Pelvic Venous Reflux Intervention

What is the Evidence?

Deepak Sudheendra, MD

Director of DVT & Complex Venous Disease Program

Hospital of the University of Pennsylvania

Philadelphia, PA

THE VEINS AT VIVA

Pelvic Venous Insufficiency (PVI) Overview

- **Affects BOTH multiparous & nulliparous women of childbearing age but can be seen in post menopausal women**
- **Chronic pelvic pain (CPP), dyspareunia, vulvar/thigh varicosities, low back pain**
- **Dilated gonadal/pelvic veins with retrograde flow esp w/standing**
- **Can cause constipation & bladder incontinence**
- **Delay in diagnosis**

Deepak Sudheendra, MD

THE VEINS AT VIVA
CME Accredited

Laparoscopy and cross sectional imaging may fail to diagnose pelvic varices

- **Patient is supine**
- **CO_2 in peritoneal cavity increases intraabdominal pressure – veins decompress**
- **Diagnosis is NOT considered in the differential**

Deepak Sudheendra, MD

THE VEINS AT VIVA
CME Accredited

CLINICAL STUDY

Effectiveness of Embolization or Sclerotherapy of Pelvic Veins for Reducing Chronic Pelvic Pain: A Systematic Review

Jane P. Daniels, PhD, Rita Champaneria, MPhil, Laila Shah, MSc, Janesh K. Gupta, FRCOG, Judy Birch, BSc, and Jonathan G. Moss, FRCS, FRCR

ABSTRACT

Purpose: Chronic pelvic pain (CPP) in the presence of dilated and refluxing pelvic veins is often described as pelvic congestion syndrome (PCS), although the causal relationship between pelvic vein incompetence and CPP has not been established. Percutaneous embolization is the principal treatment for PCS, with high success rates cited. This study was undertaken to systematically and critically review the effectiveness of embolization of incompetent pelvic veins.

Materials and Methods: A comprehensive search strategy encompassing various terms for pelvic congestion, pelvic pain, and embolization was deployed in 17 bibliographic databases, with no restriction on study design. Methodologic quality was assessed. The quality and heterogeneity generally precluded meta-analysis. Results were tabulated and described narratively.

Results: Twenty-one prospective case series and one poor-quality randomized trial of embolization (involving a total of 1,308 women) were identified. Early substantial relief from pain was observed in approximately 75% of women undergoing embolization, and generally increased over time and was sustained. Significant pain reductions following treatment were observed in all studies that measured pain on a visual analog scale. Repeat intervention rates were generally low. There were few data on the impact on menstruation, ovarian reserve, or fertility, but no concerns were noted. Transient pain was common following foam embolization, and there was a $< 2\%$ risk of coil migration.

Conclusions: Embolization appears to provide symptomatic relief of CPP in the majority of women and is safe, although the quality of the evidence is low.

