Insufficient vein(s) embolization
(Ovarian vein embolization)

Treatment for Pelvic congestion syndrome

Background
Pelvic congestion syndrome (PCS) is where patients have symptoms like long term pelvic pain and / or dullness. The Pain often increases when standing. Diagnosis is based on symptoms and the imaging (ultrasound, MRI or CT scan) which demonstrate blood congestion. One treatment option is blocking off the blood flow to the vein.

What is the cause of and/or risk factors of Pelvic Congestion Syndrome?
Pelvic congestive syndrome is caused by weak venous valves. The valves fail to help move blood properly through the veins and blood starts pooling in the pelvic region. The veins that are involved are the ovarian and/or internal iliac branch veins.

Factors that increase your risk of developing pelvic congestion syndrome include:

1) Multiple pregnancies
2) History of vaginal varicosities during pregnancy
3) Reoccurring leg varices
4) Varicose veins in out of the ordinary locations (groin, buttocks, back of the thigh)

What is Pelvic congestion syndrome embolization?
Insufficient vein(s) embolization is a procedure where a liquid agent is injected into the vein(s) that is/are not working properly. The liquid acts by plugging the vein. The ovarian and/or internal iliac veins can have valves that are not functioning properly. Normal blood flow due to gravity through these veins is also poor. This causes blood to pool in the pelvic veins, leading to ballooning (varices) of pelvic veins and often legs. This can be treated by placing a catheter (small tube) into the abnormal veins (through the groin or the neck), closing off the pelvic varicosities with a liquid agent (sclerosant) and shutting down the poorly functioning major veins with specific material (most often called coils and plugs).

What should I expect?
Prior to the procedure
Prior to the procedure several tests may be done to confirm your diagnosis and that this treatment is appropriate and can be carried out safely. First, you should have an outpatient evaluation from an interventional radiologist. They will review your symptoms, medical history, allergies and medications. You should expect to have an endovaginal ultrasound and most commonly another imaging study, on a separate day, either a CT scan or an MRI.

After this, the interventional radiologist will determine if your symptoms can be related to a pelvic congestion syndrome and he will discuss with you the interest of trying a pelvic congestion syndrome phlebography/embolization in your specific case. Your discussion will include the procedure, the expected benefits and possible complications.
Once a decision is made to go ahead with the procedure, you will be contacted by the admission/interventional radiology team with a procedure date and give you further instructions concerning your admission.

Your procedure day
You will be admitted in hospital and a pregnancy test will be obtained. Lab tests can be done on the day of the intervention or previously on the day of outpatient assessment. A Bladder catheter and IV lines are inserted. You will be brought down to the radiology department, any additional questions that arose since the outpatient clinic will be addressed, you will sign the consent form for the procedure and be brought into the interventional radiology suite, where you will be prepped.

In the interventional radiology suite heart-monitoring (ECG) wires will be attached to your chest and arms. A small sensor is put on a finger to monitor your oxygen level and a blood pressure cuff wrapped around one arm. This is a sterile procedure; the skin at the planned insertion site (either neck or groin) is washed and covered with sterile sheets. Then, local anesthetic is also used to “numb” the skin and muscle. The medical staff will be wearing masks and gowns during the procedure. You will require oxygen, which will be given to you via either a mask or nasal prongs during the procedure. Medications will be given through the vein (intravenous) in your arm to help you relax and for pain control. A specially trained interventional radiologist will perform the procedure. A very small tube called a catheter will be inserted into a vein in your groin or neck. The radiologist guides the catheter through the vein to the area to be treated. To see the blood flow with the x-rays a dye or contrast must be given through the catheter, which may give you a feeling of warmth when it is injected.

The radiologist will then inject the agent that will plug the veins. During and immediately after sclerotherapy foam injection (during the procedure), you might experience pain; this will be significantly improved by intra-venous medication, which will be administered, by the interventional radiologist (doctor) or nurse during the procedure.

The procedure is estimated to take 60 to 90 minutes.

After the procedure
After the procedure is finished the catheter will be pulled out and one of the medical staff will press on the vein. You will be transferred to one of the inpatient units and will be asked to remain on bed rest lying flat for approximately 4 hours after the procedure to allow your groin site to mend. The post-procedure period is usually uneventful except for a post-embolization syndrome, which may be variable in intensity. Post-embolization syndrome (pain, nausea, vomiting, and low-fever) is expected from embolization and will decrease in intensity during the next few days. Pain is usually easily manageable with anti-inflammatory medications and mild analgesics within 24h of procedure.

You will have a small dressing on your groin that can be removed after 48 hours.

Clinical follow-up is usually at 6-9 months, with pelvic endovaginal ultrasound.

General Instructions
You should continue with your usual medications prior to the procedure. You can take them with a small sip of water. **If you are on blood thinners, you must tell the doctor’s office before you come for the procedure. If you are currently taking Aspirin you may be asked to stop taking it one week prior to your appointment. If you are a diabetic on insulin or taking oral diabetic medicines you will be given further instructions prior to coming in for the procedure.**

What are the risks of the procedure?
All procedures have risks but these can be minimized by closely following instructions.
There are few, usually non-serious, risks:

- Tearing of ovarian vein
- Venous spasm (narrowing of the vein)
- Venipuncture site blood collection (hematoma)
- Coil movement (migration)
- Venous blood clot (thrombosis)
- Blood clot in your lungs (Pulmonary embolism)

The puncture site will be sore for 24-48 but there should be no bleeding or increasing in size of puncture area. If there is, you should contact the interventional radiology team.

There is also the possibility of an allergic reaction to any of the drugs or contrast agent that may be used during the procedure. The most common allergic symptoms are itching or a mild skin rash. Severe side effects are rare but can occur and will be treated as required.

A patient is exposed to radiation as part of the procedure. The radiation is needed to see the veins and treat the varices. The risk of future adverse events related to the radiation exposure is considered low.

Infection is always a risk following any surgery and can occur following the procedure, this is extremely rare. Treatment would require antibiotics and further follow up with your doctor.

Post Embolization Syndrome: Some women experience a mild temperature, elevated white blood cell count and generalized aches and pains following the procedure. This is known as post embolization syndrome and usually lasts for 7-10 days after the procedure. If post-embolization symptoms increase instead of decrease, you should contact the interventional radiology team.

You should immediately contact the interventional radiology team or present at the emergency room if there are symptoms of pulmonary embolism (shortness of breath, chest pain, blood in your sputum) or deep venous thrombosis (new lower extremity swelling).

**What are the benefits of the procedure?**

Symptoms may not be alleviated or incompletely alleviated after ovarian vein embolization. Therefore, internal iliac vein (phlebography) may be indicated with possible refluxing vein embolization. This can be done in the same session as the ovarian vein embolization or can be done after re-assessment several weeks to months after the initial embolization.

Contact information:

Interventional Radiology contact person and number:

Emergency contact Number:

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