Pelvic Congestion Syndrome

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Disclosure Statement of Financial Interest

I, Robert Schainfeld, **DO NOT** have a financial interest / arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.
Definition of Pelvic Congestion Syndrome (PCS)

- Chronic noncyclic pelvic pain (CCP) > 6 months duration severe enough to require medical or surgical treatment
- Excess > 39% of women with pelvic pain during their lifetime
- CCP primary indication for 10% of GYN referrals, 40% dx laparoscopies and 12% of hysterectomies
- Pelvic varices associated with dyspareunia, dysmenorrheal, dysuria, and vulval congestion with or w/o vulvar varices
Risk Factors for PCS

- 2 or more pregnancies or hormonal increases
- Rare in nulliparous and postmenopausal women
- Fullness of leg veins
- Polycystic ovaries
- Hormonal dysfunction
Symptoms of PCS

• Chronic pain described as dull and aching, felt in lower abdomen and back increases during the following times:
  - following intercourse
  - menstrual periods
  - when tired or standing (worse at end of day)
  - pregnancy
Symptoms of PCS

- Irritable bladder
- Abnormal menstrual bleeding
- Vaginal discharge
- Varicose veins on vulva, buttocks or thigh
Differential Diagnosis of Pelvic Pain

- Bowel pathology
- Cancer/metastases
- Endometriosis
- Fibroids
- Fibromyalgia
- Neurologic pathology
- Orthopedic pathology

- Ovarian cyst
- Pelvic congestion syndrome
- Pelvic inflammatory disorder
- Porphyria
- Urologic pathology
- Uterine prolapse
Pertinent Anatomy

- IVC begins at confluence of common iliac veins
- IVC with tributaries including lumbar, renal and hepatic veins
- RIGHT ovarian vein drains directly into IVC as well as suprarenal and inferior phrenic veins
- LEFT ovarian vein drains into left renal vein
- Obturator veins provide venous drainage for pelvic wall and perineum
Pelvic Venous Anatomy
Clinical Assessment

• Comprehensive Hx and PE
• Pelvic DUS (transvaginal or transabdominal)
• Pelvic veins > 6 mm, ovarian vein > 8 mm
• Polycystic changes of ovaries
• Enlarged ovaries with clusters of 4-6 cysts of 5-15 mm in diameter
Vulvar Varices
Leg Varices
Magnetic Resonance / CT Venography

- Presence of dilated ovarian vein with paraueterine varices
- MRV
  - 88% sens / 67% spec for ovarian vein reflux
  - pelvic VV > 4 mm and ovarian vein > 8 mm
  - reversal of flow in ovarian vein
Pelvic and Uterine Varices
MRV of Pelvis
MRV of Pelvis
MRV of Pelvis
Retrograde Ovarian Venography

- Gold standard
- Ovarian vein > 10 mm
- Uterine venous engorgement
- Filling of pelvic veins across midline
- Filling of vulvovaginal or leg varices
- Internal iliac venography as often times involved
- Asymmetric with left ovarian and right internal iliac veins most commonly implicated
Ovarian venous plexus

Uterine venous plexus

Ovarian vein

Ovarian venous plexus
Medical Therapy for PCS

- Psychotherapy
- Progestins
- Danazol
- Phlebotonics
- Gonadotropins receptor agonists with HRT
- Dihydroergotamines
- NSAID’s
- MDP 30 mg daily x 6 mos
- Goserelín 3.6 mg monthly x 6 mos
Therapy for PCS

• Medical therapy
  - Hormonals with medroxyprogesterone (MDP)
  - Hysterectomy with oophorectomy and laparoscopic ovarian vein ligation
  - Percutaneous techniques – embolization of ovarian vein with coils, occluder devices and foamed liquid sclerosants
Technique of Retrograde Ovarian Venography and Coil Embolization

- Right CFV cannulation
- Venogram of IVC – ID renal veins
- Left renal venogram
- Cannulate the ovarian vein
- Retrograde venography of mid-ovarian vein
  - Reflux into pelvic varices and crossing midline out the right iliac vein
Technique of Retrograde Ovarian Venography and Coil Embolization

• Deploy coils from distal ovarian vein to renal vein confluence
• Coils of 10-20 mm up to 40 cm length
Post-Procedural Care and F/U

- Bed rest
- Fully ambulatory after 1 hour
- Home with mild narcotic
- NSAID’s for phlebitis
- At 4- weeks, if asx no imaging
- If sxss persist at 3-6 months, CTV or MRV
- Confine embolization to left ovarian vein
- Usually does not affect future pregnancy
Complications of Coil Embolization

- Cardiac arrythmias (8%)
- Ovarian vein thrombophlebitis
- Recurrence of varices
- Migration of embolic material
- Radiation exposure to ovaries
- Gonadal vein perforation
- Nontarget embolization
Clinical Outcomes of Coil Embolization

- Maleux reported 68% of pts treated had improvement of sxs
- Kim et al reported 100% technical success and 83% with improved sxs

Kim, et al. JVIR. 2006;17:289-97
Maleux, et al. JVIR. 2000;11:859-64
Treatment of PCS
Pelvic Venogram
Coil Embolization of Left Ovarian Vein
Coil Embolization of Left Ovarian Vein
Vulvar Varices Venogram
Vulvar Varices Post-Embolization
Left Internal Iliac Venogram
Post-Embolization with Sclerosant