Pelvic Problems Solved Minimally

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Overview

- Fibroids
- Varicocoele
- Pelvic Venous Congestion Syndrome
- ***Treated by minimally invasive vascular access***

Fibroids

- Up to 25% of women
- 30 - 40% of all hysterectomies (US)
- One in five New Zealand women will undergo hysterectomy by age 54[1]

1. Working Party of the New Zealand Guidelines Group. An Evidence-based Guideline for the Management of Uterine Fibroids; April 2000

Fibroid Embolisation

- Uterine Artery Embolisation (UAE or UFE)
- A brief History in Time
  - 1979 - Initial use in treating post-partum haemorrhage reported
  - 1995 - Pre-op for myomectomy
  - 1995 - Treatment for fibroids[1]
  - >25,000 procedures annually[2]

1. Ravina JH, et al. Lancet 1995; 346: 671-2.
2. Goodwin et al. Obstet Gynecol 2008; 111: 22–33

Evidence

- 4 RCT
  - 3 to hysterectomy, 1 to myomectomy
- Prospective cohort studies and Registries
  - Substantial data on outcomes and safety
    - > 5,000 patients studied prospectively
  - More accurate data on frequency of complications especially when rare

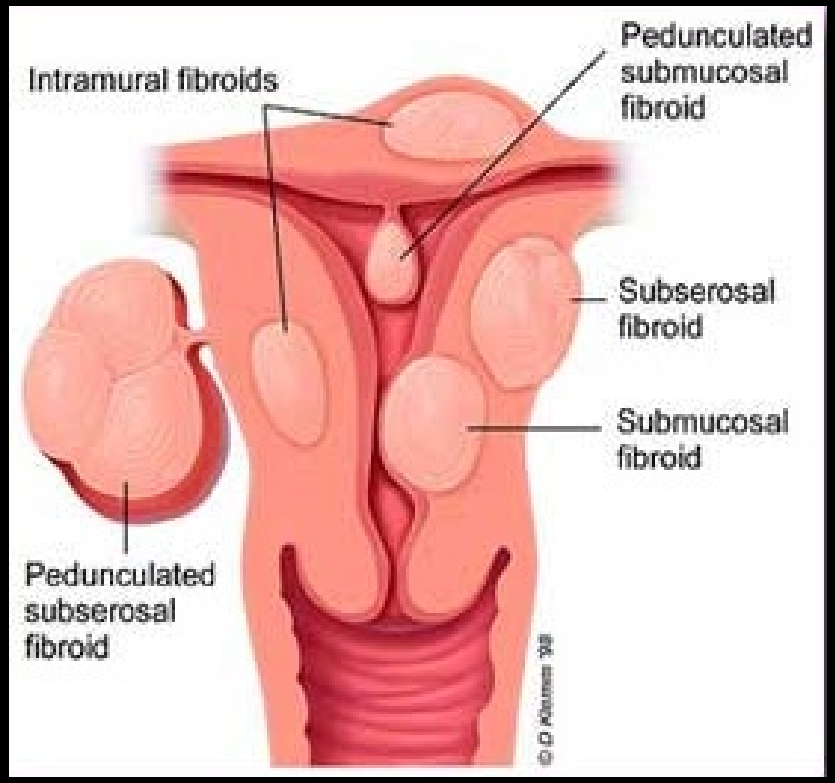
Patient Selection

- Accepted indications (strong evidence base)
  - Menorrhagia
  - Dysmenorrhoea
  - 'Bulk' related symptoms including;
    - Abdominal bloating
    - Frequency / Nocturia
    - Constipation
- Relative Indications (moderate evidence base)
  - Preserve fertility where other treatments for fibroids have failed or are not indicated
  - Adenomyosis

