

The pelvic congestion syndrome – an overview



What is the pelvic congestion syndrome?

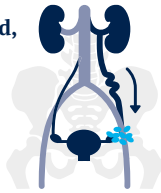
The pelvic congestion syndrome (PCS) is a complex condition associated with chronic pelvic pain (CPP) of more than 6 months duration and pelvic varicosities and / or pelvic venous obstruction predominantly found in premenopausal women. The exact pathophysiology of PCS is unclear and is most likely caused by a multifac-

torial combination of mechanical and hormonal factors including retrograde blood flow, venous hypertension and dilation of veins. Pelvic varicosities can also be asymptomatic, making diagnosis of PCS difficult.



Pathophysiology

Externally non-visible dilated, tortuous & congested veins develop within the pelvis



Valvular insufficiency

- Congenital absence of ovarian vein valves (13–15%)
- Valvular incompetence/dysfunction (35–40%) e.g. due to a 50–60% increase in pelvic vein capacity during pregnancy

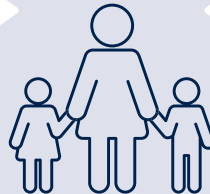
Vein obstruction

Extrinsic compression on draining veins e.g. “Nutcracker-Syndrome” and “May-Thurner-Syndrome”

Pregnancy and hormonal changes

- Mechanical compression of uterus
- Estrogen acts as venous dilator
- Progesterone weakens venous valves
- “Free” veins not surrounded by fascia

Most frequent in multiparous women of reproductive age



Risk factors

- Genetic predisposition
- Anatomy
- Pregnancy
- Pelvic surgery
- Estrogen therapy
- Obesity
- Phlebitis
- Prolonged standing
- Heavy lifting

Clinical presentation Symptoms

Causes chronic pelvic pain and a variety of other symptoms



Lower abdominal & pelvic pain

- Intermittent or constant
- Described as dull ache or fullness
- Persists for more than 6 months
- Often aggravated by prolonged sitting, standing & walking, coitus, menstruation and pregnancy
- Symptoms often disappear in supine position

Associated symptoms

Varicose veins of vulva, perineum, buttocks and lower extremities

Associated non-specific symptoms

Headache, bloating, nausea, vulvar swelling, vaginal discharge, backache, leg fullness, rectal discomfort, urinary urgency, irritable bowels, lethargy, anxiety and depression



Diagnostic workup

Different methods can be applied to establish the diagnosis of PCS. However, it is important to exclude other potential causes of CPP such as endometriosis, fibroids or pelvic inflammatory disease.

Ultrasound Widely available non-invasive imaging modality to visualize the pelvic venous plexus and examination of blood flow in an upright or standing position to avoid decompression of the veins.

Venography Catheter-directed diagnostic gold standard for PCS visualizing veins and identification of incompetence, congestions and retrograde filling when PCS is suspected and noninvasive imaging is inconclusive. Enables direct therapeutic intervention (embolization, sclerotherapy).

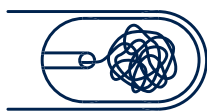
CT and MRI Provide complete examination of pelvic anatomy and better imaging with spatial resolution, but do not allow for therapeutic intervention. Specificity is considered low, but can identify other causes of CPP or coexisting pathologies.

Laparoscopy Performed as part of CPP investigation for detection of endometriosis or adhesions. Less established for PCS diagnosis. Performed in supine position, thereby overlooking pelvic varicosities.



Treatment options

Percutaneous embolization



Trans-catheter embolization with good success and low complication rate independent of the embolization agent used (foam, coils, glue, liquid sclerosants or combinations). Long-term symptom relief for up to 72 months in 60–100% of patients. Ovarian and pelvic vein embolization is considered as standard treatment for PCS.

Surgical treatment



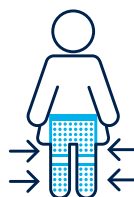
Ovarian vein or pelvic vasculature ligation (laparoscopic or laparotomy approaches) resulted in symptomatic relief in 75% of patients. Hysterectomy and bilateral salpingo-oophorectomy as more radical approach are usually restricted to women who have completed childbearing. A surgical approach does not guarantee a symptomatic relief and has a higher risk for complications.

Medical therapy



Medroxyprogesterone acetate or gonadotropin-releasing hormone analogue goserelin are used to suppress ovarian function or increase venous contraction. There is limited data available, only few clinical trials were conducted and symptomatic relief lasts only for short time, probably due to development of resistance.

Compression therapy*



Conservative treatment with compression shorts, e.g. in combination with stockings can reduce CPP, improve blood flow and reduce insufficiency of perforating veins in some patients.

Take-home message

PCS is a relatively common condition in premenopausal women that needs to be considered in the differential diagnosis of CPP. If left untreated, this condition can negatively affect the quality of life with physical and psychological consequences. Recent studies suggest an association between PCS and recurring lower limb var-

icosities, which are related to insufficient venous function. Thus, an elaborate diagnosis with an examination in an upright position is crucial for the appropriate treatment of patients with CPP and/or recurring varicose veins.