

What is pelvic pain?

Image size: 352 x 352
View size: 866 x 866
WL: 773 WW: 1819

What causes pelvic pain?

Image size: 352 x 352
View size: 866 x 866
WL: 773 WW: 1819

What is pelvic pain?

Image size: 352 x 352
View size: 821 x 821
WL: 876 WW: 2102

Where are the gonadal veins?

Image size: 352 x 352
View size: 821 x 821
WL: 876 WW: 2102

How do veins "break"?

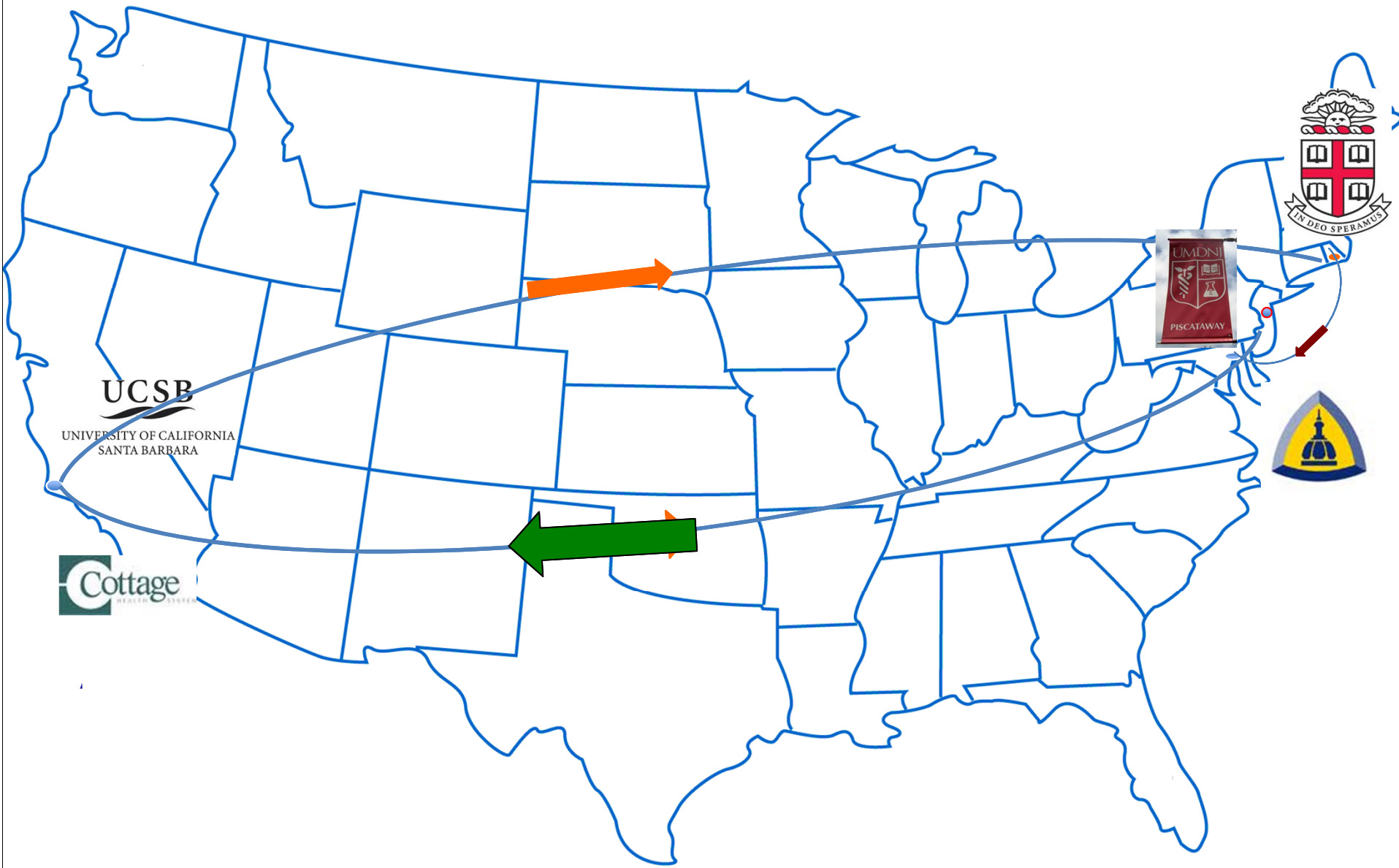
Zoom: 192% Angle: 0
Im: 1/18
TE: 1.1 TR: 2.9
FS: 1.5
12/14/12 8:36:52 AM
Thickness: 130.00 mm Location: 33.60 mm
Made in OsirX

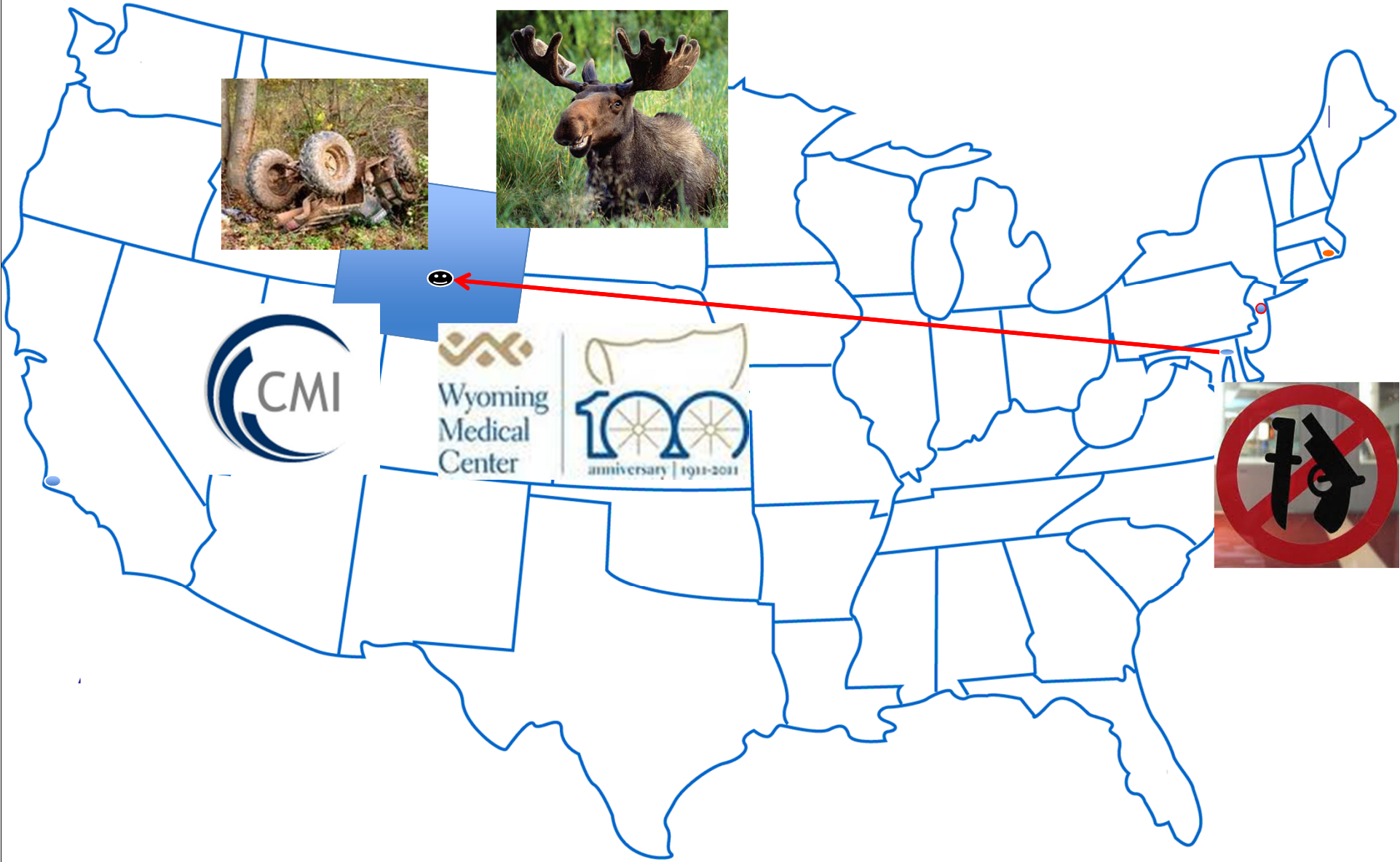
Who has pelvic pain?

