AUA & EAU UPDATE
BPH SURGERY

Pusan National University Yangsan Hospital
Assistant Professor
Park Sung-Woo
PG or IC Course
“2009 AUA BPH/LUTS Clinical guidelines”
“BPH and OAB, Minimally Invasive Therapies: Update”
“BPH laser surgery”
## AUA abstract about BPH surgery (n=32)

<table>
<thead>
<tr>
<th>Laser (16)</th>
<th>TUR (6)</th>
<th>Etc (10)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KTP and HPS 10</strong>&lt;br&gt;Holmium 4&lt;br&gt;Thulium 2</td>
<td>TUR 5&lt;br&gt;TURis 1</td>
<td>PSA 3&lt;br&gt;Cost 2&lt;br&gt;Urethral lift 1&lt;br&gt;Lapascopic 1&lt;br&gt;Robotic 1&lt;br&gt;Smoke 1&lt;br&gt;Incidental PCA 1</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Laser (5)</th>
<th>TUR (6)</th>
<th>Etc (5)</th>
</tr>
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<tbody>
<tr>
<td><strong>KTP and HPS 2</strong>&lt;br&gt;Holmium 2&lt;br&gt;Thulium 1</td>
<td>TUR 5&lt;br&gt;TURis 1</td>
<td>PSA 1&lt;br&gt;Cost 1&lt;br&gt;Urethral lift 1&lt;br&gt;TUNA 1&lt;br&gt;Smoke 1</td>
</tr>
</tbody>
</table>
PROSPECTIVE CONTROLLED STUDY (n=212)
- No major differences between bipolar and monopolar TUR-P
  - Serum sodium change bipolar vs. monopolar: +1.2 vs 0.1 mmol/L
- Risk of developing TUR syndrome seemed to be smaller with bipolar resection

A RANDOMISED PROSPECTIVE TRIAL (n=210)
- In the monopolar arm,
  - A lower immediate post-operative sodium (135.8 vs. 138.7 mmol/L, p<0.001)
  - 3 patients (1.42%) developed TUR syndrome
- In the bipolar arm, no TUR syndrome
- Functional outcomes; similar at 12 months
- Bipolar TURP may be safer in selected patients and is comparable to monopolar TURP in efficacy
## TURis PLASMA VAPORIZATION vs TURP

**AUA, EAU, From Rumania**

- Prospective, randomized trial (n=155)
- Inclusion criteria
  - Qmax < 10 ml/s, IPSS > 19
  - Prostate volume between 30 and 80 ml

<table>
<thead>
<tr>
<th></th>
<th>TURis-vaporization</th>
<th>Monopolar TURP</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation time</td>
<td>35.1 minutes</td>
<td>50.4 minutes</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Catheterization period</td>
<td>23.8 hours</td>
<td>71.2 hours</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Hospital stay</td>
<td>47.6 hours</td>
<td>93.1 hours</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>IPSS at 1 month</td>
<td>8.3</td>
<td>8.6</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td></td>
<td>4.8</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qmax at 1 month</td>
<td>22.7 ml/sec</td>
<td>20.5 ml/sec</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>at 3 month</td>
<td>22.3 ml/sec</td>
<td>20.0 ml/sec</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>at 6 month</td>
<td>21.8 ml/sec</td>
<td>19.3 ml/sec</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

**TURis is superior to monopolar TURP**

1903 TURIS PLASMA VAPORIZATION OF THE PROSTATE VERSUS STANDARD TURP — A SINGLE CENTER RANDOMIZED TRIAL

885 TURis plasma vaporization of the prostate versus standard TURP: “The better choice” in BPH?

V26 TURis plasma vaporization of the prostate: Experience on 200 cases
International Greenlight user group (IGLU) (Europe n=5, US n=3 and Australia n=1), n=1109, follow up 1yr

Preoperative
- PV 52 (9-284) ml/over 80ml (23%)

At 12 months
- Qmax; 18 ml (3-29)
- IPSS; 6 (1-30)
- PSA; from 3.2 ng/ml to 1.9 (drop rate 40%)
- Prostate volume; from 52ml to 31ml (drop rate 40%)

Re-operation rate after 12 months was 1.7% (n=19)

Within the first 2 weeks postoperatively
- mild dysuria; 7% / moderate dysuria; 0.9% / severe dysuria; 0.5%

120W PVP is effective and durable with acceptable morbidity
PVP for large prostate

