Minimally Invasive BPH Treatments: How to Tailor the Treatment to the Patient

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Disclosures

• None
Learning Goals

• Discuss indications for surgical treatment of BPH

• Tailoring BPH surgery
  • Patient
  • Prostate

• Case presentation: Choosing the “right” treatment
BPH: Benign Prostatic Hyperplasia

Prevalence (%)

Age (y)

Pradhan (1975)
Moore (1943)
Baron (1941)
Swyer (1944)
Harbitz (1972)
Fang-Liu (1991)
Franks (1954)
Holund (1980)
Karube (1961)
BPH and Lower Urinary Tract Symptoms (LUTS)

• Irritative
  • Frequency
  • Urgency
  • Nocturia
  • Dysuria

• Obstructive
  • Weak stream
  • Intermittency
  • Hesitancy
  • Incomplete voiding
  • Postvoid dribbling
  • Straining to void
Indications for Surgery: Per AUA Guidelines

• Refractory urinary retention
• Recurrent UTI
• Recurrent gross hematuria
• Worsening LUTS refractory to medical therapy
• Renal insufficiency and bilateral hydro
• Large bladder diverticula
• Bladder stones
Transurethral resection of the prostate (TURP)

- "Gold Standard" - durable clinical improvement
- General anesthesia, Inpatient, CBI
- Potential complications:
  - Ejaculatory Dysfunction (65%)
  - Erectile Dysfunction (10%)
  - Stricture (7%)
  - Surgical revision (6%)
  - UTI (4%)
  - Bleeding requiring transfusion (3%)
  - Incontinence (2%)
  - TUR syndrome (1%)
Development of minimally invasive surgery for BPH

- Goal: Achieve efficacy of TURP, with more favorable safety profile

- Ideally would be
  - Cost effective
  - Easy to perform
  - Rapid and durable relief of symptoms
  - Ambulatory setting, local anesthesia
  - Short recovery time
  - Smooth return to normal activity
  - Preservation of sexual function
Treatments for BPH

- Watchful waiting
- Medical therapy
  - $\alpha$-blockers
  - $5\alpha$-reductase inhibitors
  - Combination therapy
  - Phyto therapy
- Minimally Invasive Treatment
  - TUMT
  - TUNA
  - UroLift
  - Rezum
  - Intraprostatic injections
  - Prostate Artery embolization
- Hospital-based treatment
  - TURP
  - HOLEP
  - Laser vaporization
  - TUİP
  - Prostatic stents
  - Open surgery
  - Aquablation
AUA Guidelines: Surgical management of BPH
Tailoring BPH Treatment: Patient Factors

- Indications for BPH surgery
- AUA Score: Degree of symptoms and Bother
- Risk Tolerance
  - Co-morbidities
  - Anticoagulation
- Sexual Function
- Life issues: work, family, responsibilities
American Urological Association (AUA) Symptom Score

**LUTS**

<table>
<thead>
<tr>
<th>Symptom Score</th>
<th>Treatment options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild symptoms 1-7</td>
<td>Observation, Medical therapy</td>
</tr>
<tr>
<td>Moderate symptoms 8-19</td>
<td>Medical therapy, Minimally invasive therapy (MIT), Surgery</td>
</tr>
<tr>
<td>Severe symptoms 20-35</td>
<td>Medical therapy, MIT, Surgery</td>
</tr>
</tbody>
</table>

**AUA SYMPTOM SCORE (AUASS)**

**QUALITY OF LIFE (QOL)**

- Delighted
- Please
- Mostly satisfied
- Mixed
- Mostly dissatisfied
- Unhappy
- Terrible

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<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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Tailoring BPH Treatment: Prostate Factors

• Size

• Shape

• Concomitant disease

• Previous treatment
  • Prior surgery
  • Radiation
Patient #1

• 58 yo male with bph and associated lower urinary tract symptoms
• C/o slow flow and hesitancy
• Employed as mail carrier, knows locations of all bathrooms on route
• Tamsulosin 0.4 mg >1 year- retrograde ejaculation, feels tired
• Preserving sexual function is a priority
• AUA score = 28, QOL = 5 (unhappy)
• Prostate ultrasound = 45 cc prostate, no middle lobe
• Decided to have treatment with a Urolift
UroLift

• Technical goal - create a continuous anterior channel
• Compress encroaching lateral lobe
• Deliver UroLift implant to hold in place
• Typically ~4 implants delivered
Urolift
Urolift: 5-Year Durability Established

13.6% Retreatment thru 5 Years\textsuperscript{1, 2}
4.3% Add’l PUL
9.3% TURP or PVP

UroLift ReTx = ~ 2% to 3% per year
TURP ReTx = ~1% to 2% per year

\textsuperscript{1} Roehrborn, EAU 2017, London
\textsuperscript{2} Roehrborn et al. Urology Clinics 2016
\textsuperscript{3} Data on File at NeoTract
## Urolift Avoids Sexual Dysfunction

<table>
<thead>
<tr>
<th>Surgery</th>
<th>ED</th>
<th>EjD</th>
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</thead>
<tbody>
<tr>
<td>TURP¹</td>
<td>10%</td>
<td>65%</td>
</tr>
<tr>
<td>PVP¹</td>
<td>7%</td>
<td>42%</td>
</tr>
<tr>
<td>HoLEP¹</td>
<td>3%</td>
<td>59%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minimally Invasive:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUNA¹</td>
</tr>
<tr>
<td>TUMT¹</td>
</tr>
<tr>
<td>Rezum²</td>
</tr>
<tr>
<td><strong>UroLift³</strong></td>
</tr>
</tbody>
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1 AUA BPH Guidelines  
Patient #2:

- 72 yo male with hx of bph and urinary retention
- Failed several voiding trials
- Developed epididymitis
- Not sexually active
- MRI – prostate 240 cc
- Goal to be catheter free
- Decided to have treatment with HOLEP
Open prostatectomy

- Reserved for men with large prostates (>100 g)
  - Abdominal incision
  - Blood loss
  - Longer hospitalization
  - Longer catheter time
  - Longer convalescence
HOLEP: holmium laser enucleation of prostate
HoLEP: the gold standard for the surgical management of BPH in the 21st Century
John Michalak, David Tzou, and Joel Funk

- HoLEP compared to TURP or Open prostatectomy
  - Greater improvement in urinary flow (Qmax)
  - Greater improvement in AUA symptom score
  - Lower rate of repeat endoscopic procedure for recurrent symptoms at 5-10 years
    - <1% for HoLEP vs 7.4% for TURP
  - Shorter catheterization times
  - Decreased length of hospital stay
  - Fewer serious post-operative complications
  - Possible to treat very large prostates comparable to open prostatectomy but with radically decreased morbidity

Summary: Tailoring BPH Treatment

• There are many available surgical treatments for BPH
  • Urologists should be familiar with several options

• It is important to consider patient/prostate factors when choosing best option
  • Symptoms, anatomy, efficacy/durability, comorbidities, side effects

• Together the patient and the urologist can decide on the ”right” treatment
Questions?