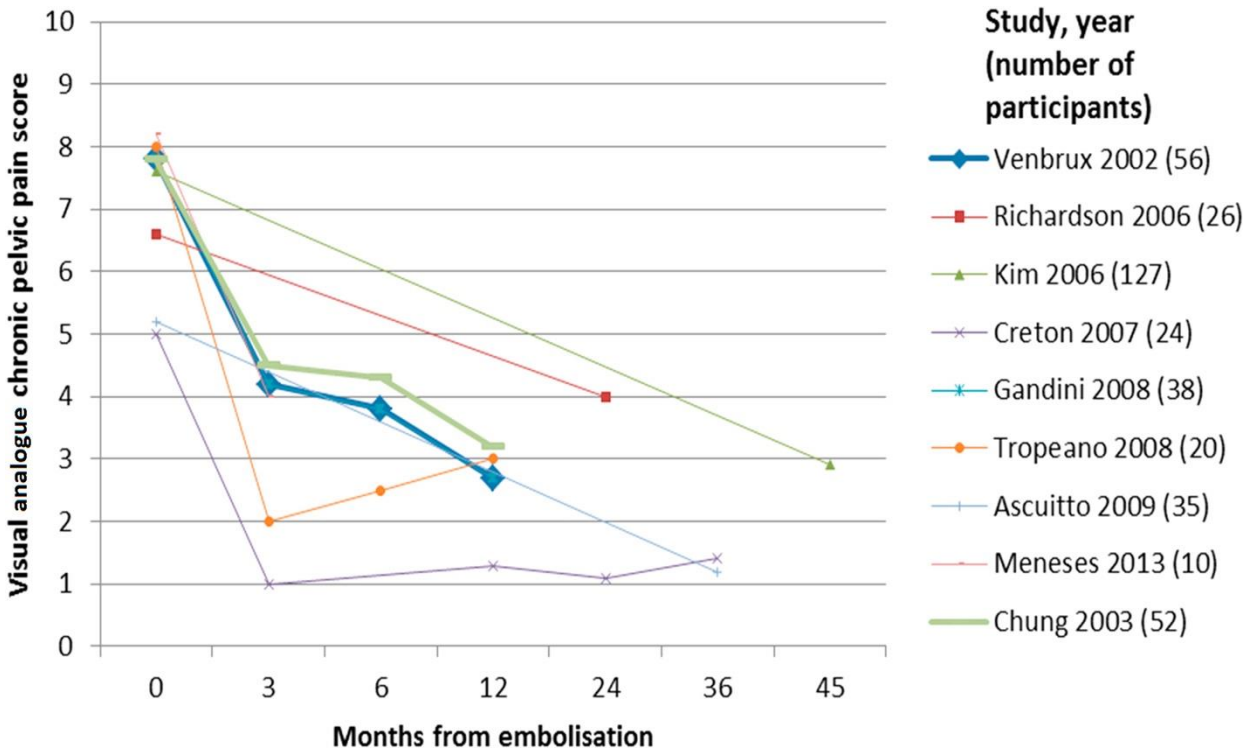
- Review the effectiveness of embolization of incompetent pelvic veins
- 21 case series & 1 poor-quality randomized trial (total 1,308 women)

Deepak Sudheendra, MD

Daniels J et al. Effectiveness of embolization or sclerotherapy of pelvic veins for reducing CPP: A systematic review. J Vasc Interv Radiol 2016; 27:1478–1486

THE VEINS AT VIVA
CME Accredited

Significant improvement in pain



- 229 sclerotherapy; 660 coil embolization; 405 sclero-therapy + embolization
- 75% significant early symptom relief that was sustained over time
- Low reintervention rate
- <2% risk coil migration

Deepak Sudheendra, MD

Daniels J et al. Effectiveness of embolization or sclerotherapy of pelvic veins for reducing CPP: A systematic review. J Vasc Interv Radiol 2016; 27:1478–1486

THE VEINS AT VIVA
CME Accredited

Conclusion

Embolization appears to provide symptomatic relief of CPP in the majority of women & is safe, although the quality of the evidence is low.

Insurance Issues

Deepak Sudheendra, MD

THE VEINS AT VIVA
CME Accredited

CLINICAL STUDY

Pelvic Venous Disorders in Women due to Pelvic Varices: Treatment by Embolization: Experience in 520 Patients

Miguel A. De Gregorio, PhD, MD, EBIR, José A. Guirola, PhD, MD, EBIR, Enrique Alvarez-Arranz, MD, María Sánchez-Ballestin, MD, José Urbano, PhD, MD, EBIR, and Sergio Sierre, MD

ABSTRACT

Purpose: The purpose of this study was to determine the efficacy and safety of embolization treatment in pelvic venous disorders in women refluxing in the ovarian and or internal iliac veins in women with chronic pelvic pain.