Contra-indications

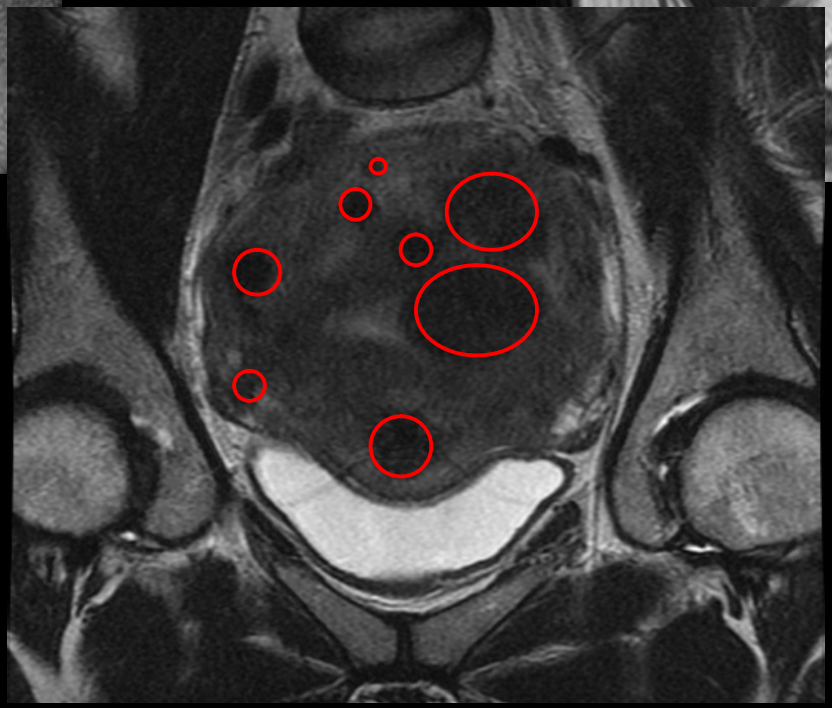
- The desire to avoid hysterectomy under any circumstances
  - There is a small risk of hysterectomy as a result of uterine sepsis after the procedure (0.1 - 2.9% at 12 months)
- Pelvic infection
- Coagulopathy
- Relative Contra-indication
  - Sub-mucosal fibroids on a narrow stalk ("pedunculated" fibroids)

