

PELVIC CONGESTION SYNDROME

THE ESSENTIALS OF GI/GU/REPRO PROCEDURES

Brought to you by:

Procedural Education Committee of the GI/GU/Repro Service Line- Resident and Fellow Section,
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OVARIAN VEIN EMBOLIZATION IN THE TREATMENT OF PELVIC CONGESTION SYNDROME

INDICATIONS

1. Pelvic congestion syndrome is a chronic condition characterized by > 6 months of noncyclic pelvic pain/pressure/heaviness and is caused by retrograde flow through incompetent valves in dilated ovarian or internal iliac veins.
 - A. Demonstration of retrograde flow via incompetent gonadal veins into pelvic varices
 - B. Treatment options include pelvic vein embolization

CONTRAINDICATIONS

1. Active pelvic inflammatory disease or other infection
2. Other untreated causes of pelvic pain: Endometriosis, adenomyosis, uterine fibroids, pelvic tumors
3. Uncorrectable coagulopathy
4. Contrast allergy
5. Renal Insufficiency
6. Pregnancy

PREOPERATIVE PREPARATION

1. Comprehensive gynecological evaluation and pelvic examination with thorough evaluation of symptoms to rule out other causes
2. Obtain preoperative imaging
 - a. Best non-invasive imaging tool is color Doppler interrogation on Transvaginal ultrasound (TVUS)
 - b. If TVUS is equivocal or non-diagnostic proceed to MRI, CT with contrast or retrograde ovarian venography.
 - c. It is important to note that imaging often poorly demonstrates ovarian/pelvic varices since the patient is imaged in the supine position which results in decreased hydrostatic pressure and thereby venous decompression, often leading to a false negative result.
 - d. If high clinical suspicion with equivocal imaging studies, recommend venography
1. Review of allergies
2. Review patient history, physical examination, and prior records
3. Obtain INR (<1.5), platelet count (>50,000), BMP (eGFR > 60)
4. NPO 8-12 hours prior to procedure (except appropriate medication)
5. Administer 500 mg Levaquin IV x 1 dose prior to procedure

CONSENT

1. Discuss treatment risks, benefits and alternatives
2. Discuss risk of:
 - a. Infection
 - b. Bleeding
 - c. Contrast reaction
 - d. Acute renal injury secondary to contrast administration
 - e. Risk of embolic agent embolizing an undesired vessel and causing damage to normal tissue
3. Discuss alternatives:
 - a. Surgical
 - i. Laparoscopic transperitoneal ovarian vein ligation
 - ii. Hysterectomy and oophorectomy
 - b. Medical management

PROCEDURE

1. Conscious Sedation
2. Sterile preparation of access site: Transjugular or Transfemoral
3. Apply local anesthesia
4. Establish access of internal jugular vein (or femoral vein) and introduce a 5 – 7 French sheath

5. Advance multipurpose catheter (if transjugular) or Cobra catheter (if transfemoral) into the left renal vein
6. Perform left renal venogram and assess for reflux into the left ovarian vein
7. If reflux is identified, embolize the main left ovarian vein and all visible collateral vasculature with (gelfoam, embolization coils or tetracycline sulfate)
8. Perform post-embolization venogram to confirm occlusion
9. Perform right renal venogram and right ovarian venogram (if using transfemoral approach, the catheter should be exchanged for a Simmons II catheter to access the right ovarian vein)
10. If reflux is identified on the right, embolization should be performed
11. If no reflux is identified on ovarian venogram, perform bilateral internal iliac venograms to assess for pudendal vein reflux
12. At the conclusion of the procedure, remove the catheter and sheath
13. Apply direct pressure until hemostasis is obtained
14. Apply sterile dressing
15. Transfer patient to PNCU or PACU

POST-OPERATIVE CARE

1. Performed as an outpatient
2. Bed rest for 1 or more hours to permit hemostasis at the puncture site and until sedation criteria met
3. Discharge with oral pain medication
4. Avoid heavy lifting or strenuous activity for 3-7 days post procedure

POSSIBLE EARLY COMPLICATIONS

1. Venous puncture related complications
 - a. Hematoma
 - b. Pseudoaneurysm
 - c. Pneumothorax if access if via the internal jugular vein
2. Embolization of non-targeted vessels
3. Stroke – paradoxical emboli secondary to non-targeted release of gelfoam particles
4. Pulmonary embolization
5. Vein perforation
 - c. Minimize risk with use of hydrophilic wires and microcatheters
6. Post-embolization syndrome
 - d. Self-limiting – hours to days
 - e. Treat with oral analgesics and anti-inflammatory medications
7. Thrombophlebitis
8. Thrombosis of the parent vessel (left renal or right iliac vein)

POSSIBLE LATE COMPLICATIONS

1. Coil migration/misplacement
2. Recanalization and recurrence of varices
 - a. May need repeat embolization
3. Migration of coils into the pulmonary bed

FOLLOW UP

1. Post procedure follow up at 1-3 weeks
2. Clinical follow up at 3 months
 - A. Evaluation of symptom relief
 - B. If persistent symptoms, transvaginal US to assess ovarian or pelvic vein reflux
2. If symptoms persist at 6 months, repeat venography

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