- 532NM green-light laser vaporization (n=128)  
  Prostate volume > 90cc, Follow up; 24.8 months  
  Success rate; 91% at 24 months  
  Complication rates; comparable or better than open simple prostatectomy

AUA, From USA

- PVP; high power 120W lithium triborate green-light laser (n=288)  
  Prostate volume > 120cc, Follow up; 3 months  
  Complications  
  - post operative retention; 4 pts (all in retention preoperatively)  
  - UTI; 1pt  
  - late cases of clot retention; 2pts  
  - Additional PVP; 1 pt

120W PVP is effective and durable with acceptable morbidity in large prostate

AUA, From Australia

1905 PHOTO-SELECTIVE 532NM GREENLIGHTTM LASER VAPORIZATION IS A SAFE AND EFFICACIOUS TREATMENT OPTION FOR LARGE OBSTRUCTING PROSTATES (> 90CC): SHARED EXPERIENCE FROM TWO INSTITUTIONS

2090 PHOTOSELECTIVE VAPORISATION OF THE PROSTATE IN THE MASSIVELY ENLARGED PROSTATE (>120CC)
After 120W LBO laser vaporization and TURP, The Changes of volume in early phase

- **3D ultrasound volumetry study**
- TURP seems to be superior due to a higher ablation in relation to the initial volume

<table>
<thead>
<tr>
<th>Volume reduction</th>
<th>preop</th>
<th>Catheter removal</th>
<th>6wks</th>
<th>6mons</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBO (n=54)</td>
<td>(55.7ml)</td>
<td>7.7ml 18%</td>
<td>16.3ml 31%</td>
<td>18.5ml 36%</td>
</tr>
<tr>
<td>TURP (n=41)</td>
<td>(47.2ml)</td>
<td>15.8ml 34%</td>
<td>16.7ml 38%</td>
<td>20.8ml 46%</td>
</tr>
<tr>
<td>P value vs basal</td>
<td>&gt;0.05 &lt;0.05 &lt;0.05</td>
<td>&gt;0.05 &lt;0.05 &lt;0.05</td>
<td></td>
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</tbody>
</table>

AUA, From Switzerland

Prostatic swelling occurs early after LV

1915 TRANSRECTAL THREE-DIMENSIONAL ULTRASOUND VOLUMETRY TO EVALUATE THE EFFICIENCY OF LITHIUM TRIBORATE LASER VAPORISATION AND CONVENTIONAL TRANSURETHRAL RESECTION OF THE PROSTATE: AN UPDATE WITH SIX MONTHS RESULTS
After PVP, DO and Incontinence

- PVP with 80 W KTP laser (n=30)
- Urodynamics at baseline and 12 months postop
- Preop Detrusor overactivity (DO) ; 14 pts (46%)
- Postop
  - complete relief; 8 pts (57.2%)
  - still presented DO after treatment; 6 pts (42.9%)
  - de novo DO; 1 patient / 16 pts (6.3%)

120W Green-light laser HPS (n=343, 32months follow up)
- The prevalence of any UI (ISI>4) following PVP ; 40%
- More urge UI than stress UI
- Multivariable analyses for postoperative incontinence;
  - both age (OR 1.10; 1.01, 1.20) and prostate size (OR 2.28; 1.21, 4.29) were independent factors
- PVP may be associated with mixed urinary incontinence, particularly in large glands

AUA, From Italy

AUA, From USA

1906 TO EVALUATE THE EVOLUTION OF DETRUSOR OVERACTIVITY (DO) AND BLADDER OUTLET OBSTRUCTION (BOO) IN A GROUP OF PATIENTS WITH LOWER URINARY TRACT SYMPTOMS (LUTS) DUE TO BENIGN PROSTATIC HYPERPLASIA (BPH) TREATED WITH PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE (PVP)

1907 INCONTINENCE-RELATED OUTCOMES FOLLOWING PHOTOSELECTIVE VAPORIZATION
After PVP, peroperative vardenafil and 5ARI

AUA, From Germany

- 80W PVP (n=50), Randomized, double-blind, placebo-controlled pilot study
- **Hypothesis;** PDE5I → prostatic blood-flow $\uparrow$ → the laser absorption properties of prostatic tissue $\uparrow$ → improve clinical outcome after PVP
- Two dose; evening before operation (10mg)/1 hour before operation (20mg)
- **Preoperative medication with vardenafil did not improve functional results after PVP**