Fibroid Morphology

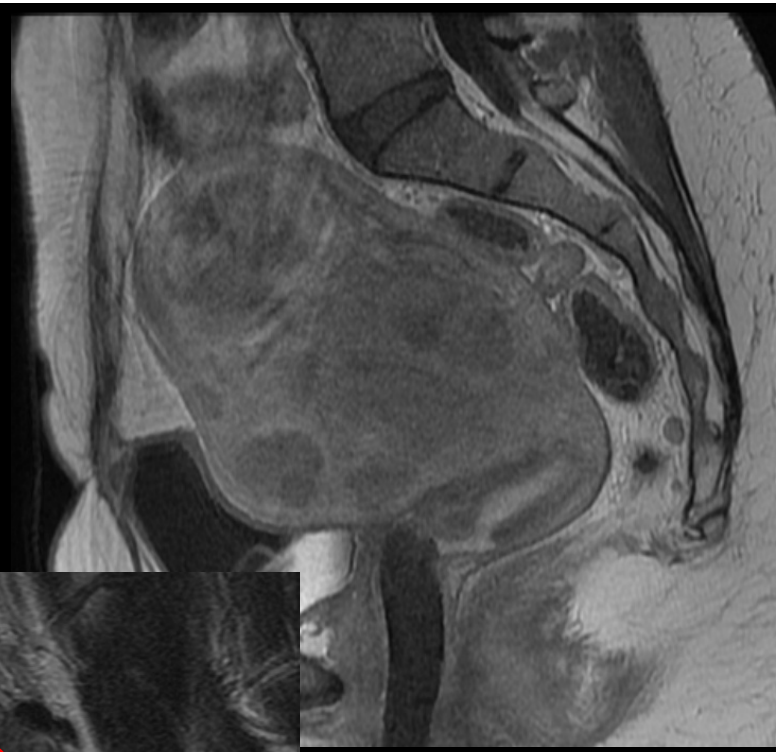


MRI Pelvis

T2W Sagittal



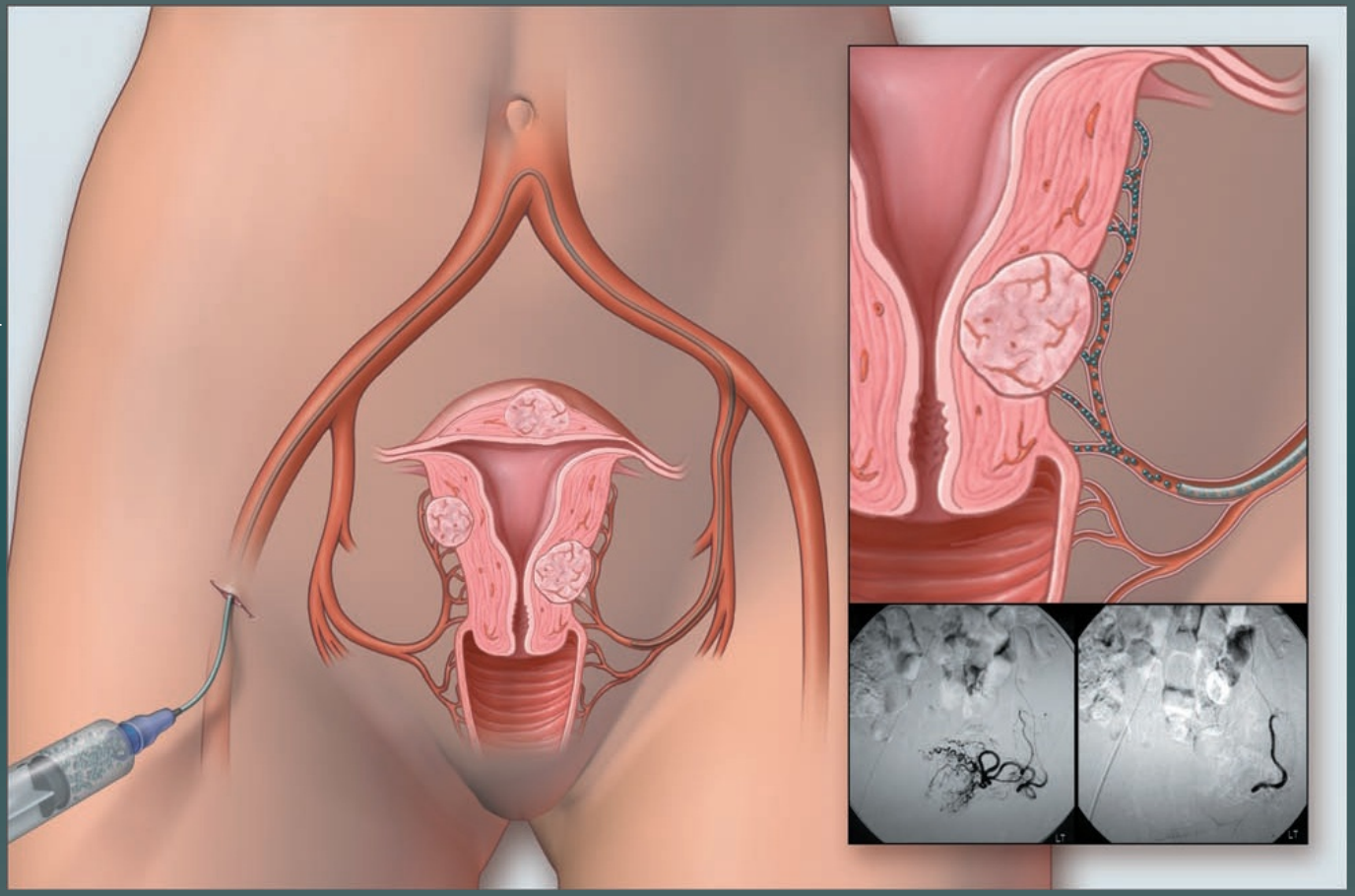
T2W Coronal



T1W Sagittal

Technique

- 5mm incision
- CFA Puncture
- Catheter to UA
- Inject particles
- PCA pump
- Overnight stay



Embolic Agents

- Poly Vinyl Alcohol
  - Used since 1952
  - Inert / 'biocompatible'
  - Nonresorbable
- Tris acryl gelatin spheres ('Embospheres')
  - Developed in 1996
  - Inert / 'biocompatible'
  - Nonresorbable

Short-term Results[1]

- 90 % significant improvement in symptoms
  - Menorrhagia & pain
- 70 – 80% improvement in bulk related symptoms
- Fibroid embolisation compared with hysterectomy
  - Less painful at 24 hours (pain score 3 – 5 / 10)
  - Shorter hospital stay
  - Quicker return to work (1 - 3 weeks)
- No difference in adverse events

1. REST investigators. N Engl J Med 2007;356:360-70
2. Spies et al. Obstet Gynecol 2005; 106: 933–939

Mid-term results

- No difference in QOL at 12 months
- Groups equally satisfied –
  "recommend procedure to a friend"
  - Around 90% for both UFE & Surgery
- Better improvement score for surgery at 12mths
- UFE more likely to require re-intervention

Outcomes

- 3 and 5 year outcome data[1,2]
- Significant improvement in symptoms and QOL at 6 months, returning into normal range
  - 85% maintained to 3 yrs
  - 75% maintained to 5 yrs
- 20% need re-intervention over 5 years[1]
  - Repeat UFE
  - Myomectomy / Hysterectomy

1. Goodwin et al. Obstet Gynecol 2008; 111: 22–33
2. Spies et al. Obstet Gynecol 2005; 106: 933–939

Complications

- 1 % risk of hysterectomy for infection or pain
  - Usually 2 – 8 weeks post procedure
- 3 - 4 % risk of persistent vaginal discharge
  - Almost always resolves following D&C
- Risk of premature menopause – 'age related'
- Effect on ovarian function similar to myomectomy and hysterectomy

Summary

- Safety and efficacy fibroid embolisation are well demonstrated
- Rapid recovery and return to normal activities
- Reasonable to offer to women wishing to preserve fertility where myomectomy is not an option

Varicocoele

- Dilatation of the pampiniform venous plexus within the scrotum

- Common
  - 15% healthy fertile males
  - 18% with ultrasound
  - 40% of men with primary infertility
  - 75% of men with secondary infertility

- Higher prevalence in taller, thinner men

Cigdem T & Goldstein M. J of Urol. Nov 2006; 176: 1912-1913.

