# PELVIC CONGESTION SYNDROME

## WHAT IS PELVIC CONGESTION SYNDROME?

Chronic pelvic pain is quite common in women and can potentially lead to significant disability. Approximately one third of all women will suffer from chronic pelvic pain at some point during their lifetime. It is described as “non-cyclic” pain, which means it lasts longer than 6 months in duration. There are many different conditions that can cause pelvic pain, making diagnosis difficult.

Pelvic congestion syndrome (PCS) must be considered if the pain worsens when sitting or standing and is relieved by lying down. It can be associated with varicose veins in the thighs, buttocks, or vaginal area. Some patients may also experience pain with urination (dysuria) or during/after sexual activity (dyspareunia). Multiple pregnancies may also exacerbate the condition. PCS is associated with what is known as ovarian and pelvic vein dilatation (enlargement), which results in varicose veins in the pelvis. The treatment of PCS related to chronic pelvic pain requires a multidisciplinary team approach to evaluate and treat this complex medical condition.

## WHAT CAUSES PCS?

The cause of PCS is unclear. However, the possibility of anatomical or hormonal abnormalities can contribute to the development of PCS. The majority of women who are affected are between the ages of 20 and 45 and with multiple previous pregnancies. It is felt that the hormonal changes and weight gain, along with the anatomical changes in the pelvic structures during pregnancy, can cause an increase of pressure within the ovarian veins and weaken the vein wall leading to dilatation. Estrogen can also weaken the vein walls, predisposing women to PCS.

In normal veins, blood flows from the pelvis up toward the heart via the ovarian vein and is prevented from flowing backward by valves within the vein. When the ovarian vein dilates, the valves do not close properly. This results in a backward flow of blood, also known as “reflux.” When this occurs, there is pooling of blood within the pelvis that leads to pelvic varicose veins and clinical symptoms of heaviness and pain.

## WHAT ARE THE SIGNS AND SYMPTOMS?

Symptoms of PCS may include any of the following:

- Dull, aching or “dragging” pain in the pelvis or lower back, particularly on standing and worse around the time of your menstrual period
- Irritable bladder that sometimes leads to stress incontinence
- Irritable bowel (recurrent abdominal pain and diarrhea alternating with
- periods of constipation)
- Deep dyspareunia (discomfort during or after sexual intercourse)
- Vaginal or vulvar varicose veins (bulging veins around the front passage)
- Varicose veins of the top of the inner thighs or the back of the thighs

## HOW IS PCS DIAGNOSED?

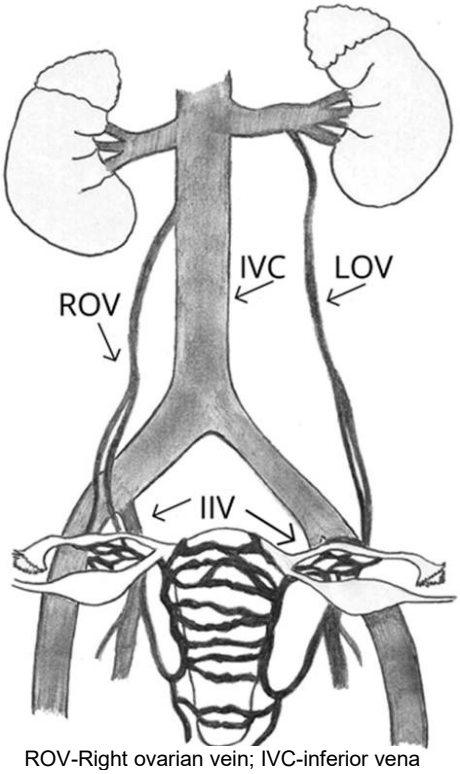
**Ultrasound:** Abdominal and pelvic ultrasound is a vital initial step in the diagnosis of PCS because it can eliminate other common causes of chronic pelvic pain. It is possible with both transabdominal and transvaginal ultrasound to directly visualize reflux in the ovarian veins and identify dilated pelvic veins.

**Computed Tomography (CT) or Magnetic Resonance Imaging (MRI):** It is possible with both tests to visualize abnormal veins within the pelvis. Since CT is associated with radiation exposure, it is not recommended for use in women who are pregnant. Both CT and MRI can detect the enlarged veins, but they cannot identify whether there is a reversal of flow. An ultrasound or venography is recommended to determine reflux within the affected veins.

**Pelvic Venography:** This is considered the most definitive imaging modality for diagnosing PCS because it can identify the abnormal veins and the reversal of flow within the affected veins. This minimally invasive procedure is performed by a vascular specialist in the hospital or clinic. Pain medication is given before the procedure to alleviate any minor discomfort. During the procedure, a small catheter (flexible, thin tube) is placed directly into the abnormal ovarian vein. The catheter enters the venous system from the groin (common femoral vein) or neck (internal jugular vein), and x-rays are then used to guide the catheter into the ovarian vein. At this point, an iodine-based dye is injected into the vein and images are obtained to confirm the abnormal appearance and reversal of flow within the vein.

