Uterine embolization: Techniques and Outcome

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Uterine artery embolization (UAE)

> 50,000 UAE performed worldwide for treatment of symptomatic myomas

- Clinical success rate: ~ 90%
- Low rate of complications
Indication

- Symptomatic fibroids
  - Menorrhagia
  - Dysmenorrhoea (pain)
  - Urinary symptoms
  - Mass effect (Bulk)
  - Infertility

- Consultation of gynecologist

- Refusal of other therapies
Contraindication

**Absolute**
- Pregnancy
- Active pelvic infection
- Life threatening contrast allergies
- Severe renal insufficiency (creatinin i.S. > 3 mg/dl)
- Uncontrollable coagulopathy

**Relative**
- Chronic salpingitis and endometritis
- Large fibroids >15 cm in diameter
- Pedunculated subserosal fibroids
1. Contrast-enhanced MRI with ceMRA
MRA: Preprocedural Prediction of the Best Tube Angle Obliquity

Naguib et al. Radiology 2009
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| **5.** | Digital subtraction angiography:  
- Contralateral approach to the uterine arteries  
- Selective uterine arteriogram +/- co-axial catheters |
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- Contralateral approach to the uterine arteries
- Selective uterine arteriogram +/- co-axial catheters
UAE: Embolization-Technique

- Illustration of the pelvic vessels
- Documentation of blood flow to the fibroid
- Illustration of the pelvic vessels
- Documentation of blood flow to the fibroid
- Careful application of embolisation particles

- End point of embolization occlusion of fibroid vessels supply
6. Instillation of the embolization particles
   350-700 µm particles of polyvinyl alcohol (PVA)
   500-700 µm microspheres

7. Observation time: 6 -24 hours

8. Control-MRI after 24 hours/ 3 months / 12 months
Sufficient and flexible pain management protocols necessary adapted to local conditions (spinal, epidural, PCA)

Out patient setting only with mobile phone number access

Fibroids need to completely infarct to avoid recurrence
Technical goal of UAE is to infarct all the fibroids
MRI after UAE (n=250): Size-Changes

Literature: volume reduction 40-60%
52-year-old patient

Pre-UAE  3-mo-FU  6-mo-FU
UAE (n=250): Effect on menstrual bleeding
UAE (n=250): Effect on symptoms

Literature: clinical success rate 80-95%
Common (around 1/100 chance)

- post-embolisation syndrome (not involving hospitalisation)
  - Pain
  - Nausea
  - Vomiting
  - Fever

- persistent vaginal discharge (7–14%)

Less common (around 1/1000 chance)

- premature ovarian failure particularly in women over 45 years old (up to 8%)
- need for additional surgery (emergency hysterectomy)

Hickey and Hammond. Austr. and NZ J of Obstetrics and Gyn. 2008
Rare (1/10 000 chance)
- haemorrhage
- non-target embolisation causing tissue necrosis
- infection causing septicaemia

Hickey and Hammond. Austr. and NZ J of Obstetrics and Gyn. 2008

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Very rare
- Death

Additional potential risks:
- Late explosion of fibroids
- Pregnancy complications
  - increased risk of caesarean section
  - possible risk of uterine rupture
  - preterm delivery

Hickey and Hammond. Austr. and NZ J of Obstetrics and Gyn. 2008
Conclusion: UAE

- Effective treatment
- Short hospitalization
- Reduction of clinical symptoms
- High patient satisfaction

UAE is an alternative treatment to uterus-preserving surgery
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