Diagnosis

- Clinical
  - Grade I is palpable only during valsalva
  - Grade II is palpable without valsalva
  - Grade III is visible varicocoele.
- US
  - Performed supine and standing
  - With and without valsalva manoeuvre
  - Retrograde flow >2 sec on colour Doppler US
  - Vessels larger than 3 mm

Diagnosis

- Whether the Doppler ultrasound diagnosis of varicocoele adds anything significant to physical examination remains unproven

- Conflicting data regarding the value of operating on sub-clinical varicocoeles

Who should we treat?

- Symptomatic patients
- Asymptomatic adolescents +/- testicular atrophy
- Male infertility

Who do we treat ?

- Varicocoele is not a life-threatening condition

- Symptomatic varicocoele
  - Pain worsening over the course of a day
  - Typically is relieved by lying flat
  - Not responsive to conservative treatment

- Improvement in pain in >96%

1. Gandini R et al. Radiology 2008; 246: 612 - 618

Why treat asymptomatic adolescent varicocoele?

- 15% incidence of adolescent varicocoele
- Testicular atrophy (volume <20 ml, length <4 cm)
- Treatment
  - Rebound testicular growth in 50–90%
  - Improvement in semen quality[1,3]
- May prevent some patients with borderline testicular dysfunction progressing to irreversible clinical infertility in adulthood[2]

1. Laven JS, et al. Fertil Steril. 1992; 58(4): 756
2. Lord D J, Burrows P. Tech in Vas and Interv Rad. 2003; 6: 169-175 169
3. Diamond D A. Cur Op Urology 2007;17: 263–267

Management[1]

- For most adolescent patients
  - Equal testicular volume
  - Asymptomatic
- Observation and regular follow-up examinations
  - 6 – 12 months
- Regardless of varicocoele size

1. Diamond D A. Cur Op Urology 2007;17: 263–267

Should we treat for male infertility ?

- Short answer is

  No[1]

  But

- Scrotal varicocoeles are the most common cause of poor sperm production and decreased semen quality[2]

1. Evers JL, Collins JA. Cochrane Database of Systematic Reviews 2001
2. WHO. Fertil Steril 1992; 57(6):1289

Should we treat for male infertility ?

- Results in improved sperm count
- Varicocoele treatment is the most commonly performed procedure for male infertility

"Believing that interventional radiology offers safe, effective, minimally invasive therapy, and that patients wanting treatment will find it, we do not deny any patient treatment."

I. Lord D J, Burrows P. Tech in Vas and Interv Rad. 2003; 6: 169-175 169

Male Infertility Best Practice Policy Committee of the American Urological Society

- Varicocoele treatment for infertility should be offered when all of the following are present:

  - Palpable varicocoele
  - The couple has documented infertility
  - The female has normal fertility or potentially correctable infertility
  - One or more abnormal semen parameters or sperm function test results

1. AUA Practice Guidelines Committee. J of Urol. 2002; 167: 2138 - 2144

Is there a radiation risk?