Zoom: 246% Angle: 0
Im: 1/39
TE: 0.9 TR: 2.6
FS: 3
12/4/13 1:08:32 PM
Thickness: 151.20 mm Location: 8.25 mm
Made in OsirX

Who treats broken veins?

Zoom: 233% Angle: 0
Im: 1/39
TE: 0.9 TR: 2.6
FS: 3
1/6/14 4:03:05 PM
Thickness: 145.60 mm Location: 9.59 mm
Made in OsirX





Pelvic Venous Insufficiency

Charles W. Bowkley III, M.D.

Neuro, Body, and Vascular Interventional Radiology

Frontiers 2014



CASPERMEDICALIMAGING

Focused on Care, Driven by Excellence

Pelvic Venous Insufficiency

Understand the Anatomy

Understand the Pathophysiology

Understand the Imaging

Understand the Treatment



CASPERMEDICALIMAGING

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Definitions

Gonadal Venous Insufficiency

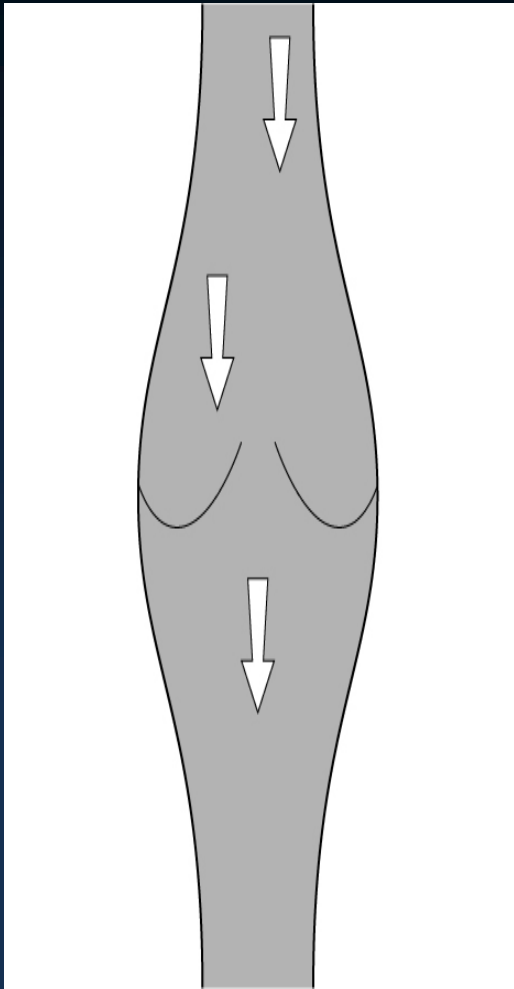
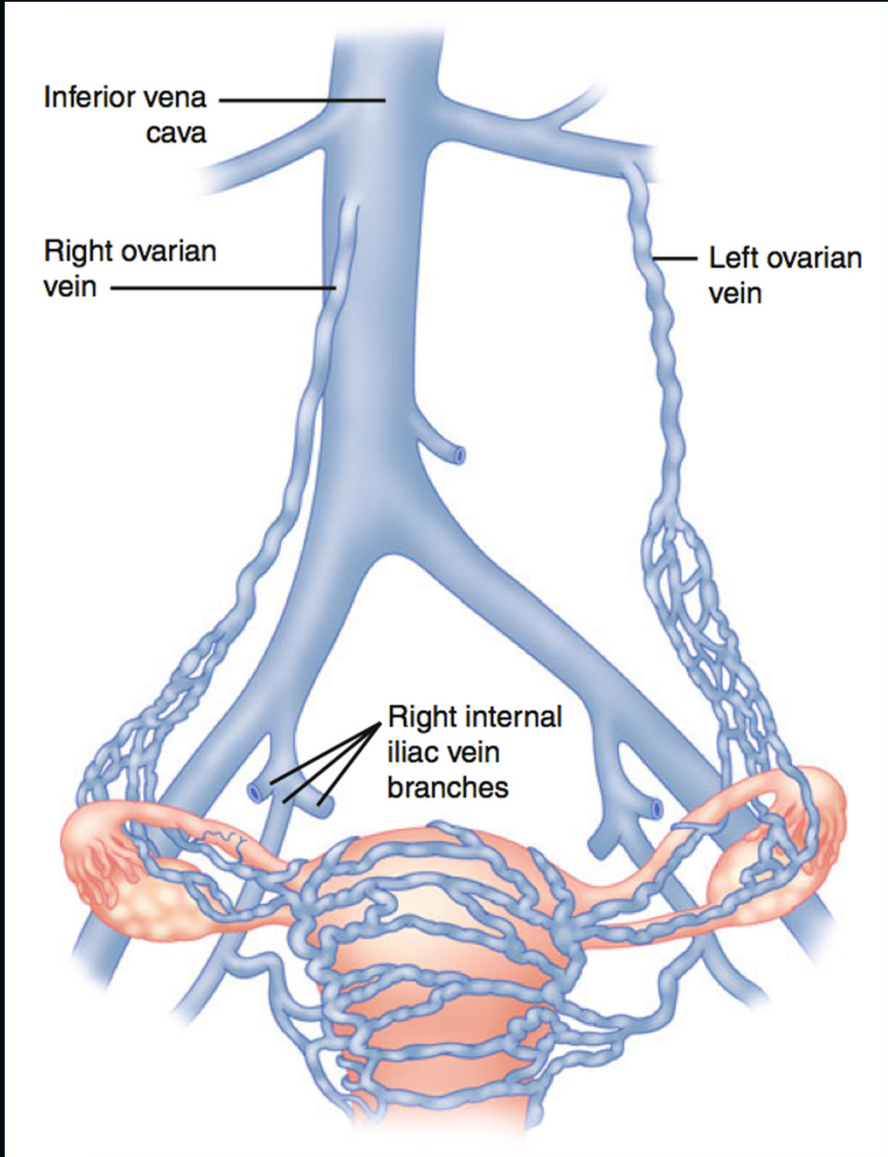
Incompetent venous valves leading to reflux