Materials and Methods: A retrospective study conducted from January 2000 to June 2017 in 617 patients diagnosed with pelvic venous disorders (PeVDs) with a mean age of 43.2 ± 7.2 years were treated using an embolization procedure. A total of 520 were included, and 97 patients were excluded. The main inclusion criteria were PeVD symptoms for more than 6 months and transvaginal Doppler ultrasonography (TV-DUS) diagnosis of varicose veins in the pelvis with a diameter greater than 6 mm. The main objective was to embolize the 4 main pelvic venous plexi (ovarian and internal iliac veins) whenever possible. Follow-up was performed using clinical symptoms (visual analog scale) and TV-DUS at 1, 3, 6, and 12 months and then every year up to 5 years.

Results: The technical success (embolization of the 4 main pelvic veins) was achieved in 84.4% of the patients. The average follow-up was 58.7 ± 5.7 months. The visual analog scale was improved from 7.63 ± 0.9 points pretreatment to 0.91 ± 1.5 at 5 years. A total of 26 patients (5%) presented with symptom recurrence and pelvic varicose veins. There were 57 minor complications (10.9%) and 11 major complications (2.1%), with 7 cases (1.34%) of device migration to the lung.

Conclusions: The embolization of pelvic varicose veins is a safe and effective procedure. The selection of the embolic agents and the number of veins needed to be treated.

- Retrospective study of 520 pts
- PVI symptoms > 6 mos
- Objective was to embolize 4 main pelvic venous plexi