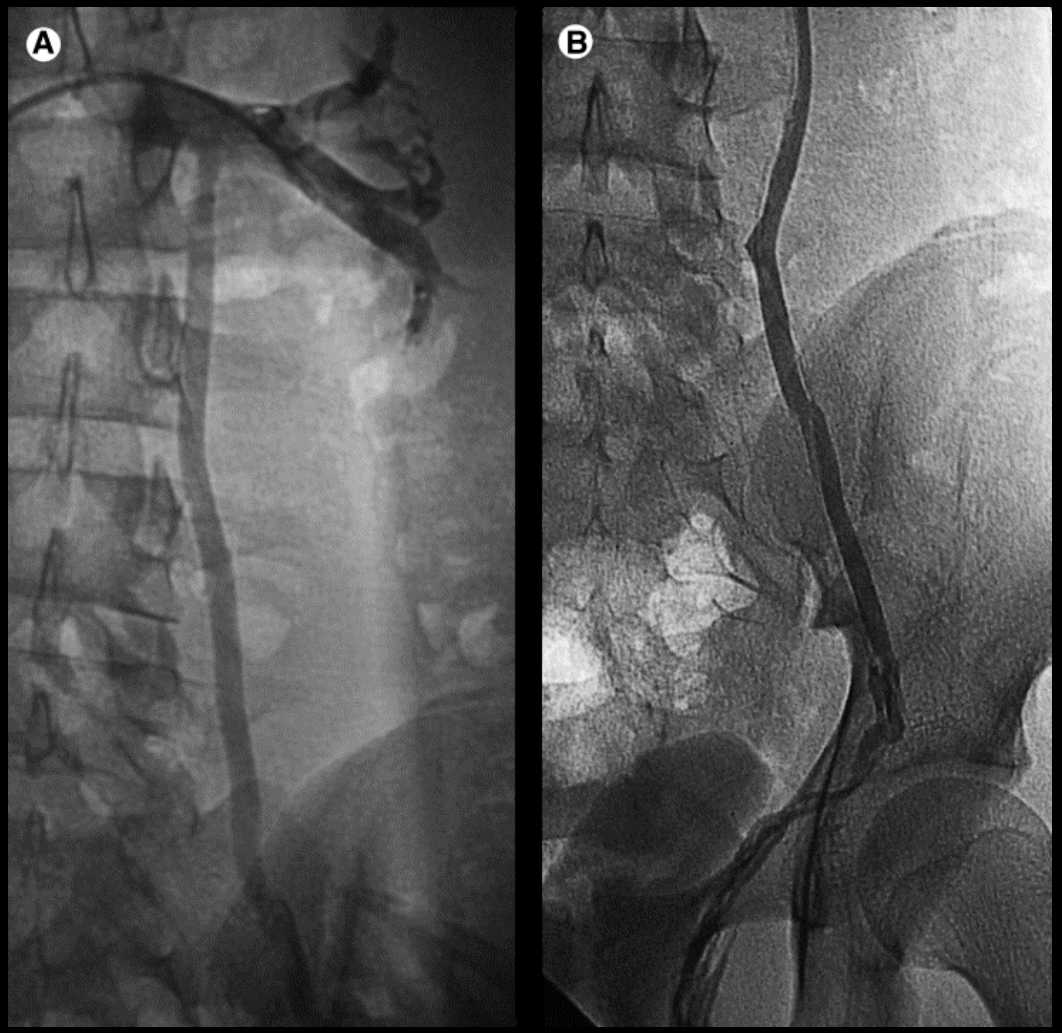
- Variation for radiation exposure
  - Varicocoele embolisation 0.7 – 8 mSv
  - CXR 0.1 mSv
  - CT renal tract 6.5 – 8.5 mSv
- Mostly to abdomen / kidneys
- Very little dose to the testes

1. Chalmers N, Hufton A P et al. Brit J of Radiology 2000; 73: 293-297

Procedure

- Day case
- 60 - 90min
- Sedo-analgesia
  - Fentanyl & midazolam
- Discharge 2 - 4 hours post procedure

Varicocoele



Complications

- Pampiniform ('Testicular') Phlebitis
  - Usually responds to simple analgesia
- Failure of procedure
  - 5 -10%
- Recurrence of varicocoele 7 – 15%
- Infection

Pelvic Venous Congestion Syndrome

- First described in 1857 as tubo-ovarian varicocoele
- Venous incompetence with reflux of blood down the ovarian veins into pelvic veins
- Engorgement of pelvic venous plexus with venous congestion

1. Beard RW et al: Br J Obstet Gynaecol. 1988; 95: 153-161

Pelvic Venous Congestion Syndrome

- 'Classical' presentation
  - Post coital ache lasting hours or 1-2 days
  - Relieved on lying flat
  - Family history of varicose veins
  - Vulval varicosities
  - Up to 2/3 'significant emotional disturbance'

  - Multi-gravids
    - Up to 60% nulliparous in some series

Pelvic Venous Congestion Syndrome

- Difficult to diagnose
- Chronic pelvic pain[1]
  - Up to 40% patients at Gynae OPD
  - Up to 1/3 of diagnostic laparoscopies
- Often had US / laparoscopy / MR Pelvis or CT

1. APGO Educational Series on Women's Health Issues. Chronic pelvic pain: An integrated approach. Crofton, MD; APGO: 2000

Pelvic Venous Congestion Syndrome

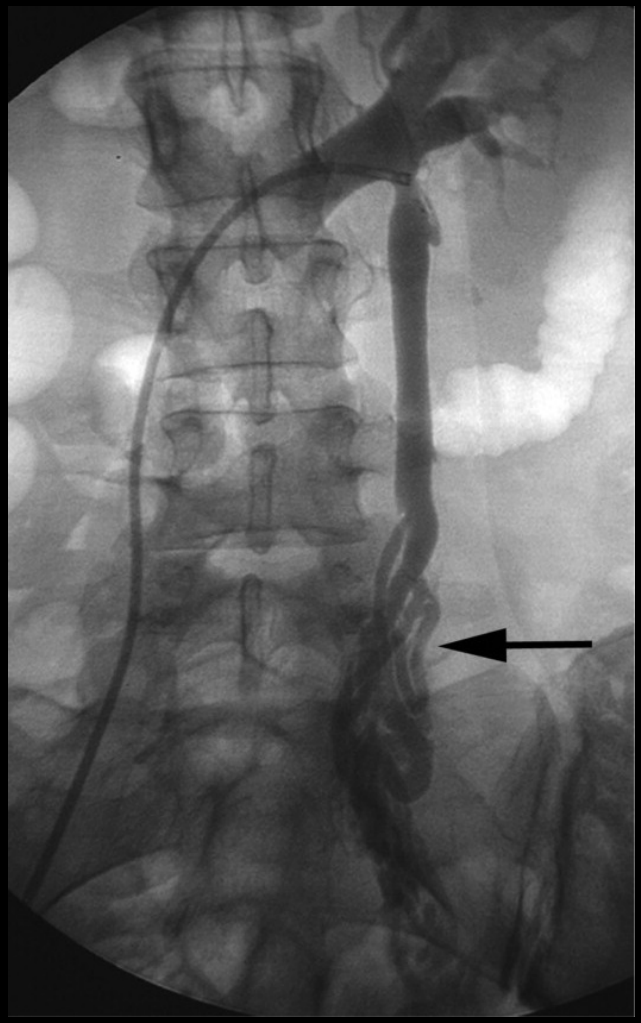
- Diagnostic sensitivity[1]