Chronic Pelvic Pain

Non-Cyclic Pain > 6 Months

Accounts for up to 40% of all Gyn visits

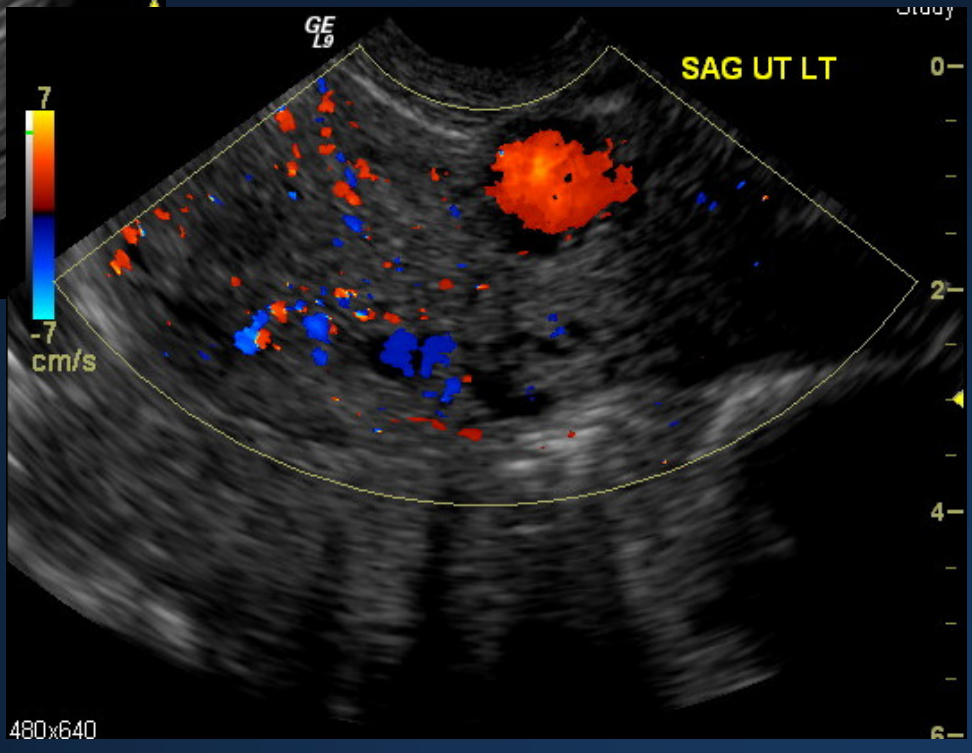
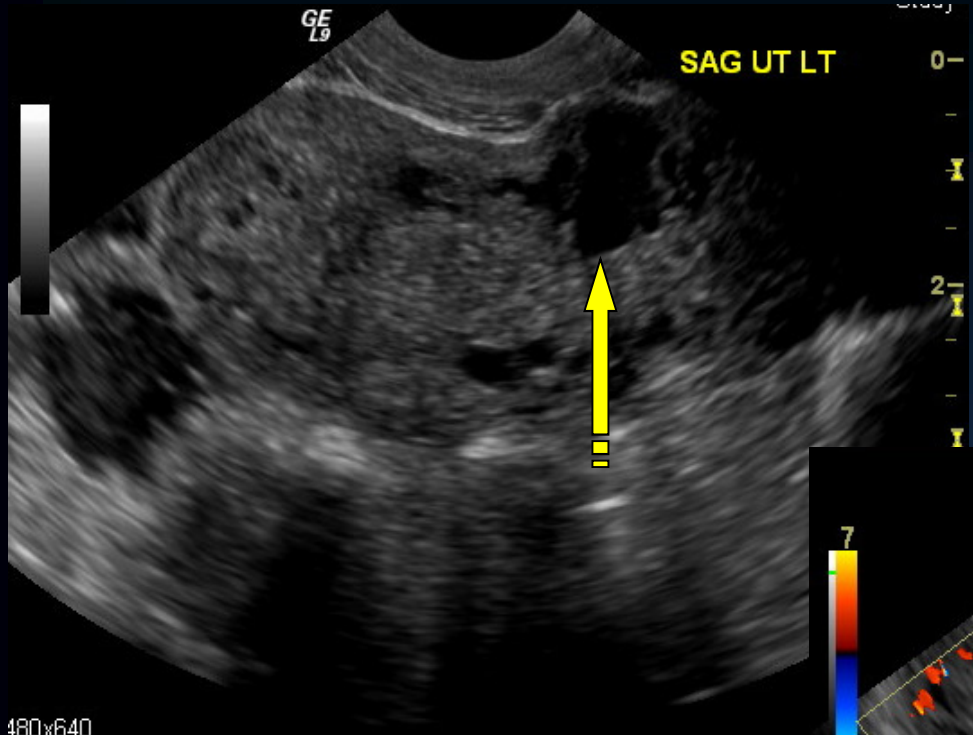
Anatomy



Clinical Vignette

29 year old female with chronic pelvic pain

- No significant past medical history
- Pain increased with standing for long periods
- Pain is severe following intercourse
- Mild urinary urgency





Clinical Vignette

26 year old female with chronic pelvic pain

- No significant past medical history
- Pain increased with standing for long periods
- Pain is moderate following intercourse, worsened with standing
- Multiple stools per day

Image size: 352 x 352
View size: 866 x 866
WL: 876 WW: 2102

S

662087 (26 y , 26 y)
MRA TWIST - MRA TWIST
1188147
11



L

Zoom: 246% Angle: 0
In: 1/39
JPEGLossless:Non-hierarchical-1stOrderPrediction
Thickness: 145.60 mm Location: 9.59 mm



TE: 0.9 TR: 2.6
FS: 3
1/6/14 4:03:05 PM
Made in Osirix

Epidemiology

10% of females will have “reflux” physiology (PVI) *

Up to 59% with PVI will have symptomatology

Variable “penetrance” likely due to overlapping Sx

Multiparous > Nulliparous

* Belenky et al. Ovarian Varices in Healthy Female Kidney Donors AJR:179, 9/2002

(Patho) Physiology

Gonadal (Ovarian) Vein Valve Failure

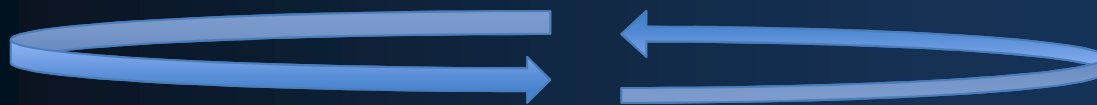
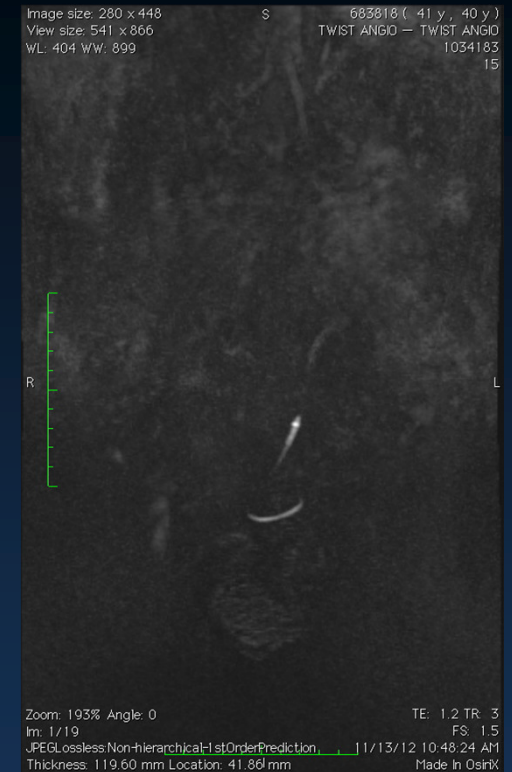
Prior ovarian vein thrombosis

