Greater And /Or Small Saphenous reflux: What You Need To Know Before You Treat

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WHAT YOU NEED TO KNOW

- **SYMPTOMS AND HISTORY** – Be comprehensive and very specific – May need to ask “embarrassing” questions i.e. dyspareunia, pudendal, vaginal varices
- **PHYSICAL EXAM**
- **IMAGING** – Workhorse is thorough ultrasound—Consider MRI, CT, venography, transvag, US, IVUS when necessary

SYMPTOMS

- What are they and what is the source of the varices (if present)?
- Understand the anatomy and distribution of the venous hypertension

37 year old female denies any symptoms (however GSV incomp.); adequate result ONLY achieved thru comprehensive tx

60 year old WF; severe itching isolated to post calf only; GSV, ASV, SSV incomp.

Post calf symptoms and appearance all SSV dist

Reticulars and spiders - GSV, ASV distribution

Post tx - RF, MP, 2 sessions in october, 4 months later

Pre tx - local tx only? Poor option
RF of SSV + VOG, 3 sessions sclerotx with polidoc. (0.5, 1%) and glycerine

Where are They Coming From?

• Almost Anywhere!

Case 1: Gsv Incomp. and Tribs - 29 yowf varices to groin and vulva

Case 2: May-Thurner, Ovarian Vein incomp, Gsv, Aasv, Hunterian, Dodds, Cocketts and Boyds incomp. perf

General guidelines

Identity Source

• Thorough History of pain and discomfort
  – ?Chronic pelvic pain (recent lit. suggests 1/3 have Pelvic Congestion Syndrome)
  – ?Prior surg., strip, lig., RF, EVLT etc.
• Physical Exam
• Detailed Duplex US standing (critical)
  – Including buttock, groin, pudendal, vaginal, and vulvar if indicated
  • Note: not all patients with vaginal, pudendal veins need sectional imaging
  • In addition, there are patients with ovarian and pelvic varicosities with no symptoms.
Identify Source (cont.)

• Pelvic Superior Sources-- gonadal vein, iiv, civ, ivc (don’t forget abdominal origins)
• Pelvic Inferior Sources-- vulvar, vag., pudendal, gluteal, obturater, supfl. epi., circumflex etc.
• Thigh, Calf Sources-- gsv, aasv, ssv trib, neovasc.-- prior surg. strip/lig. or RF, EVLT with remnants and incomp. perfs

Identify Source (cont.)

• Must not ignore the unusual --
  -- inf. vena cava stenosis/occ., filter+/-thrombus, May-Thurn. syn., nutracker pheno., pelvic mass or fibroid with iliac vein stenosis/occ. etc.
• or a combination of any of the above

GSV reflux but Acute DVT Fempop vein; rec. rpt. prolonged TPA infusion (CTV--massive fibroid occ. lt. civ)

67 y/o female with 12-year history leg swelling and difficult ambulation due to thigh and pelvic pain. H/o chronic DVT plus filter placement 15 years ago. Also greater and small saphenous incompetence

Chronic occlusion iliac vein and IVC within filter.
Embo of incompetent GSV (weeks later, pre-approval)

• pre
• post

86 yowm pain, swelling Rt. leg for 6 weeks (sfv-patent, gsv-reflux, thigh-edema)

Need for further imaging: CT or MRI (mrv was done)

• Adductor muscle complex mass compress and encase vessels (? sarcoma)
Abdominal and/or Pelvic Venous Anatomy—When Do You Image?—anytime you have “significant” suspicion!
- MRI/MRV
  • No radiation
  • Easier multiplanar
  • Lighter contrast load (without contrast)
  • Several authors describe false negative results since supine (true for CT as well)
- CT/CTV
  • Better for bowel pathology, bone disorders, endometriosis, etc. (primary path)
- Direct Venography/Ivus
  • Gold standard
  • Bypass cross sect. image step
- Transvaginal ultrasound (unpopular; PCS not on list of many MDs)
  • Operator dependant

Management and Treatment
• Once all reflux/diseased points are clearly identified, tx usually begins with elimination/correction of sources from superior to inferior
• This may include PTA/Stent, embol., sclero., sclerofoam, scleriodiiodated foam, RF, Laser, MP or combo of above etc

Ovarian Vein Reflux
Anatomic Conceptualization
- Superior Component
  • Ovarian vein to broad ligament
  • Responsible for pelvic symptoms
- Inferior Component
  • Broad ligament to lower extremities
  • Responsible for lower extremity and vaginal symptoms

Pelvic Venous Disease
How To Treat: Superior Component
• Occlusion devices
  - Mechanical occlusion devices
    • Coils: primary tool (I prefer Nester nitinol)
    • Detachable balloons
    • Amplatzer Vascular Plug
  - Sclerosants (with contrast, then plus CO2 foam)
    • Polidocanol
    • STS/cotradecol
    • SODIUM MORRUIATE (earlier lit.)
  - Adhesive agents
    • ? n-Butyl Cyanoacrylate