• MR	58%
• Laparoscopy	40%
• US	20%
• CT	12%

- Gold standard is ovarian & pelvic venography with a tilting table

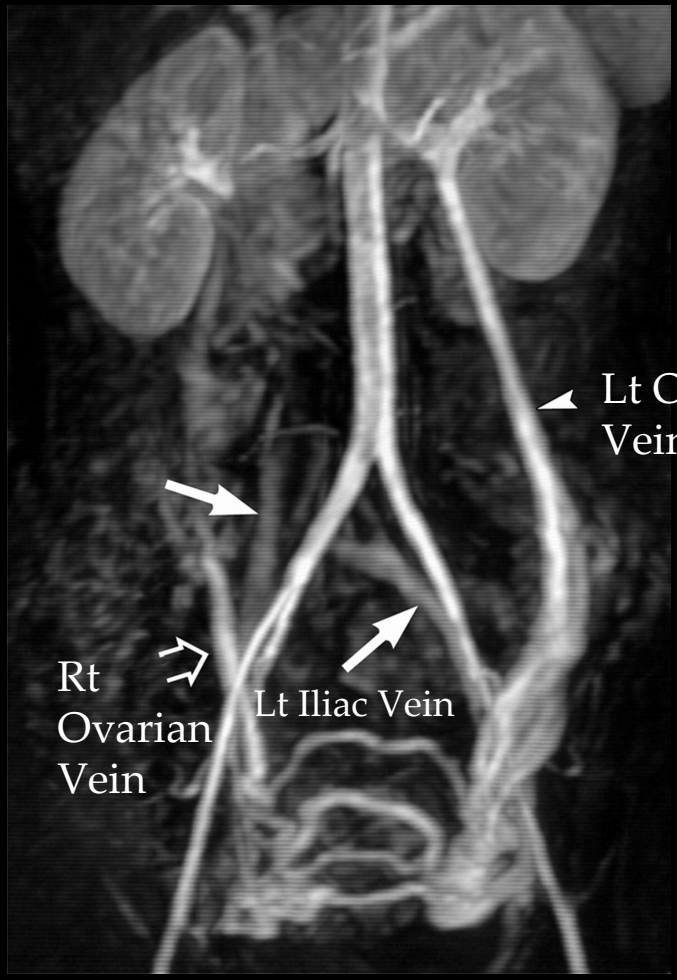
1. Kim HS et al: J Vasc Interv Radiol. 2006; 17: 289-297