Increased exposure to hormones

Dilatation of the vein 2/2 gravid state

Nutcracker syndrome

Retro-aortic left renal vein



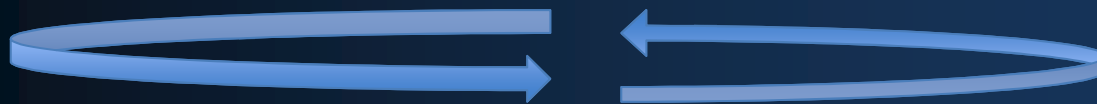
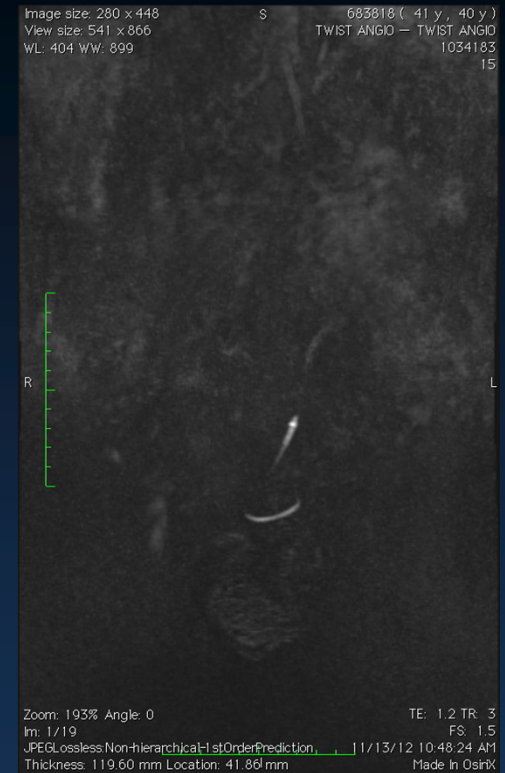
(Patho) Physiology

Gonadal (Ovarian) Vein Valve Failure

Venous Reflux Into Pelvic Varices

Pelvic Venous Cross-Filling

Inability to Re-Circulate Venous Blood From Pelvis



Diagnosis

History and Physical Examination

Visual Analog Scale

Ultrasound

CT

MRI – With Contrast

Diagnostic Venography

Chronic Pelvic Pain Questionnaire: A score of 0 = no pain and 10 = extreme pain

How intense is your overall pain?

0 1 2 3 4 5 6 7 8 9 10

How intense is your pelvic pain while lying down?

0 1 2 3 4 5 6 7 8 9 10

How intense is your pelvic pain while standing?

0 1 2 3 4 5 6 7 8 9 10

How intense is the pain in your leg(s) while lying down?

0 1 2 3 4 5 6 7 8 9 10

How intense is the pain in your leg(s) while standing?

0 1 2 3 4 5 6 7 8 9 10

How intense is the pain in your leg(s) with menstruation?

0 1 2 3 4 5 6 7 8 9 10

How intense is the pain during following intercourse?

0 1 2 3 4 5 6 7 8 9 10

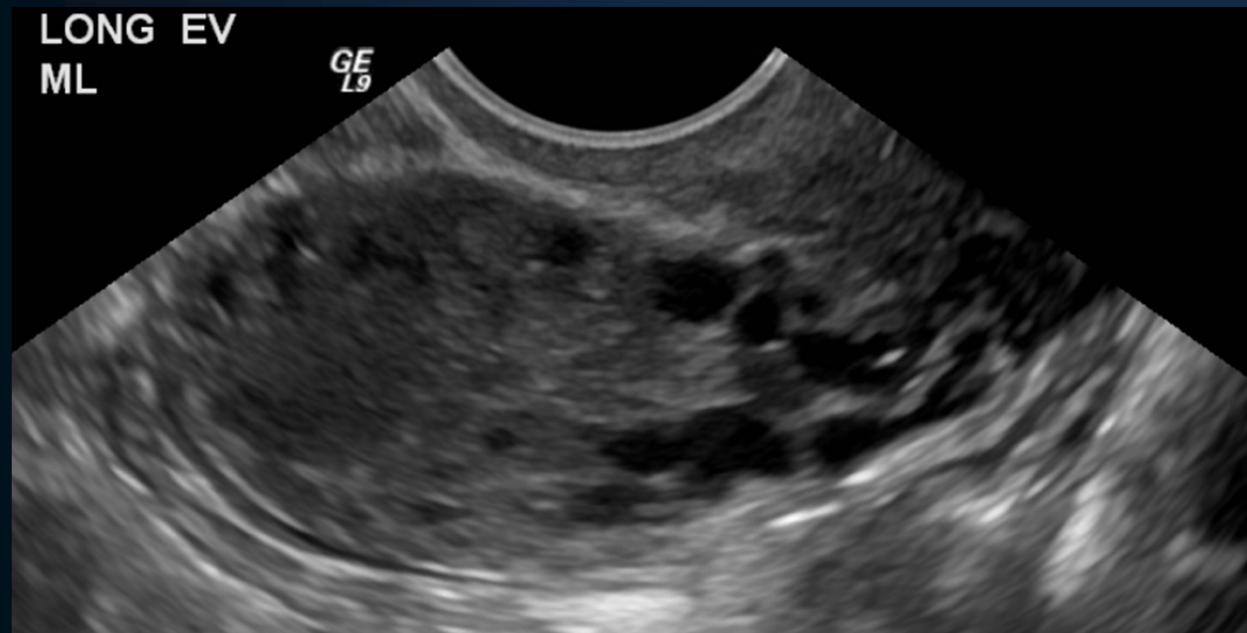
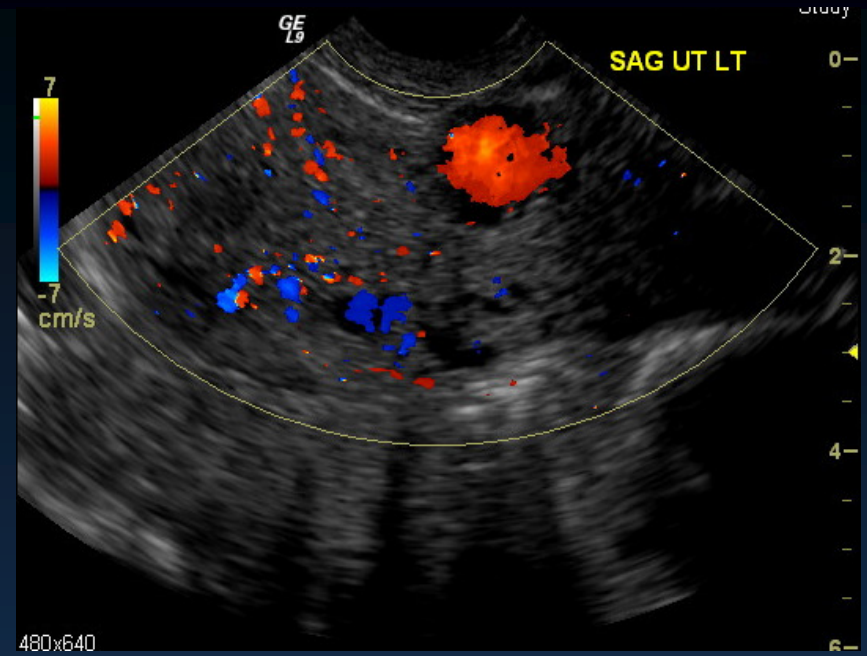
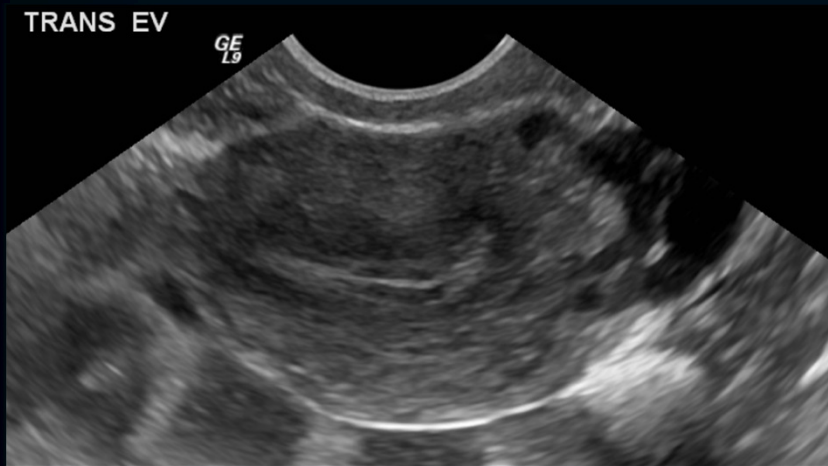
Do you have the urge to urinate more frequently than usual?