Deepak Sudheendra, MD

THE VEINS AT VIVA
CME Accredited

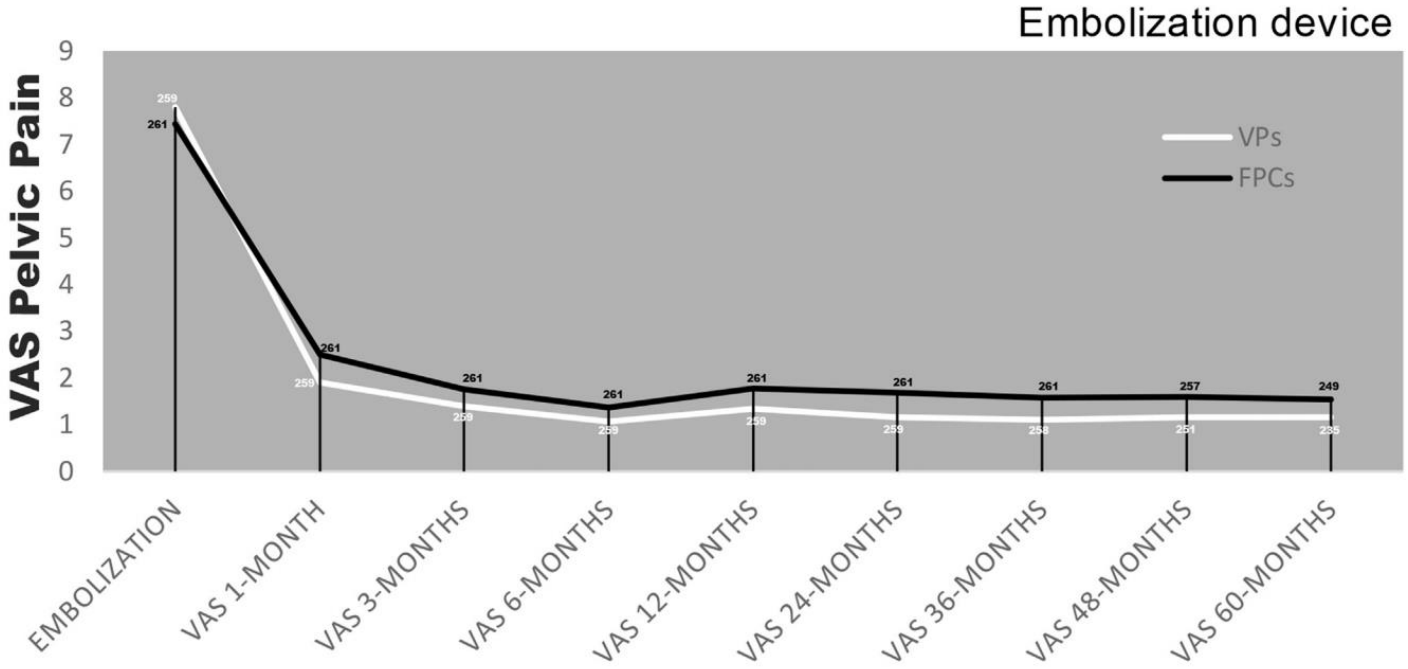


Figure 2. The evolution of pelvic pain by visual analog scale in women with pelvic venous disorder treated by an embolization procedure using metallic devices (coils or plugs). FPC = fibered platinum coil; VP = vascular plug.

Table 7. Other Symptoms at 1 Year and 5 Years Follow-up

Variable	FPC (Preembolization)	AVP (Preembolization)	FPC (1Y) n = 261	AVP (1Y) n = 259	FPC (5Y) n = 261	AVP (5Y) n = 259	*P* Value
Disappearance of dyspareunia	146	125	106/146 (72.6%)	125/151 (82.7%)	139/151 (92.5%)	118/142 (83.0%)	.015
Disappearance of Of urinary urgency	50	44	18/50 (36%)	26/44 (59.0%)	35/44 (79.5%)	14/50 (28.0%)	.02
Disappearance of dysmenorrhea	145	168	48/145 (33.1%)	76/168 (45.2%)	89/168 (52.9%)	76/145 (52.4%)	.017
VAS score improvement	7.4 ± 0.9	7.8 ± 0.9	224/261 (85.8%)	243/259 (93.8%)	207/224 (92.4%)	238/258 (92.2%)	.031

AVP = Amplatzer vascular plug; FPC = fibered platinum coil; VAS = visual analog scale.

- 84.4% technical success
- VAS 7.63 (pre) to 0.91 (5 yrs)
- 5% symptom recurrence
- No difference in pts treated with coils or AVP

Deepak Sudheendra, MD

THE VEINS AT VIVA
CME Accredited

De Gregorio MA et al. Pelvic venous disorders in women due to pelvic varices: Treatment by embolization: Experience in 520 patients. JVIR 2020 (In Press)

Conclusion

- Very high degree of patient satisfaction
- Embolization appears to provide symptomatic relief of CPP in the majority of women & is safe, although the quality of the evidence is low (2B: Society of Vascular Surgery/American Venous Forum).
- No evidence that one embolic material is better than another
- No consensus on # pelvic veins to be treated

Penn IR Case Experience

- 70 yo s/p TAH presents 5 yr h/o labial varicosities, painful intercourse, increased urine frequency, and chronic pelvic pain. Symptoms WORSE after OV sclerotherapy.

