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\(^1\)

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\(^2\)

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
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 Results¹

✧ 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

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\textsuperscript{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\textsuperscript{1}
  - Repeat UFE
  - Myomectomy / Hysterectomy

\textsuperscript{1} Goodwin et al. Obstet Gynecol 2008; 111: 22–33
\textsuperscript{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 of 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

Diagnosis

✧ Clinical
- Grade I is palpable only during valsalva
- Grade II is palpable without valsalva
- Grade III is visible varicocele.

✧ 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%

Why treat asymptomatic adolescent varicocele?

- 15% incidence of adolescent varicocele
- Testicular atrophy (volume <20 ml, length <4 cm)

Treatment
- Rebound testicular growth in 50–90%
- Improvement in semen quality

- May prevent some patients with borderline testicular dysfunction progressing to irreversible clinical infertility in adulthood

Management

❖ For most adolescent patients
  • Equal testicular volume
  • Asymptomatic

❖ Observation and regular follow-up examinations
  • 6 – 12 months

❖ Regardless of varicocele size

Should we treat for male infertility?

✧ Short answer is
  No\(^1\)
  But

✧ Scrotal varicoceles 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
Should we treat for male infertility?

- Results in improved sperm count

- Varicocele 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.”

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

- Palpable varicocele
- 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

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

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

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-gravid
  - Up to 60% nulliparous in some series
Pelvic Venous Congestion Syndrome

- Difficult to diagnose

- Chronic pelvic pain
  - Up to 40% patients at Gynae OPD
  - Up to 1/3 of diagnostic laparoscopies

- Often had US / laparoscopy / MR Pelvis or CT

Pelvic Venous Congestion Syndrome

 pena diagnostic sensitivity\(^1\)

- MR \(58\%\)
- Laparoscopy \(40\%\)
- US \(20\%\)
- CT \(12\%\)

Gold standard is ovarian & pelvic venography with a tilting table

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

Endovascular Treatment

✧ Bilateral vein embolisation
   • +/- Internal iliac vein embolisation

✧ Effective in 70 – 85%

✧ Leaves nerves intact

✧ Worsening symptoms in up to 4%

Pelvic Venous Plexus

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