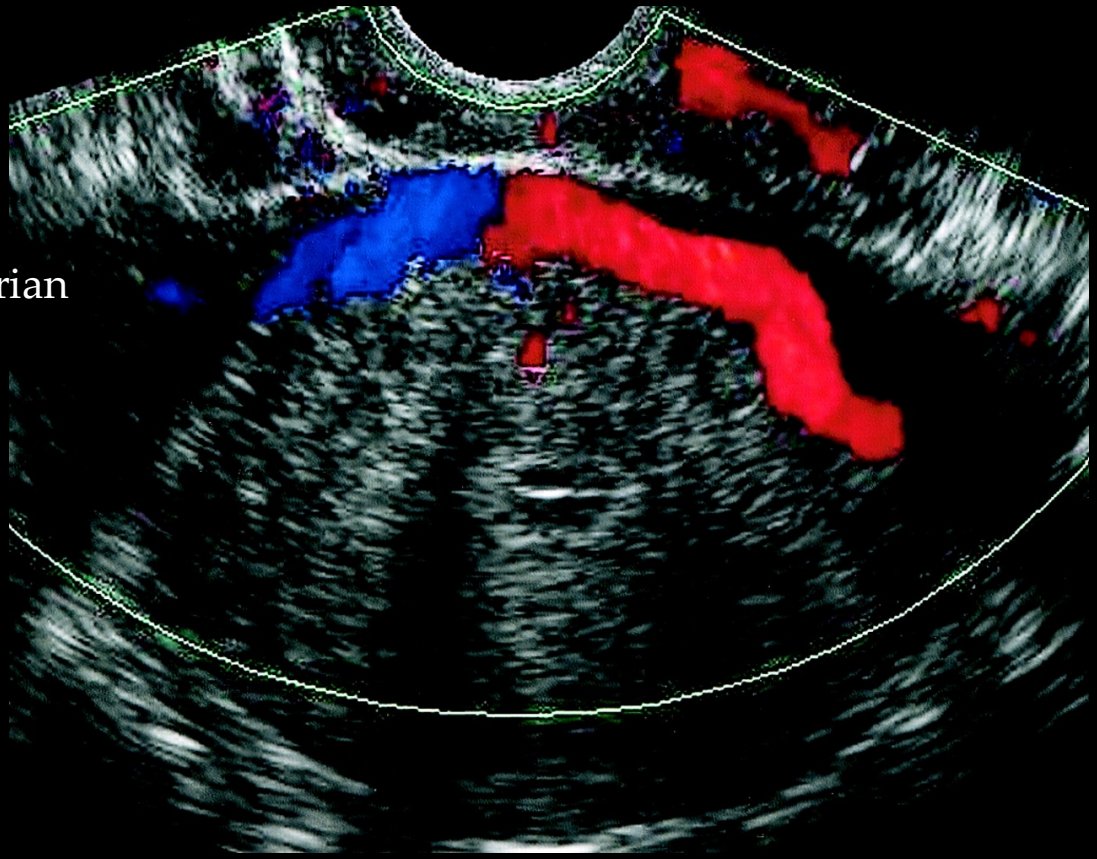
Left Ovarian Vein Venogram



Free reflux of
contrast into pelvis

Imaging Ovarian Vein Incompetence





MRV Coronal MIP

Doppler US

Treatment of Chronic Pelvic Pain / PVC Syndrome

- Medical[1]
  - Medroxyprogesterone
    - Relieve symptoms in up to 40%
  - Psychotherapy
    - Effective in up to 60%
  - Placebo
    - Effective in up to 50%

- Surgical[2]
  - Hysterectomy & bilateral oopherectomy – 60% improve
  - Ovarian vein ligation - 70 – 80% improve

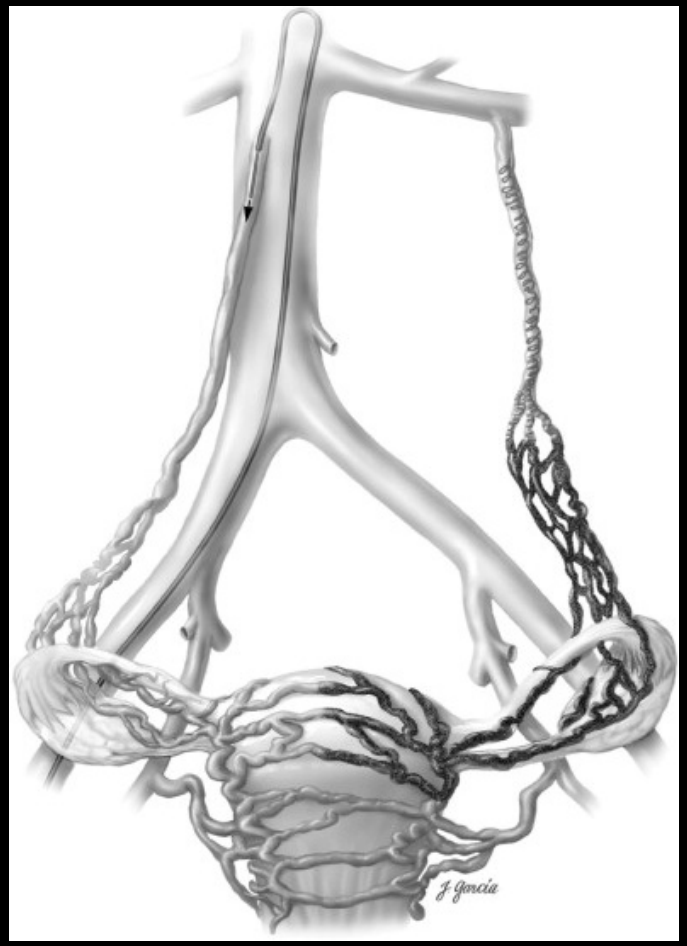
1. Farquhar CM et al: Br J Obstet Gynecol.1989; 96: 1153
2. Rundqvist E, et al: Ann Chir Gynaecol.1984; 73: 339-341