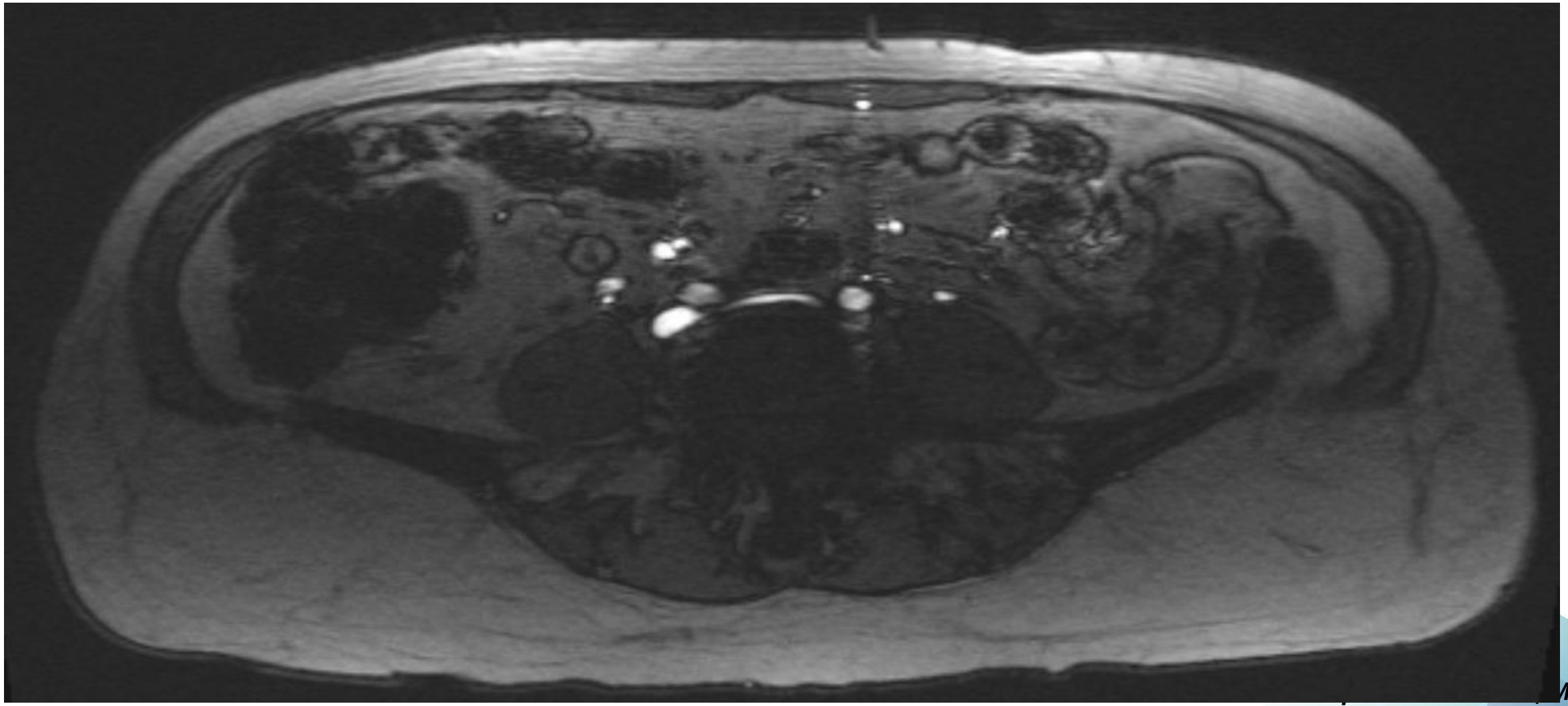
- Has tried pelvic floor PT, vaginal suppositories, CBD oil, tramadol, naltrexone, Advil