0 1 2 3 4 5 6 7 8 9 10

Do you take pain medications on a regular basis? (0 = no, 10 = daily)

0 1 2 3 4 5 6 7 8 9 10

Ultrasound



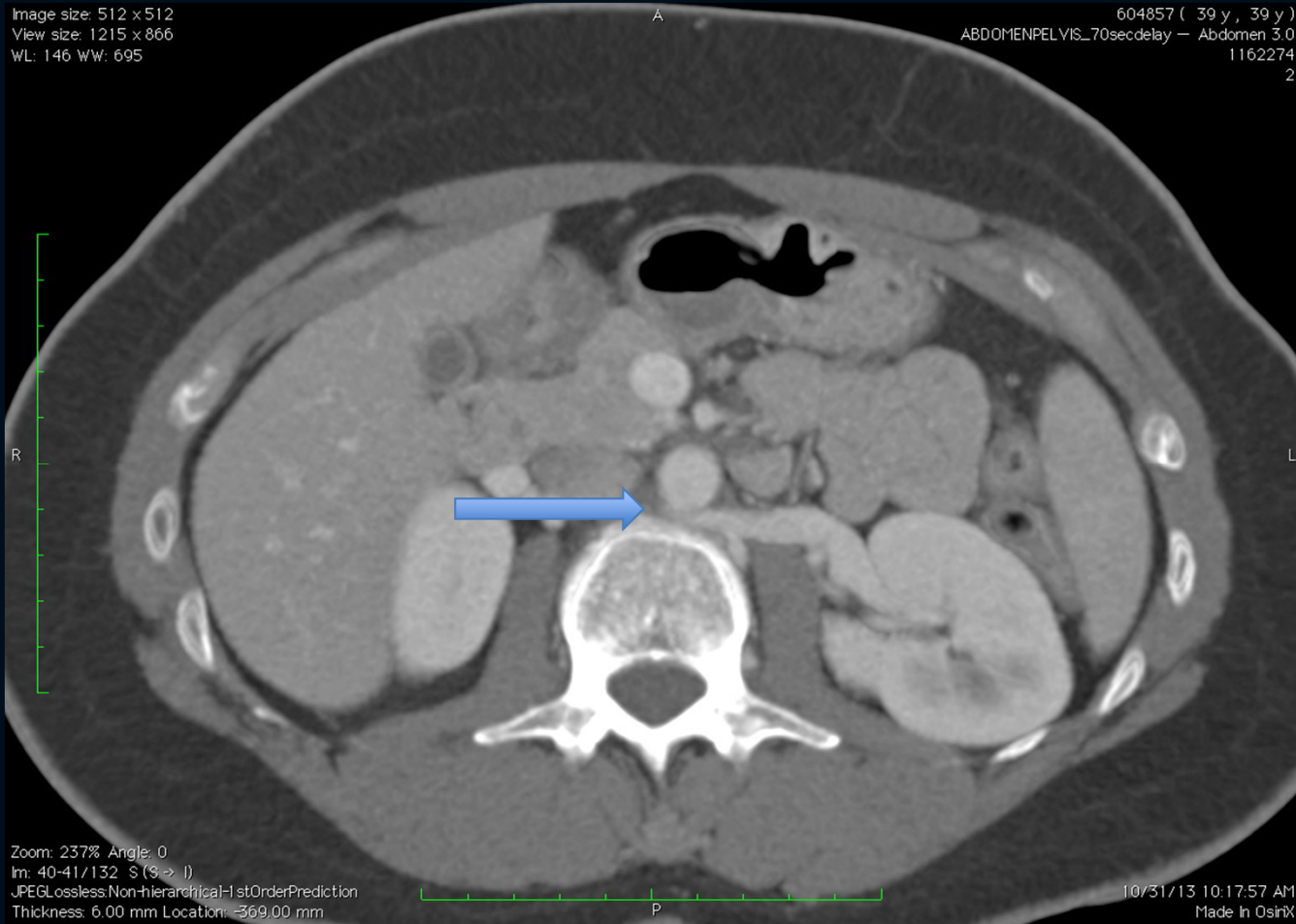
CT



CT

Image size: 512 x 512
View size: 1215 x 866
WL: 146 WW: 695

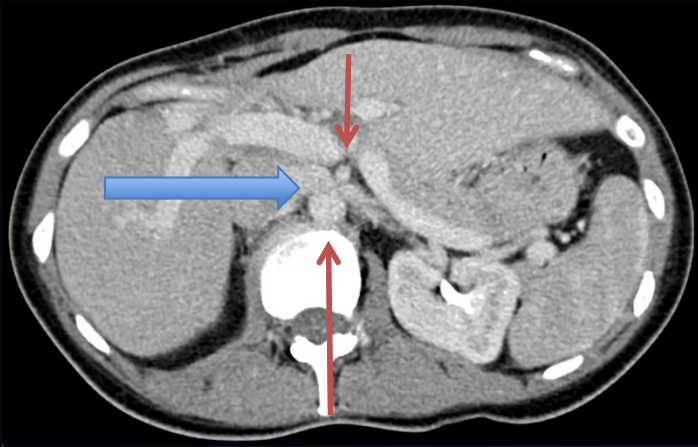
604857 (39 y, 39 y)
ABDOMENPELVIS_70secdelay - Abdomen 3.0
1162274
2