Endovascular Treatment

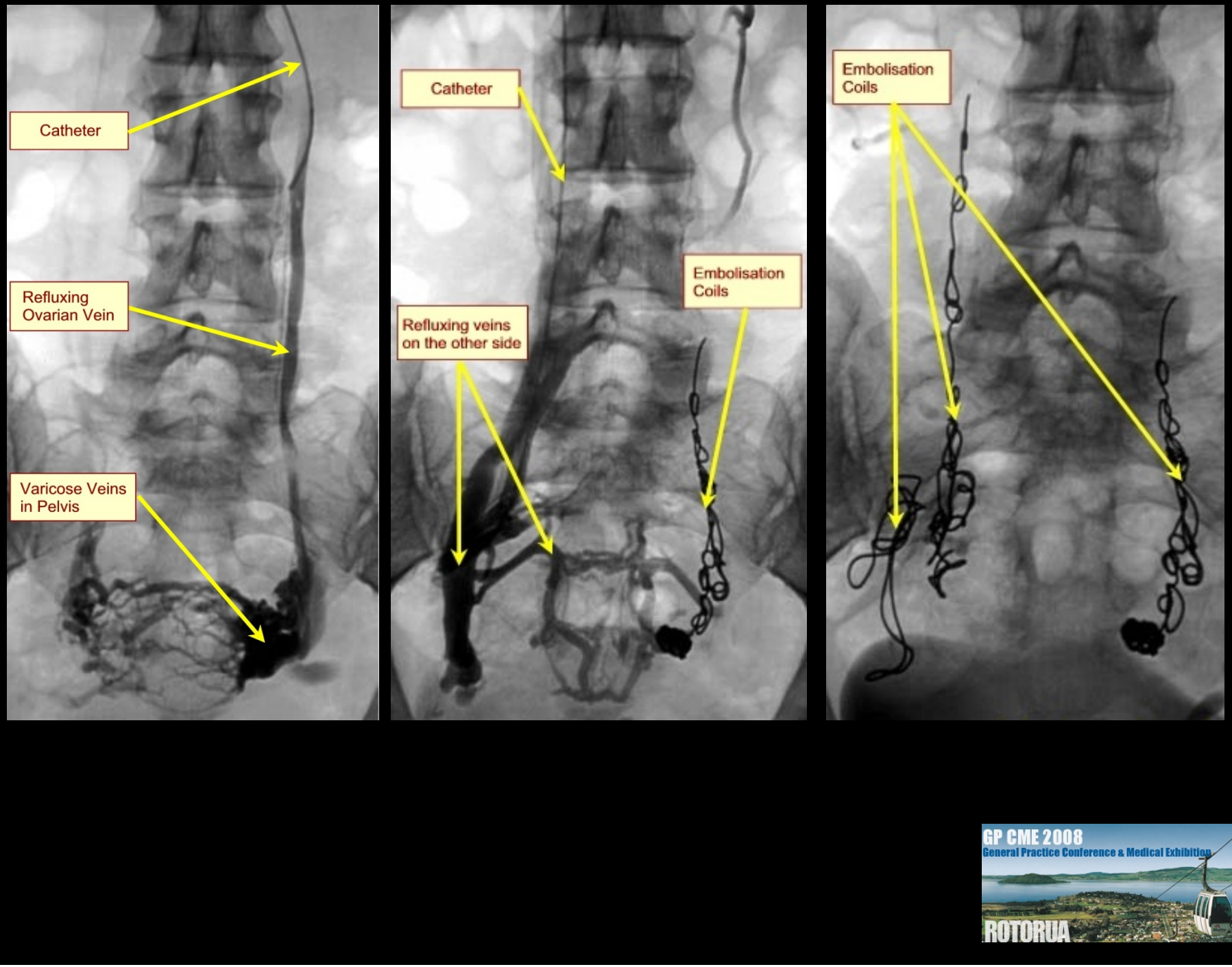
- Bilateral vein embolisation
  - +/- Internal iliac vein embolisation
- Effective in 70 – 85%
- Leaves nerves intact
- Worsening symptoms in up to 4%

1. Kim HS et al: J Vasc Interv Radiol. 2006; 17: 289-297
2. Machan L. Embolization in the female pelvis: Textbook of Endovascular Procedures. 2000; 367

Pelvic Venous Plexus



1. Kim HS et al: J Vasc Interv Radiol. 2006; 17: 289-297


Catheter
Refluxing Ovarian Vein
Varicose Veins in Pelvis
Catheter
Refluxing veins on the other side
Embolisation Coils
Embolisation Coils
GP CME 2008
General Practice Conference & Medical Exhibition
ROTORUA

Summary

- Think of the diagnosis in patients with chronic or complex pelvic pain
- Be careful excluding diagnosis on laparoscopy or US investigations
- Work with Gynaecology in considering ovarian venography
- Well selected patients ovarian & pelvic vein embolisation is treatment of choice