AUA, From USA

- Green-Light HPS™ laser PVP, n=178 (5ARI+ n=55/5ARI- n=123)
- **Hypothesis;** long-term 5ARI → angiogenesis in benign prostatic tissue $\downarrow$ → efficacy of HPS laser $\downarrow$
- Adverse events; no significant differences
- **5ARI do not have a detrimental effect on the efficiency and efficacy of GreenLight HPS™ laser PVP.**

AUA, From Germany

- *1908 IMPACT OF PREOPERATIVE VARDENAFIL ON FUNCTIONAL RESULTS 3 MONTHS AFTER PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY.*
- *2089 IS THE EFFICIENCY OF GREENLIGHT HPS™ LASER PHOTOSELECTIVE VAPORIZATION PROSTATECTOMY (PVP) AFFECTED BY LONG-TERM 5α-REDUCTASE INHIBITION (5ARI) THERAPY?*
Following PVP, Retrospective study (n=290)

Gross hematuria; **33.8%** (65% of the gross hematuria within first month)
- Visit emergency department 8.6%
- Required admission 4.8%
- Required CBI 2.8%
- Needed transfusions 0.9%
- Required reoperation for cystoscopy, fulguration and/or clot evacuation and 4.5%

Multivariate analysis for delayed gross hematuria

- Increasing age (OR 0.71)
- Use of 5-ARI (OR 0.41)
- Prostate size (OR 1.08)
- Longer follow-up (OR 1.35)
- Anticoagulant use (OR 3.35)
Randomized study, Prostate volume <60 cc

<table>
<thead>
<tr>
<th>N = 109</th>
<th>HoLAP (n=57)</th>
<th>PVP (n=52)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate volume</td>
<td>33.1 ± 14.5</td>
<td>37.3 ± 13.6</td>
<td></td>
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<tr>
<td>Follow up</td>
<td>40.07 ± 8.44</td>
<td>42.3 ± 7.7</td>
<td></td>
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<tr>
<td>At 4year follow-up</td>
<td></td>
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<tr>
<td>IPSS</td>
<td></td>
<td></td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>QoL</td>
<td></td>
<td>60.3%</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Qmax</td>
<td>173%</td>
<td>225%</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>PVR decrease</td>
<td>84%</td>
<td>82.5%</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Reoperation rate</td>
<td>7%</td>
<td>5.8%</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Urethral stricture</td>
<td>3.5%</td>
<td>5.8%</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Bladder neck contracture</td>
<td>5.3%</td>
<td>7.7%</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>

HoLAP and PVP demonstrate equivalent efficacy and morbidity as an alternative to TURP

1909 HOLMIUM LASER ABLATION (HoLAP) VERSUS PHOTOSELECTIVE VAPORIZATION (PVP) OF PROSTATE < 60CC: LONG TERM RESULTS OF A RANDOMIZED TRIAL
After HoLEP, Transient incontinence

- N=136, follow up > 6mons
- Transient de novo urinary incontinence (UI); 24 pts (17.6%)
  - resolved within 1 to 6 months
  - stress / urge; 11 / 13
- Multivariate logistic regression analysis,
  - Independent predictor of overall UI after HoLEP
    - Severe LUTS (total IPSS ≥ 20) (OR 2.834; p=0.047)
  - Independent predictor of postoperative SUI
    - Preoperative PVR of ≥ 90 ml (OR 3.481; p=0.043)
  - Independent predictors of postoperative UUI
    - Symptom severity by IPSS (OR 8.639; p=0.046)
    - Intraoperative bladder mucosal injury during morcellation (OR 4.530; p=0.041)
N=603, 210 perioperative complications in 173 (28.68%) patients

Most complications; intraoperative superficial mucosal, transient urinary incontinence.

### Modified Clavien System

**Classification of HoLEP Complications**

<table>
<thead>
<tr>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>Grade 2</td>
<td>Grade 3</td>
<td>Grade 4</td>
<td>Grade 5</td>
</tr>
<tr>
<td>spontaneous resolution or simple bedside intervention</td>
<td>required specific medication, including antibiotics and blood transfusion</td>
<td>necessitated surgical, endoscopic, or radiologic intervention 3a without general anesthesia 3b under general anesthesia</td>
<td>neighboring organ injuries and organ failures</td>
<td>Death</td>
</tr>
<tr>
<td>eg- intraoperative covered capsular perforation, superficial bladder mucosal &amp;/or ureteric orifice injury, mild postoperative hematuria</td>
<td>eg- intraoperative or postoperative significant hemorrhage, transient urinary incontinence, urinary tract infection, &amp; epididymitis</td>
<td>3a] eg- dilatation for meatal or submeatal stenosis, recatheterization 3b] eg- cystoscopic clot evacuation, holmium laser incision for bulbar urethral stricture or bladder neck stenosis</td>
<td>eg- permanent incontinence, transmural bladder perforation, acute myocardial infarct, fluid extravasation with paralytic ileus</td>
<td>Death</td>
</tr>
</tbody>
</table>