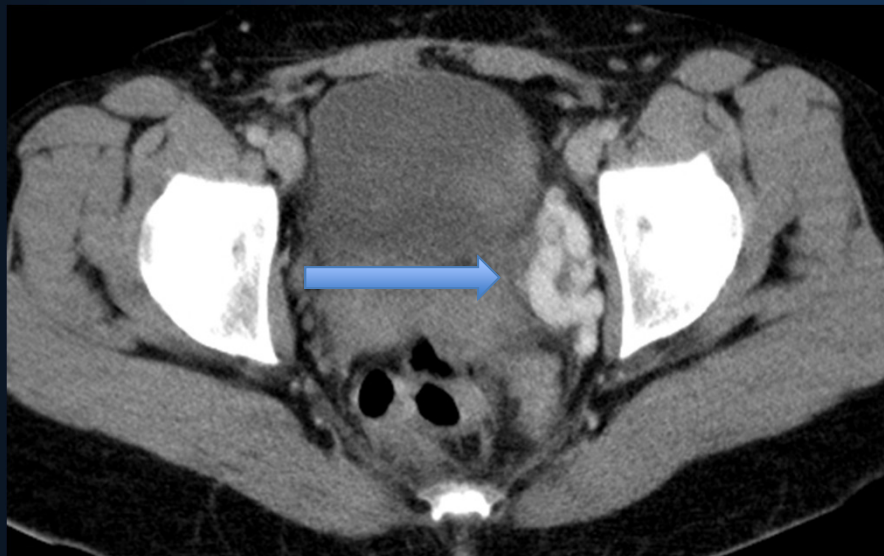
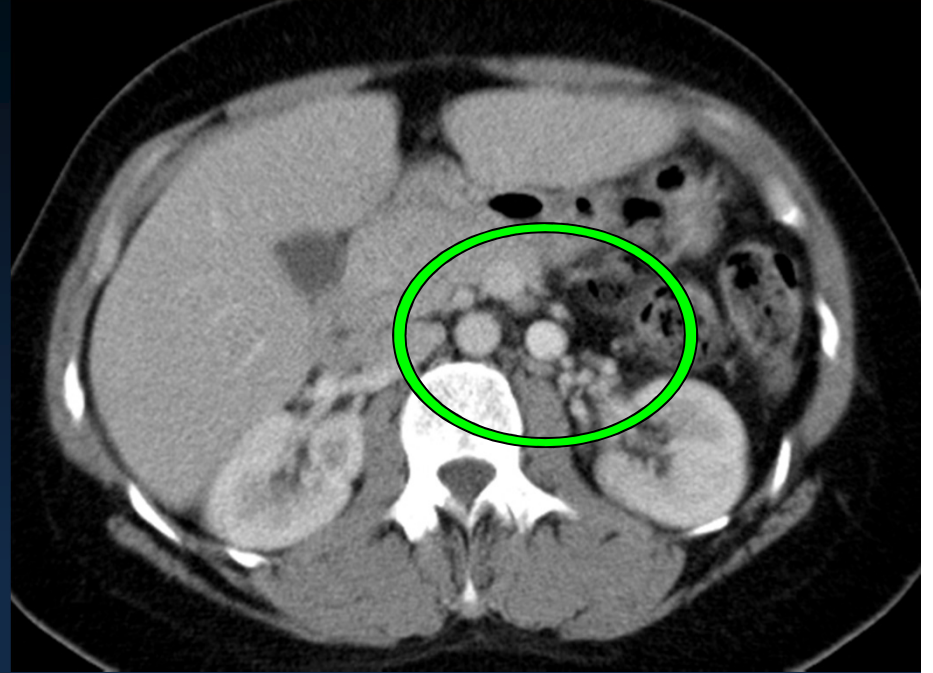
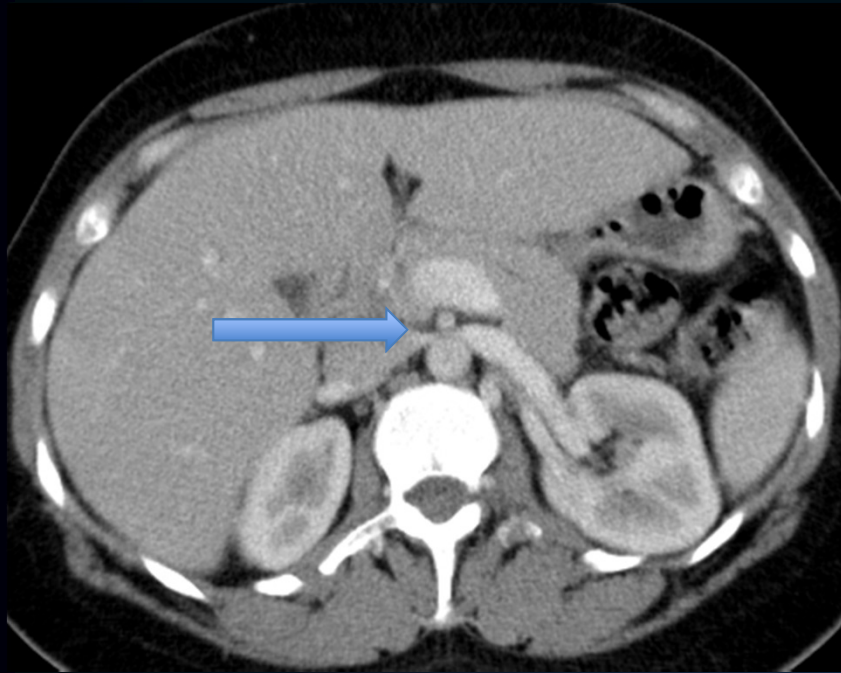
Zoom: 237% Angle: 0
Im: 40-41/132 S (S -> I)
JPEG_Lossless:Non-hierarchical-1stOrderPrediction
Thickness: 6.00 mm Location: -369.00 mm

