The Evaluation & Treatment of Pelvic Venous Disorders

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Disclosure

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I have no financial relationship(s) to disclose.
Pelvic Venous Disorders

Two Clinical Syndromes
(Isolated or Combined)

Pelvic Congestion Syndrome
- Pain
- Dyspareunia
- Dysuria

Pelvic Varices
- Gluteal
- Perineal
- Vulvar

Three Anatomic Patterns of Reflux

Ovarian Vein Reflux
Internal Iliac Reflux
Nutcracker Syndrome
Premenopausal Women

Mechanical Factors

- Pregnancy
  - 60 X Increased Flow

Endocrine Factors

- Estrogen
  - Increased NO
    - SM Relaxation
      - Loss of responsiveness

Ovarian / Internal Iliac Vein Dilation

Ovarian & Internal Iliac Vein Reflux

Pelvic Pain

Buttock, Perineal, & Labial Varices
Pelvic Venous Disorders - Anatomy

- Diagnosis & treatment requires familiarity with anatomy
- 3 primary venous connections
  - Ovarian veins
  - Internal iliac veins
  - Femoral vein
- Caveats
  - Systems multiply interconnected
  - Frequent drainage across pelvis
Ovarian Vein Anatomy

- Provides drainage of
  - Parametrium
  - Cervix
  - Mesosalpinx
  - Pampiniform plexus
- 2 - 3 trunks form single vein at L4
  - Right - IVC
  - Left - L Renal Vein
- Mean diameter 3.1 mm
- 2 - 3 valves
- Valvular incompetence in 47% of women
Internal Iliac Vein Anatomy

- Common Iliac Artery
- Internal Iliac Artery
- Right External Iliac Artery
- External Iliac Vein
- Superficial Circumflex Iliac Vein
- Inferior Epigastric Vein
- Superior Gluteal Vein
- Inferior Gluteal Vein
- Pubis Vein
- Obturator Vein
- Superior Vesical Vein
- Inferior Vesical Vein
- Medial Hemorrhoidal Vein
The SFJ and Pelvic Reflux

- Superficial external pudendal vein
- Deep external pudendal vein
  - Present in 75% of patients
  - Rarely a GSV tributary
  - Most often a CFV tributary within fossa ovalis
  - Associated with labial varices
Indications for treatment

- Chronic pelvic pain
  - Pelvic pain > 6 months
  - 10% of outpatient gynecologic visits
  - Causes (Soysal, Human Reprod 2001)
    - Endometriosis (39%)
    - Pelvic congestion syndrome (31%)
    - Pelvic inflammatory disease (11%)
    - Adhesions (10%)
    - Fibroids (3.7%)
    - Irritable Bowel

- Lower extremity varicose veins
  - Gluteal
  - Perineal
  - Labial
  - GSV with competent terminal valve & reflux through deep / superficial external pudendal

- Combined pelvic and lower extremity venous symptoms
Diagnosis of Pelvic Venous Disorders

- History & Exam – 94% sensitive, 77% specific
  (Beard RW, Br J Obstet Gynaecol 1988)
  - Post-coital pain
  - Ovarian tenderness
  - Unusually distributed varices

- Preliminary transvaginal / abdominal U/S
  (Park SJ, Am J Roentgenol 2004)
  - Ovarian vein > 6 mm with reflux
  - Pelvic varicosities > 5 mm with reflux
  - Uterine crossing veins
  - Polycystic ovaries / Uterine volume

- Retrograde ovarian/iliac venography
Premenopausal Women

**Mechanical Factors**

- **Pregnancy**
  - 60X Increased Flow

**Endocrine Factors**

- Estrogen
  - Increased NO
  - SM Relaxation
  - Loss of responsiveness

**Ovarian / Internal Iliac Vein Dilation**

- Hysterectomy
- Oophorectomy

**Ovarian & Internal Iliac Vein Reflux**

- Coil Embolization
- Foam Sclerotherapy

**Pelvic Pain**

- Phlebectomy
- Sclerotherapy
- Hysterectomy
- Oophorectomy

**Buttock, Perineal, & Labial Varices**

- Medroxyprogesterone
- GnRH agonists
Ovarian Vein Treatment

- **Access**
  - Right CFV
  - Right IJV
- **Long 6 Fr renal curve sheath**
- **5 Fr selective catheter**
- **Balloon occlusion sclerotherapy**
  - 11.5 mm compliant OTW balloon
  - 1:1 Contrast: 3% STS
  - Liquid versus foam
- **Coil embolization**
  - Embolization at upper 1/2 of SI joint
  - 5 - 15 mm, 0.035” coils vs Amplatzer plug
Internal Iliac Vein Treatment

• Selective catheterization
  • Obturator
  • Internal pudendal tributaries
  • Gluteals
• Balloon occlusion venography
• Balloon occlusion sclerotherapy
• ± Coil embolization
• 106 women with PCS failing 4 - 6 months MPA
• Diagnosis confirmed by laparoscopy and venography
• Randomized to
  • Ovarian vein embolization (n = 52)
  • Hysterectomy / BSO / HRT (n = 32)
  • Hysterectomy / USO (n = 34)

*p < 0.05
Conclusions - Pelvic Venous Disorders

- Variable presentation
  - Pelvic congestion syndrome with/without varices
  - Isolated vulvar, perineal, gluteal varices
- Knowledge of venous communications required
  - Ovarian veins
  - Internal iliac veins
  - Saphenous / Common femoral veins
- Diagnostic tests guided by institutional expertise
- Percutaneous treatment of pelvic symptoms / varices
  - Ovarian veins – Embolization & (foam) sclerotherapy
  - Internal iliac veins – (Foam) sclerotherapy
  - Distal varices – US / Fluoro guided sclerotherapy