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<tr>
<th>Grade 1</th>
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<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 (13.26 %)</td>
<td>84 (13.93 %)</td>
<td>26 (4.31 %) /18 (2.98 %)</td>
<td>5 (0.82 %)</td>
<td>1 (0.16%)</td>
</tr>
</tbody>
</table>
from 1999 through 2009 at tertiary care center in Germany

This dramatic change reflects that HoLEP became the gold standard surgical treatment of benign prostatic hyperplasia at our institution

because of

- prostate size independent
- considerable operating time
- short postoperative hospital stay
THULIUM:YAG 2 µM CW VAPOENUCLEATION; Comparative studies

- 120W- Tm:YAG laser VapoEnucleation (n=74)
  - Group I; PV > 100cc (n=41) vs Group II; PV <100 cc (n=33)
  - Functional outcomes; equal, but, OR-time was different; 105min/64.5min
  - Tm:YAG laser VapoEnucleation is efficient independently of prostate volume

1916 EFFICACY OF THULIUM:YAG 2 µM CW VAPOENUCLEATION IN PATIENTS WITH PROSTATE VOLUME >100 CC.

- 70 Watt Tm:YAG VapoEnucleation (RevoLix, Lisa Laser, Germany) (n=16)
- ASA status =3 (group I) vs ASA status <3 (group II); Functional outcomes are equal
- Age >75 years (group III) vs Age <75 years (group IV); Functional outcomes are equal
- Complications
  - UTI ; 6 pts
  - Transfusions and second-look surgery due to clot retention; 3 pts
- Tm:YAG laser VapoEnucleation seems safe and effective in high risk patients with simultaneous risk-factors like oral anticoagulation

1917 VAPOENUCLEATION OF THE PROSTATE USING THE THULIUM:YAG 2 MICRON CW LASER IN HIGH-RISK PATIENTS
Reduction of serum PSA level/Removed volume / Removed ratio
- no significant difference between PVP and HoLEP

- The greater reduction of serum PSA level after PVP or HoLEP correlates with higher preoperative PSA level, larger total prostate volume, larger transition zone volume, larger amount of removed tissue.

<table>
<thead>
<tr>
<th></th>
<th>HoLEP N=68</th>
<th>PVP N=45</th>
<th>HoLEP N=36</th>
<th>TURP N=40</th>
<th>HoLEP N=90</th>
<th>OP N=37</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSA decrease ratio (ng/ml/g)</td>
<td>0.27±0.04</td>
<td>0.12</td>
<td>0.11</td>
<td>0.1±0.2</td>
<td>0.09±0.05</td>
<td>0.1±0.07</td>
</tr>
<tr>
<td>PSA reduction (%)</td>
<td>84%</td>
<td>53.4%</td>
<td>65.2%</td>
<td>16.7</td>
<td>72%</td>
<td>90%</td>
</tr>
</tbody>
</table>

From Japan | From Korea | From Spain

1912 CHANGES IN SERUM PROSTATE SPECIFIC ANTIGEN FOLLOWING HOLMIUM LASER ENUCLEATION OF THE PROSTATE IN PATIENTS WITH BENIGN PROSTATIC HYPERPLASIA
1913 IS CHANGE OF SERUM PSA LEVEL AFTER LASER PROSTATECTOMY A MARKER FOR COMPLETENESS OF ADENOMA RESECTION?: COMPARISON BETWEEN KTP-PVP AND HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HOLEP)
883 Does changes of serum prostate specific antigen concentration after laser prostatectomy reflect the completeness of adenoma resection? Comparison between KTP-PVP and Holmium Laser Enucleation of the Prostate (HoLEP)
1914 EVALUATION OF SERUM PSA CHANGE FOLLOWING BPH SURGERY
PROSTATIC URETHRAL LIFT

1918 UPDATE ON THE PROSTATIC URETHRAL LIFT, A NOVEL MINIMALLY INVASIVE TREATMENT FOR SYMPTOMATIC BENIGN PROSTATIC HYPERPLASIA

PROSPECTIVE, MULTICENTER STUDY (5 CENTER)

