the vena iliaca sinistra is the most common form of May-Thurner syndrome, other variants have been described:

- oppression of the left common iliac vein by the left internal iliac artery
- oppression of the right common iliac vein by the right internal iliac artery
- oppression of the inferior caval vein by the right common iliac artery

The exact incidence of May-Thurner syndrome is unknown, but occurs in 18-49% of patients with left lower limb DVT (USA).

Symptomatology



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Symptoms of May-Thurner syndrome are like the manifestations of DVT and include:

- **unilateral edema and lower limb pain**
- **claudication**
- changes resulting from **post thrombotic syndrome**:

  – skin hyperpigmentation
  – varicose veins (varixes)
  – chronic limb pain, feeling of pressure and heaviness
  – phlebitis
  – shin ulcers

A typical patient is a **young woman** in her 20s or 30s after long-term immobilisation or pregnancy.

However, the course of the disease is often **asymptomatic**. Kibbe et al. used CT scans to determine the occurrence of left common iliac vein oppression in an asymptomatic population. They found that 2/3 of all patients enrolled in the study had at least 25% compression. Based on this research, the authors concluded that oppression of the left iliac common vein may be a normal anatomical finding.

Diagnostics

The diagnosis of the syndrome is based mainly on **clinical signs and anamnestic data** obtained from the patient.

Imaging methods are other secondary tests that significantly contribute to the correct diagnosis. **Doppler ultrasonography** captures deep vein thrombosis in the iliac vessels, but is unable to show vein compression. **CT, NMR and MRV (magnetic resonance venography)** give excellent results and allow to view the site of stenosis, thrombus size, degree of obstruction and the topography of the environment. We indicate ascending phlebography as the gold standard of diagnosis only if we consider initiating interventional treatment.

Therapy

The treatment of **symptomatic May-Thurner syndrome** has seen a significant shift in recent years from open surgery to endovascular treatment.

The aim of the therapy is to remove the created thrombus and thus prevent post-thrombotic syndrome, also to correct the oppression of the left pelvic vein, which is the origin of the disease. In the past, several treatments have been developed, such as a venous bypass by an autologous vein, the creation of a tissue loop to elevate the cruciate artery, retroposition of the iliac artery, and excision of the intraluminal thrombus, followed by venoplasty.

The basis of current therapy is either **combination of surgical and endovascular approach** or **exclusively endovascular treatment**.

The first step in therapy is *thrombectomy*. In particular, local thrombolysis by urokinase or t-PA is used by inserting a catheter into the site of obstruction, which reduces the risk of major bleeding, which is a complication of systemic thrombolysis. An alternative is mechanical thrombolysis.

The second step is **angio plastic surgery** with the insertion of a stent into the occlusion area to prevent possible reocclusion. Patients after thrombectomy and venous stent implantation are routinely on **anticoagulant therapy** for 6 months to minimize the occurrence of restenosis at the stent site.

Source

Links

- May-Thurner syndrome (MTS)-Clevenland clinic (https://my.clevelandclinic.org/health/diseases/17213-may-thurner-syndrome)
- May-Thurner syndrome: a not so uncommon cause of a common condition-PubMed (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3377287/)

References

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- MOUSA, Albeir Y – ABURAHMA, Ali F. May-Thurner syndrome: update and review. *Ann Vasc Surg* [online]. 2013, vol. 27, no. 7, p. 984-95, Available from <https://www.ncbi.nlm.nih.gov/pubmed/23850314>. ISSN 0890-5096 (print), 1615-5947.