10/31/13 10:17:57 AM
Made In OsirX

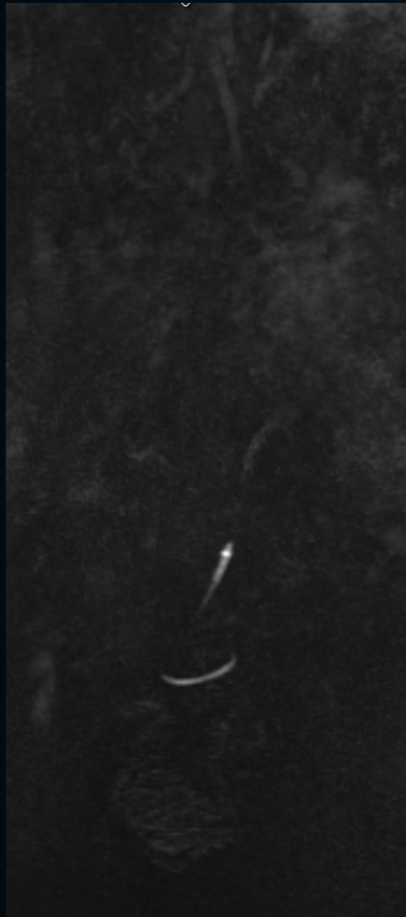
CT



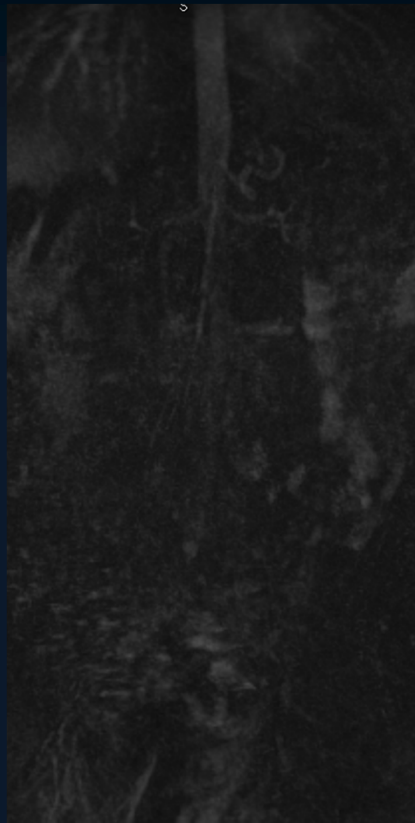
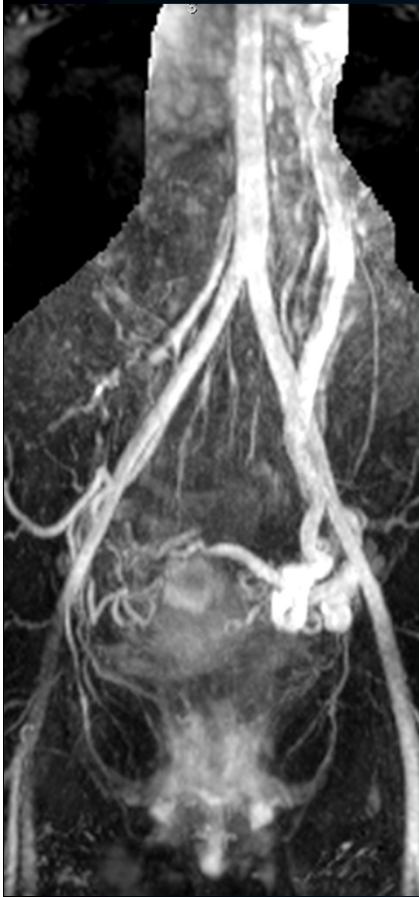
CT



MRI



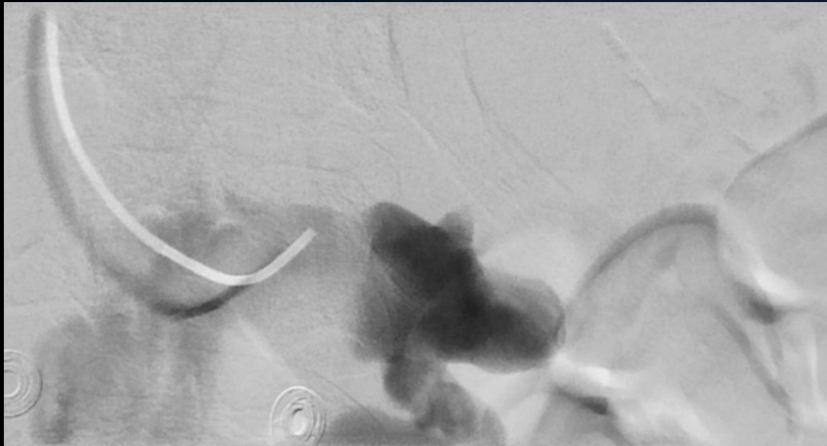
MRI



Digital Subtraction Venography

Image size: 1024 x 1024
View size: 866 x 866
WL: 2675 WW: 3371

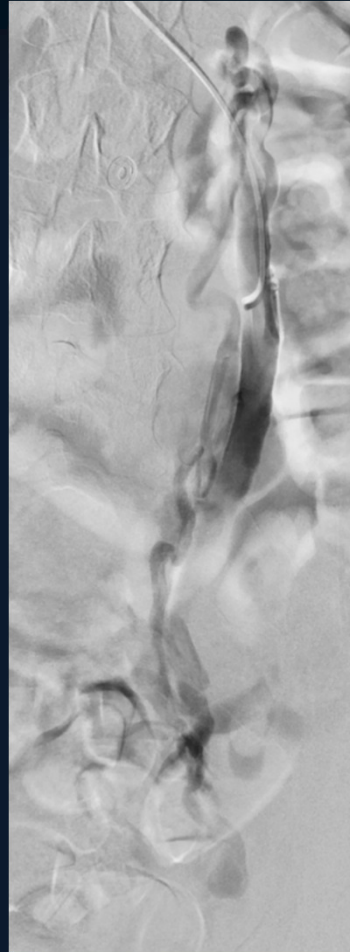
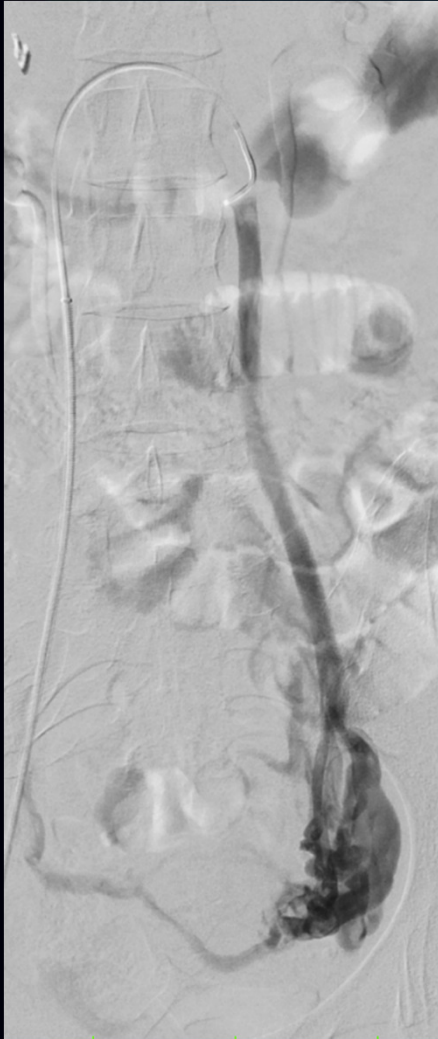
022260 (30 y, 30 y)
CARE Abd -Aorta - CARE Abd -Aorta
1128899
2