COMPICATIONS

- Overnight hospitalization to monitor urinary retention; only one pt

ANESTHESIA

- Early 31 pts; under general anesthesia
- Recent 13 pts; under local anesthesia
  - 7 pts; undergoing an ultrasound guided peri-prostatic block
  - 6 pts; topical urethral analgesia, intravesical lidocaine and intravenous sedation

SUSTAINED IMPROVEMENT THROUGH 2 YEARS OF FOLLOW-UP

NORMAL SEXUAL FUNCTION WAS MAINTAINED

- no incidence of retrograde ejaculation

AUA, EAU FROM USA
Surgical smoke; combined transurethral resection and vaporization of the prostate (CTURVP, n=6)

Chemical composition analysis
- Gas chromatography-mass spectrometry (GC-MS)

For safety for operator and patients
- Filter mask
- Smoke evacuation device
- Smoke filter

2083 Is surgical smoke produced by combined transurethral resection and vaporization of the prostate toxic to operating personnel?
After TURP Validated self-reported sexual questionnaires (SQ) completed by patients and partners (n=280)

Pre-operative sexual dysfunction can be improved by TURP.

Long-term sexual function continues to be maintained following TURP.

These findings were corroborated by the partners

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Sexual Activity</th>
<th>Partner Response</th>
<th>Partner Agrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre TURP sexually active</td>
<td>n=120</td>
<td>Partner response</td>
<td>n=66</td>
</tr>
<tr>
<td>Pre TURP sexually inactive</td>
<td>n=160</td>
<td>Partner response</td>
<td>n=78</td>
</tr>
<tr>
<td>6 Months sexually active</td>
<td>n=78</td>
<td>Partner response</td>
<td>n=36</td>
</tr>
<tr>
<td>6 Months sexually inactive</td>
<td>n=71</td>
<td>Partner response</td>
<td>n=31</td>
</tr>
<tr>
<td>6 Years sexually active</td>
<td>n=39</td>
<td>Partner response</td>
<td>n=22</td>
</tr>
<tr>
<td>6 Years sexually inactive</td>
<td>n=62</td>
<td>Partner response</td>
<td>n=36</td>
</tr>
<tr>
<td>12 Years sexually active</td>
<td>n=42</td>
<td>Partner response</td>
<td>n=21</td>
</tr>
<tr>
<td>12 Years sexually inactive</td>
<td>n=71</td>
<td>Partner response</td>
<td>n=39</td>
</tr>
</tbody>
</table>
Video abstract

- V323 Transurethral Holmium laser deroofing of prostatic abcess: Description of technique and early results.
- V324 Histotripsy ablation of the prostate in a canine model
- V325 New aspects of ejaculation and its significance: Ejaculation preserving transurethral resection and laservaporesection of the prostate
- V326 Seoul technique: Modified vaporization resection technique for photselective varporization of the prostate using the greenlight high performance system 120W laser
- V327, V328 Outcomes and a novel technique for enucleation of the prostate
TUR (epTUR) and Laservaporesection (epLaVaP) of the prostate (n=306)
- ~ 1996 (n=197), an ejaculation preserving TUR prostate
- ~ 2001 (n= 87), ep TUR, prospectiv study with 5 year follow up control
- ~ 2008 (n= 22), laservaporesection

Outcomes
- Orthograde ejaculation; 92%
- In seminal fluid analysis, reduction of volume ; 30%

The internal bladder neck is irrelevant for orthogradic ejaculation
The anatomy of verumontanum is more important factor
PVP (120W green light), \( n=140 \)

- First step; Wedge resection of the median lobe
  - along both lateral margins of the median lobe

- Second step; Wedge resection of both lateral lobes
  - two semi-circular lines on the distal part of both lateral lobes at the level of the verumontanum

- Third step; Making the smooth surface of the TUR-like cavity
  - flatten the rough surface

V326 Seoul technique: Modified vaporization resection technique for photoselective vaporization of the prostate using the greenlight high performance system 120W laser
Symposium
“BPH treatment - from laser to plasma”
ESU Course
“Interventional therapies for BPH”

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To accommodate all the urologists who have been stranded due to the volcanic eruption in...
Read more >
# EAU abstract about BPH surgery (n=16)

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Cost 2  
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Holmium 2  
Thulium 1 | TUR 5  
TURis 1 | PSA 1  
Cost 1  
Urethral lift 1  
TUNA 1  
Smoke 1 |

6/16 abstract were simultaneously submitted in AUA
Prospective, comparative study

Conventional TUR P (n=150) vs TUR-P (E) (n=167)