## TREATMENT OPTIONS

**Pelvic Venography:** Often performed as a diagnostic procedure, pelvic venography may also be used with a nonsurgical, minimally invasive procedure known as pelvic embolization (explained below). At your surgeon's discretion, these procedures may be performed together or at different times.



ROV-Right ovarian vein; IVC-inferior vena cava; LOV-Left ovarian vein; IIV-internal iliac veins. *Ann Med.* 2022; 54(1): 22–36

**Ovarian/Pelvic Vein Embolization:** In this procedure, a catheter (flexible thin tube) is placed directly into the abnormal ovarian vein as described above. Sclerosing agents (medicines that induce inflammation) are injected into the pelvic varicose veins to close them down. Small metal coils or plugs are then placed to block flow into the ovarian vein. This prevents the reversal of flow in the abnormal vein(s), which reduces the pressure within the enlarged pelvic veins. Since there is normally a large network of veins, closure of these pelvic veins does not result in any dysfunction of the uterus or ovaries; nor is there an increased risk of infertility.

If reversed flow is present within the other ovarian vein or within other pelvic veins, these vessels can also be embolized. This procedure is typically performed on an outpatient basis; most patients go home after a few hours of observation and return to normal activity after the first week.

After an ovarian vein embolization, approximately 75 percent of patiens will report improvement in their symptoms. Several sessions may be required because multiple veins may need to be embolized.

## PRIOR TO YOUR VENOGRAPHY

- If you are **allergic to x-ray contrast dye, iodine, or shellfish, notify the**
- **nurse or physician.**
- If you **have renal insufficiency** (your kidneys are not working to clear toxins), **you must notify your physician** prior to and on the day of your venography.
- Unless directed by your physician to limit your fluids, increase your fluid intake the day before and following the procedure to decrease the concentration of the dye in your kidneys.
- **Eating**: Have nothing by mouth after midnight, unless otherwise instructed by your healthcare provider.
- **Medications**: Take your medications as directed by your healthcare provider with sips of water. Bring your medication list with you to the hospital or clinic. **Please ALERT your physician if you are taking any of these drugs on your initial visit.**
    - If you take **warfarin (Coumadin®),** you may be asked to stop taking this medication a few days prior to the test (Stop taking it on _____.)
    - If you take **metformin (Glucophage®),** ask your physician if you should stop taking this medication a few days prior to the test (Stop after taking it on _____).
    - If you take **insulin** or any other oral diabetic medications, you need specific instructions regarding your morning dosage on the day of the procedure.
    - If you take **clopidogrel (Plavix®),** you may be asked to stop taking this medication a few days before the test (Stop after taking it on _____.)
    - If you take **rivaroxaban (Xarelto®)**, you may be asked to stop taking this medication a few days before the test (Stop after taking it on _____.)
    - If you take **apixaban (Eliquis®**), you may be asked to stop taking this medication a few days before the test (Stop after taking it on _____.)
    - If you take **ticagrelor (Brilinta™)**, you may be asked to stop taking this medication a few days before the test (Stop after taking it on _____.)
    - **Continue to take aspirin.**
    - Other than the medications listed above, **continue** taking your current medications, including the day of the procedure, with small sips of water.
- You will need an escort home and you must stay with someone overnight or have someone stay with you.
- Your physician will explain the procedure to you, answer any questions you may have and ask you to sign a written consent form.
- **Do not** wear makeup, lotion, or nail polish.
- **Do not** shave the area where you are having the procedure.
- Remove all piercings and do not wear jewelry.
- Plan to leave your glasses, dentures, hearing aids or any other prosthetic devices with a family member when you arrive.
- **The evening before,** a staff member will call you to let you know when to arrive for your procedure.
- If your venography is on a Monday, you will receive a call late Friday afternoon before the procedure.

## THE NIGHT BEFORE THE PROCEDURE

A staff member will call you to let you know when to arrive for your procedure. Identify a responsible person who can drive you home after your procedure and remain with you for at least 24 hours after your procedure

## ABOUT THE VENOGRAPHY

The venography is performed as an outpatient procedure that generally takes about 1 to 1½ hours to complete. You may be given intravenous (IV) fluids before and after the procedure.