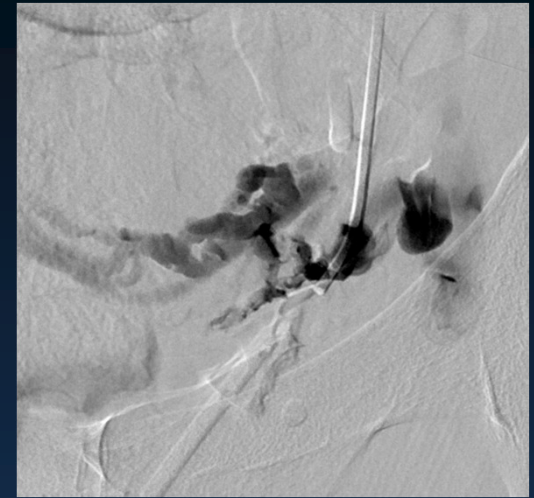
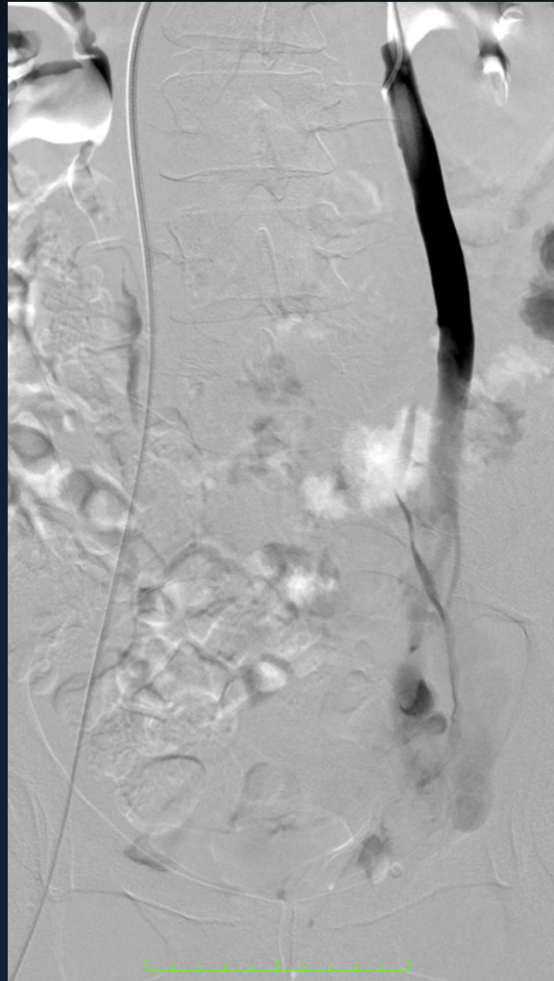
Zoom: 85% Angle: 0
Im: 4/16
Uncompressed
Position: HFS

7/19/13 8:45:51 AM
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Digital Subtraction Venography



Digital Subtraction Venography



Treatment - Options

No treatment

Hormone Modulation

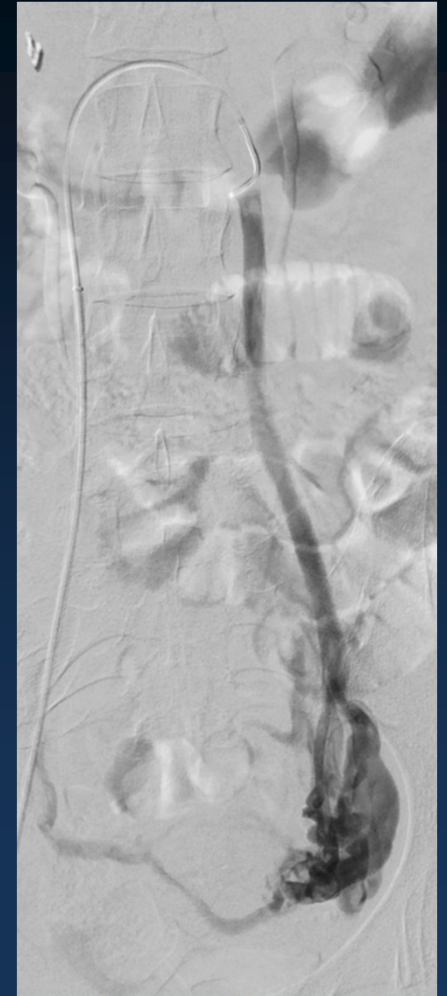
Pelvic Varix Transcatheter Sclerosant Therapy

Gonadal Vein Coil Embolization

Direct Stick Perineal / Vulvar Sclerosant Therapy

Retroperitoneal Dissection / Vein Ligation

Hysterectomy



Treatment – Procedure

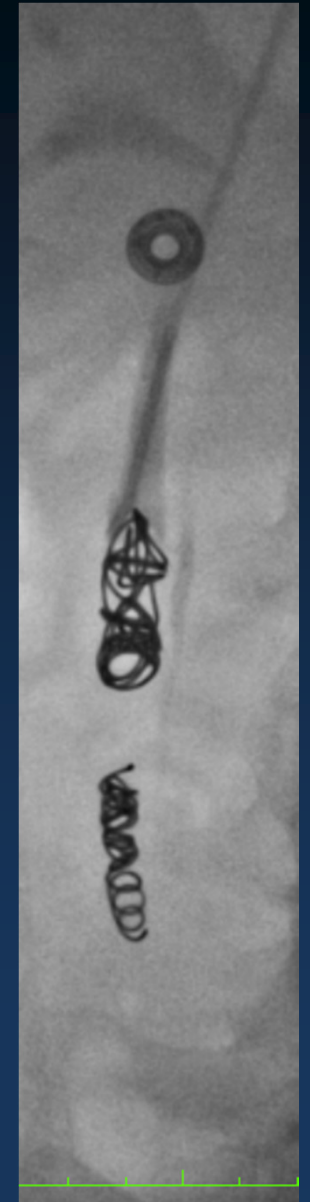
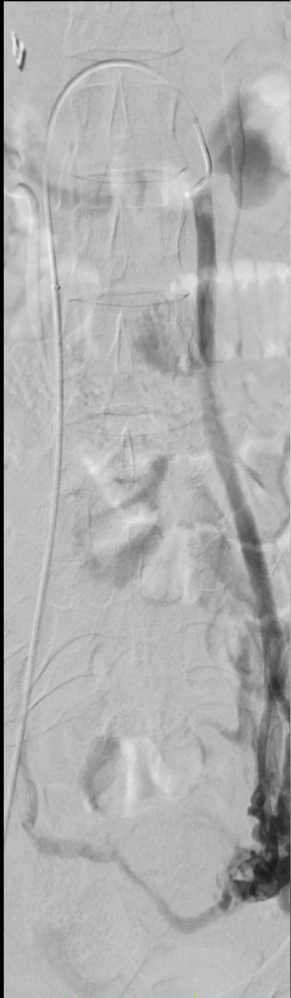
Pre-treatment: Abx, Antiemetic, Steroids

Procedural: Sedative/Hypnotic, Pain Relief

Post Procedural: Steroids, Abx, Antiemetic

Good Technique = Complication Prevention

Treatment



Outcomes

Technical Success: Nears 100%

Symptomatic Relief: > 80%

No Significant change: 13%

Worsened Symptoms: 4%

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Thank You

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