- resection volume: 28±5ccm / 65 ± 11ccm, (p<0.0001)
- resection velocity: 0.62 ±0.1g/min / 1.25 ± 0.15g/min (p<0.0001)

In large BPH (>50ccm),
- the difference is even more emphasized (0.74 +/-0.05g/min vs 1.31 +/-0.08g/min, p<0.0001)

Blood loss and de novo urgency were significantly lower with TUR-P (E)

Functional outcomes; similar in both groups
Real-time TRUS guidance as a teaching aid
- construct a 3D image
- rapid determination of an appropriate exfoliation plane

A resident with experience as TRUS navigator achieved expert skill around 5 cases, while surgeon without the experience required around 30 cases

888 Usefulness of real-time transrectal ultrasound navigation for shortening the learning curve when mastering the holmium laser enucleation technique for symptomatic benign prostatic hyperplasia
Adhesion of surgical capsule and adenoma

Surgical capsule and adenoma can be defined by TRUS guidance to avoid capsular perforation.
Antegrade dissection HoLEP

- Group 1; by a supervisor
- Group 2; by a beginner, who has experienced more than 50 TURPs
- Group 3; by another beginner without any experience of TURP

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No patients (n=88)</td>
<td>63</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Operating time</td>
<td>104</td>
<td>139</td>
<td>147</td>
</tr>
<tr>
<td>Hb decrease</td>
<td>1.43</td>
<td>1.07</td>
<td>0.44</td>
</tr>
<tr>
<td>Cath. time</td>
<td></td>
<td>2-3days</td>
<td></td>
</tr>
<tr>
<td>SUI</td>
<td></td>
<td>none</td>
<td></td>
</tr>
</tbody>
</table>

Antegrade dissection HoLEP
- *simple to learn*
- *prevent from damaging a sphincter, capsular perforation*

889 Antegrade dissection HoLEP requires shorter leaning
Complication rate
- urinary retention (PVP 11 vs. TLVR 15 pts)
- bleeding/clot retention with reoperation (1 vs. 1 pt)
- transfusion (1 vs. 0 pt)

Re-operation (n=6 vs 3)
- PVP group (re-TURP 3x, urethrotomy 3x) / TLVR group (bladder neck incision 1x, urethrotomy 2x)

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Table 2: Outcome parameters after 6 weeks, 6 and 12 months

<table>
<thead>
<tr>
<th>No of pts (n=182)</th>
<th>PVP</th>
<th>TLVR</th>
<th>12 mths</th>
<th>12 mths</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 wks</td>
<td>98</td>
<td>64</td>
<td>36</td>
<td>45</td>
</tr>
<tr>
<td>PSA (ng/ml)</td>
<td>2.8 (0.04-28.1)</td>
<td>2.4 (0.04-20.6)</td>
<td>2.4 (0.04-20.6)</td>
<td>1.05 (0.2-2.7)</td>
</tr>
<tr>
<td>IPSS</td>
<td>9 (1-30)</td>
<td>5 (0-29)</td>
<td>1 (0-6)</td>
<td>6 (1-18)</td>
</tr>
<tr>
<td>QoL</td>
<td>2 (0-6)</td>
<td>1 (0-6)</td>
<td>2 (0-5)</td>
<td>1 (0-5)</td>
</tr>
<tr>
<td>Qmax (ml/s)</td>
<td>18 (6-23)</td>
<td>15 (6-70)</td>
<td>17 (5-50)</td>
<td>20 (11-41)</td>
</tr>
<tr>
<td>Res. Vol (ml)</td>
<td>15 (0-151)</td>
<td>17 (0-170)</td>
<td>10 (0-290)</td>
<td>10 (0-59)</td>
</tr>
<tr>
<td>Indw. Cath.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Data are presented as median (range) or number

No significant differences
Video abstract

- V26 TURis plasma vaporization of the prostate: Experience on 200 cases (abstract 885)
- V27 Dr. Son’s arterial bleeding control technique during photoselective vaporization of the prostate (PVP) of 120W GreenlightTM High Power System
In case of arterial bleeding

Step 1: Clear Identification of bleeding focus
Step 2: Changing the LASER energy to 60 W
Step 3: Putting the Laser fiber at the position of 5mm proximal to bleeding focus
Step 4: Lasing down the bleeding focus with near contact method

Because
1. prostatic arterial supply comes from proximal potion
2. lower energy lasing makes wider and thicker coagulation zone
3. near contact method provides accurate lasing without visual interference of bleeding

Limitation; cannot be applied to the 12 o’clock direction
감사합니다.
한국 8강 기원