- CPP worse w/walking or sitting for prolonged periods

Deepak Sudheendra, MD

THE VEINS AT VIVA
CME Accredited

Evaluate for iliac vein compression

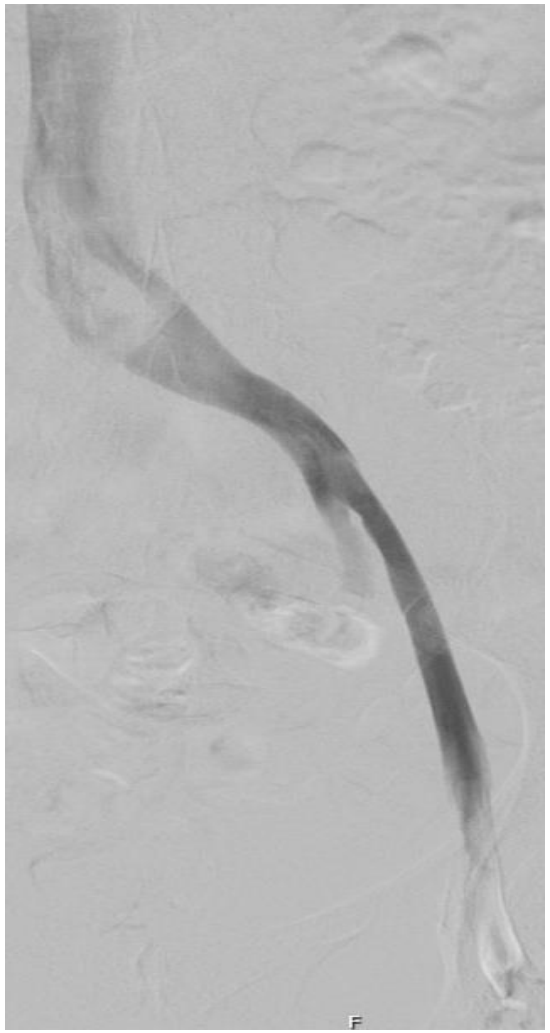


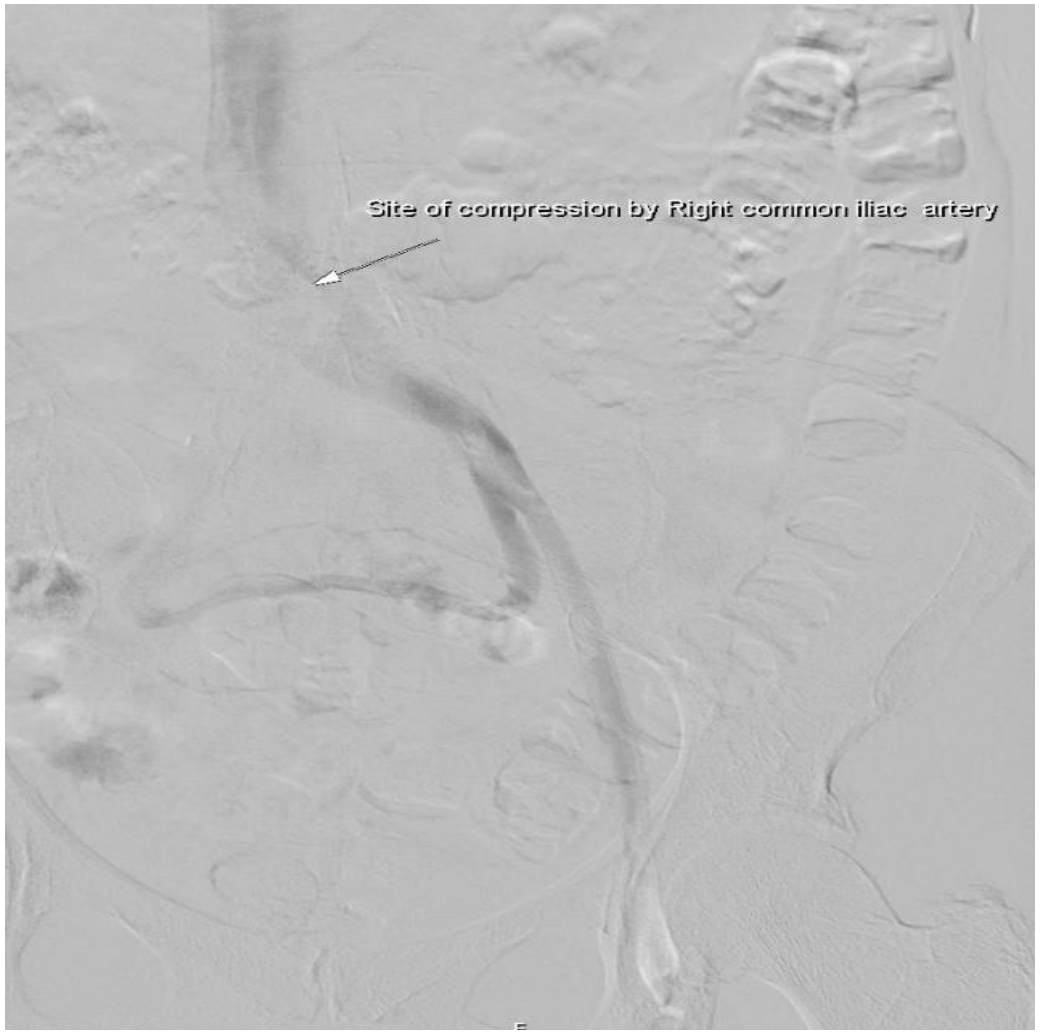
MD

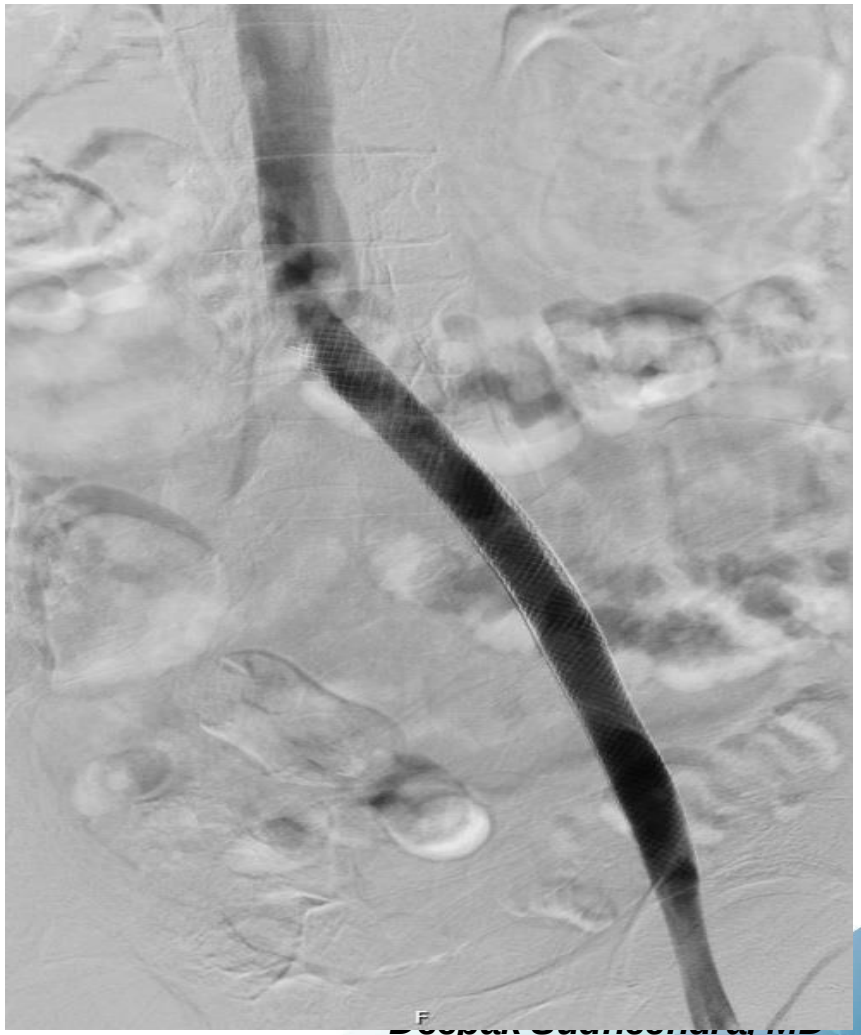
THE VEINS AT VIVA

CME Accredited

Treat iliac vein compression BEFORE coiling







THE VEINS AT VIVA
CME Accredited

Future Directions

- PVI requires a multi-disciplinary approach & work-up along with education of PCPs and Ob-Gyns
- Limited data on PVI treatment due to poor RCT, insurance denials, & failure to refer/diagnose
- Role of compression syndromes such as May Thurner and Nutcracker. How do you differentiate?