### What to Expect During the Procedure

- You may have electrodes placed on your chest to monitor your heart rate and rhythm. A blood pressure cuff is placed on your arm to monitor your blood pressure.
- An injection of contrast may cause you to feel warm and your face may appear flushed. You may also have a metallic taste in your mouth. These sensations are normal and should last only a minute or so.
- Allergic reactions to the contrast dye can occur. Let your healthcare provider know if during or after the procedure you have trouble breathing or if you develop itching, a rash, or hives.
- An intravenous line (IV) will be placed in your vein, and you will receive medicine to help you relax. The procedure will be performed under sedation.
- Your groin or arm will be clipped and cleansed, and the doctor will inject a numbing medication at the insertion site.
- A catheter (flexible thin tube) will be inserted into the vein in your groin or arm area through which a dye will be injected.
- **Sclerosing agents:** Once your surgeon has identified the faulty pelvic veins (the veins with reflux) that need to be treated, he or she may decide to use a sclerosing agent to close off the refluxing vein segments. Sclerosing agents irritate the inside wall of the faulty vein segments (endothelium), causing the vein to collapse. The body then absorbs the vein, and blood is re-routed to a healthy vein, restoring proper venous circulation in the area.
- **Coiling:** For larger faulty vein segments, your surgeon may decide to use coils to embolize (or close off) the refluxing vein. During coil embolization, small metal coils are placed in the vein segments to interrupt circulation through the vessel. Once in place, the coils prevent backflow, or reflux, within the treated vein segments.
- The procedure's length varies from 45 minutes to 2 hours depending on the condition's complexity.

### What to Expect After the Procedure

- The catheter in your vein will be removed, and either direct pressure will be applied to the insertion site for 20 minutes or until the bleeding stops.
- You will have either a pressure dressing or a light dressing applied to the puncture site.
- You will spend up to 3 hours in recovery where you will be asked to keep the involved leg or arm straight.

- Your temperature, blood pressure, heart rate and pulses in the area of catheter insertion will be monitored.
- You should be able to drink fluids, walk and urinate before you are allowed to go home after the procedure.
- You may experience some discomfort at the catheter site or mild abdominal cramping, which can be relieved with pain medication taken orally (by mouth).

## WHAT COMPLICATIONS MAY OCCUR?

The complication rate associated with this procedure is **very low**. Discuss your concerns with and alert your physician if you experience any symptoms. The following are the most common problems associated with venography or embolization:

- A hematoma (bruise) may appear around the puncture site but usually disappears in a few days or a week.
- Allergic reactions to the contrast dye can occur. Let your healthcare provider know if during or after the procedure you have trouble breathing or if you develop itching, a rash, or hives.
- Kidney dysfunction can result in a temporary increase in the creatinine level of your blood. People at risk already have kidney dysfunction, diabetes, multiple myeloma, dehydration or are taking medications that affect kidney function.
- Coils that were inserted to prevent backflow within the treated vein segments may shift out of place and travel to the lungs.
- Rupturing of the ovarian vein may occur.

## WHAT TO EXPECT WHEN YOU GO HOME

### Restrictions

- During the first week following your procedure, avoid strenuous activity including lifting or moving heavy objects more than 10 pounds, vigorous exercise, straining to move your bowels and sexual activity.
- Wait until the morning after your procedure to shower. You may remove the bandage from the puncture site at that time.

### Pain Management/Medications

- The puncture site may be tender for 24 to 48 hours. You may experience some mild to moderate abdominal cramping for the first week.
- If you have pain related to the puncture site or cramping, take a pain reliever such as acetaminophen (Tylenol®) or ibuprofen (Advil® or Motrin®) in the recommended dose as needed.
- Resume taking all previously prescribed medications unless told otherwise by your physician.
- If you are taking **metformin (Glucophage®),** check with your healthcare provider to see whether you should temporarily stop taking this medication after the procedure. It is recommended to temporarily stop taking metformin for 48 hours after the venography.

### Returning to Work

- You may miss a few days of work after this procedure. Discuss this with your healthcare provider.
- You may drive 24 hours after the procedure if you are not taking pain medications.

### Signs and Symptoms to Look for at Home

**Call your physician — or go to the nearest hospital — if you experience the following:**

- Increasing pain, swelling, warmth and discomfort at the puncture site
- Signs of infection at the puncture site (redness, swelling, drainage, warm to touch)
- Temperature of 100.4° F or greater
- Change in color, temperature, or sensation of any limb
- Unusual weakness or faintness
- Uncontrollable nausea and vomiting
- Moderate to severe abdominal or pelvic discomfort, pain or cramping that is not controlled by pain medication
- Shortness of breath, chest pain or palpitations

### FOLLOW-UP APPOINTMENT

After your procedure, you will go home with a list of instructions and medications. You will need to schedule an appointment to see your surgeon 1 to 2 weeks after your surgical procedure. You will follow up at one of our outpatient clinics. **To make an appointment please call 631.638.1670.**