PAE: Patient selection and indication

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Disclosures

I have nothing to disclose
Guidelines:

**EAU Guidelines 2019**

*Technique under investigation*

*Selection of LUTS patients who benefit from PAE needs to be defined*

**AUA Guidelines 2019**

*PAE is not recommended for the treatment of LUTS attributed to BPH outside the context of a clinical trial. (Expert Opinion)*

**NICE Guidelines 2018**

*Current evidence supports the use of this procedure provided that standard arrangements are in place for clinical governance, consent and audit*
1. moderate to severe LUTS
2. moderate to severe LUTS + very large prostate glands > 80 cm³
3. To achieve catheter independence.
4. wish to preserve erectile and/or ejaculatory function
5. hematuria of prostatic origin
6. moderate to severe LUTS + no candidate for surgery
7. PAE should be included in the individualized patient-centered discussion regarding treatment options for BPH with LUTS.

RECOMMENDATIONS

1. PAE is an acceptable minimally invasive treatment option for appropriately selected men with BPH and moderate to severe LUTS. (Level of evidence: B; strength of recommendation: strong.)
2. PAE can be considered as a treatment option in patients with BPH and moderate to severe LUTS who have very large prostate glands (> 80 cm³), without an upper limit of prostate size. (Level of evidence: C; strength of recommendation: moderate.)
3. PAE can be considered as a treatment option in patients with BPH and moderate to severe LUTS who have very large prostate glands (> 80 cm³), without an upper limit of prostate size. (Level of evidence: C; strength of recommendation: moderate.)
4. wish to preserve erectile and/or ejaculatory function
5. hematuria of prostatic origin
6. moderate to severe LUTS + no candidate for surgery
7. PAE should be included in the individualized patient-centered discussion regarding treatment options for BPH with LUTS.

8. Interventional radiologists, given their knowledge of arterial anatomy, advanced microcatheter techniques, and expertise in embolization procedures, are the specialists best suited for the performance of PAE. (Level of evidence: E; strength of recommendation: strong.)
Assessment (>/>= 40 years)

Conservative treatment

After failed conservative treatment

Treatment of BPO according EAU Guidelines 2018

**Assessment (>/>= 40 years)**

- History + sexual function
- Symptom score questionnaire
- Urinalysis
- Physical examination
- PSA (if diagnosis of PCa will change the management - discuss with patient)
- Measurement of PVR

**Conservative treatment**

- Male LUTS
- Manage according to EAU mLUTS treatment algorithm
- Benign conditions of bladder and/or prostate with baseline values

**After failed conservative treatment**

- Male LUTS
- with absolute indications for surgery or non-responders to medical treatment or those who do not want medical treatment but request active treatment

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**Note:** Readers are strongly recommended to read the full text that highlights the current position of each treatment in detail.
Why do patients prefer PAE

- No risk of urinary incontinence
- Low risk of ejaculatory disorders ED (?!)
- No transurethral manipulation
- Day case procedure
- No physical rest required
- Anticoagulation can be continued

→ Abt et al. BMJ 2018: - 56% ED after PAE - 84% ED after TURP
How to integrate guidelines/evidence into daily work?

Assessment (/>= 40 years)

Conservative treatment

After failed conservative treatment

PAE might fill the gap between conservative treatment and surgery
Initially: Rule out other diagnoses than BPO

Voiding complaints can be attributed to BPO only, if other diseases were excluded

LUTS: Lower Urinary Tract Symptoms

- **Voiding symptoms:**
  - Poor stream
  - Hesitancy
  - Terminal dribbling
  - Incomplete voiding (Near) retention

- **Storage symptoms:**
  - Frequency
  - Urgency
  - Nocturia

All patients with LUTS fall under the urology investigation and treatment pathway

=> different therapeutic approaches

Gratzke et al., Eur Urol., 2015
Clarification strategy of LUTS

Not every patient needs the whole assessment
Low level of evidence

DRE

Uroflowmetry

Urodynamic

Bladder diary

Questionnary

Urodynamics

Ultrasound Imaging

Prostate

Post void residual

Upper urinary tract

Urethrocystoscopy

Blood tests

Urodynamics
Outcome prediction and patient selection

Outcome of PAE variable!

The bigger the better!
Wang et al. BJU Int 2016; De Assis et al. JVIR 2017; Maclean et al. Cardiovasc Intervent Radiol 2018; Abt et al. BJU Int .2018; Hacking et al. 2019

More clinical failures in patients with small prostates (Cut-Off: 39ml)
Abt et al. BJU Int. 2018

Other factors associated with favorable outcome:
→ Central gland index
→ Adenomatous-dominant BPH
→ use of 250μm instead of 400μm particles
PAE - A good option for frail patients relying on urinary catheter?

-PAE technically more demanding in presence of vascular disorders (e.g. atherosclerosis)
  -Older patients:
    → higher procedure and fluoroscopy time, contrast volume
    → BUT: Technical success rate is not significantly related to patients’ age


→ Retrospective study of patients reliant on bladder catheter (n = 30)
  -mean prostate volume: 167.3 cm³ (55–557)
  -mean catheter indwelling time: 63.4 days (2–224)
→ 26 (86.7%) patients were no longer reliant on catheters 18.2 (1-72) days after PAE
→ PVR at 12 months: 27.9mL ± 30.9

Bahtia et al. J Vasc Interv Radiol. 2018

Indwelling foley catheters--> Studies showing efficacy:
Hollingsworth et al. 2013; Pisco et al.,2016; Kisikevzky et al., 2016, Yo et al., 2017; Bathia et al., 2018
How can we integrate the guidelines, the literature—and most important: the patients wish—to our daily work?

- Data imply efficacy
- PAE is minimal invasive
- PAE has low complication risks
- AND: Patients demand for this method

Contra: “OK, It somehow works, but compared to TURP it has inferior efficacy”

- -> !! PAE has a favourable safety profile !!
- -> PAE does not prevent a subsequent alternative treatment!
Summary

• PAE is an effective and low-complication therapy for patients with at least moderate symptoms of BPO

• At the current status, PAE is not a substitute for the established surgical procedures for severe (!) obstructions
  
  *(but if patients insist, we may still offer it)*

• It should be rather seen as
  
  • an alternative, if drug therapy fails
  • as a valid treatment option for patients with moderate to severe symptoms
  
  *(-> patients' preference)*
  • as an option for patients with surgical contraindications

„Perfected“ ;-) Patient:

• Elective and not mandatory indication for treatment + strong wish for treatment
Patient selection for PAE (interdisciplinary consensus):

- Obstructive (BPO!) bladder emptying disorder (Qmax <10 ml / sec)
- Benign prostate enlargement and large prostate volume (> 39ml)
- Advanced urinary problems (IPSS ≥ 18) who meet the criteria for TUR-P without mandatory indication
- No clinical improvement under drug therapy (6 months)
- Drug therapy is not desired or cannot be tolerated due to side effects
- Clinically relevant residual urine volume of > 150 ml
- Strong wish for treatment
- *Patients with surgical contraindications due to comorbidities*
- *Emerging Trend: patients with irritative symptoms benefit most*

- **Pcontraindications for PAE:**
  - Narrowing of the urethra (stricture of the urethra),
  - Neurogenic bladder
  - *(clinically relevant impaired renal function - chronic renal failure)*
  - Prostate cancer with an indication and possibility for standard treatment (except in trials)
Thank You!

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