Groin, vaginal, high thigh varicosities
• Treating these varicosities can sometimes be basic—non-complicated (isolated varicose with or out GSV incompl.)
  - Injection sclerotherapy (with or without foam)
  - miniphlebectomy
• Complicated
  - Large vulvar, vaginal, pudendal varicosities or ov. v. comp.
  - Deep and complex thigh perf.
  - Multiple treatments, recurrences

Pelvic Venous Disease
INFERIOR COMPONENT
• Detailed standing ultrasound will direct complexities of treatment
  - Simple isolated segments sometimes treated with conventional sclerotherapy
  - Larger or deeper, complex network can be extensive and require larger volumes of sclerosants and imaging (+/- foam)
  - Flouroscopy can be critical
INTERNAL ILIAC VEIN

- Larger more recent series suggest it should be evaluated and treated due to rich collateralization
- Ant. Div. supply to uterine veins
- Diagnostic done with occlusion balloon at orifice (however can be selective)
- Sclerosant (gelfoam or gasfoam + sclerosant and contrast) delivered through occ. bal. and maintain 3-5 mins; alternatively thru selective cath.
- Coils - not recommended; tortuous and large size vessel
- Done at time of ovarian emb. or second stage 3-6 weeks later
- Note be aware of collaterals to Inf. Mes. vein

23 WF severe leg pain, heaviness, dyspareunia + vag. varix (leg pain worse); US deep cluster v.v, GSV + SSV reflux - NO comm. pelvic v.v to legs >> First tx directed to GSV + SSV RF

After successful leg tx. - direct veno. and embo bilat. ovarian veins

33 yo WF - vulvar, vag. + leg varicose - dual source of pud., vag., and thigh perfs.

50 yowf - h/o 4 strip/ligs - persistent varicose; sup. epi, groin neovasc. - tx = 2% iod. poli >> 3% poli co2 foam, RF gsv remn. + mp bulging v.v
2 wks later after flouro sclero and MP (still healing)

30s WF – pudendals, gluteals, obturators, distal iiw

34 yo wf - vulvar + thigh pressure (no PCS symptoms): US - vag. pudendals, iiv (dist.) txed with embo., GSV sep. RF

31 WF P/P strip lig. twice - rt. vulvar pain and severe leg cramps - no visible vag or vulv. vv BUT US deep pudendal + extensive GSV rems. and leg perf. dis.

30yowf massive vulv. , vag. pud., gsv + aasv, leg perfs
MRV: rt. ov. v. 12mm, lt. civ. 1.5mm from rt. cia comp. (May-Thur.)

Lt. iliac v. via rijv = occ. lt civ > empties to rt iiv + rt ov. v (high press. but antegrade flow) -- lt. 16mm stent via lcfv; lt ov. v. sl. dil.

TX: RF of GSV, AASV, Embo.
pud., perin., vulvar, vag., th. + calf perf, MP th. + calf bulging varicose

5 weeks post-- us sclerotx perf ank.

CONCLUSION
• Varicose veins (and venous insuff.) can present with a variety of different appearances, symptoms and findings
• Correction of GSV, SSV alone will rarely result in most satisfactory results in most patients
• Majority of pts. will require addl. intervention
• Key to success and durable treatment is a good initial history (including detailed questions), physical exam and thorough comprehensive duplex exam (ie., perineal, groin, vaginal, perf, etc)
• Further imaging such as MRV, CTV, Transvaginal Ultrasound, Venography, IVUS, will be directed by findings

CONCLUSION (cont.)
• The experienced, skilled and equipped endovascular surgeon can offer an excellent solution to many of these underdiagnosed and underserved patients
23 yowf PCS symptoms - partially txed ov. and superficial vag. veins (elsewhere); persistent pelvic and groin symptoms; no leg symptoms (phy. exam no obvious varices)

ultrasound of pudendal, vag. area below (slow flow deep varix clusters)

Trans.vag. Us - confirms ov. /pelvic varices -- VENOGRAMS AND EMBO, BOTH OV. VEINS WITH UNEXPECTED MAY-THURNER

symptoms improve about 50% after 6 weeks and plateau: 18mm Wallstent then placed

Following Iliac stent -- 75% improvement - plateau 8 weeks-residual local pain perineal area
us – deep pud. varices

Us and flouro sclerotx all remaining deep clusters—100% improvement at 2 weeks and maintained on f/u 6 mos.
82 y/o female with C5 venous disease and cirrhosis. Could not ambulate secondary to pain. Severe reflux both GSV and LSV with superimposed thrombophlebitis of varicosities.

38 WF mult. sep. sources of reflux; sup. epi., GSV, th. perfs >> Tx-embo. th. + calf perfs

29 year old WF vulvar varicose – separate and independent of her GSV incompetence-US showed deeper source

Patient underwent embolization of both greater and lesser saphenous veins and over four independent incompetent perforators. Patient ambulating normally.