Selection Criteria Used to Guide Surgical Approach for Management of Peyronie’s Disease

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Disclosures

AbbVie – Consultant, Speaker
Absorption Pharmaceuticals – Officer
American Medical Systems – Consultant
Auxilium – Consultant, Speaker
Coloplast – Consultant, Speaker

And…
Aims

- To evaluate surgical outcomes, refine surgical approach & establish realistic post-op expectations based upon our surgical algorithm
Factors Determining Selection of Surgical Approach

- Erectile function
- Degree of curvature
- Presence of hinge effect
- Penile length
Surgical Algorithm

- Satisfactory erections +/- PDE5i
  - Tunica albuginea plication (TAP)
    - Curvature < 60°
    - No hinge effect
  - Partial plaque excision & Grafting (PEG)
    - Curvature > 60°
    - Destabilizing hinge
    - +/- severe shortening

- Unsatisfactory erections +/- PDE5i
  - Placement of IPP w/ straightening maneuvers
    - Intracorporal scratch/stretch
    - Manual modeling
    - Plaque incision +/- grafting
    - +/- Plication

Goal of Surgical Algorithm

- Provide functionally straight erection $\leq 20^\circ$
- Preserve or improve rigidity
- Minimize shortening

NB – Some variation due to pt preference - 1° fear of ↓ length with TAP or refusing IPP
Materials & Methods

- Population - 389 men w/ PD had surgery at Rush Medical Center from 2007-2013

- Pre-op Eval:
  - Hx
    - Presence of Vascular risk factors
      - HTN, DM, ↑ lipids, smoking
  - Published PD intake questionnaire
  - PDQ when available
  - Duplex U/S w/ vasoactive injection
  - Rigidity assessment by pt & during duplex compared to home
    - 0-10, 7 = stuffable
<table>
<thead>
<tr>
<th>Patient Information</th>
<th>TAP</th>
<th>PEG</th>
<th>IPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Patients</td>
<td>114</td>
<td>159</td>
<td>117</td>
</tr>
<tr>
<td>Mean Age (range)</td>
<td>54.6 (25-71)</td>
<td>54.4 (28-71)</td>
<td>58.6 (30-79)</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>8.7%</td>
<td>8.9%</td>
<td>32.8%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>32.5%</td>
<td>27.8%</td>
<td>61.5%</td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td>47.4%</td>
<td>35.2%</td>
<td>52.1%</td>
</tr>
<tr>
<td>History of Smoking</td>
<td>38.6%</td>
<td>38%</td>
<td>47.9%</td>
</tr>
<tr>
<td>Hypogonadism</td>
<td>17.5%</td>
<td>21.5%</td>
<td>23.1%</td>
</tr>
</tbody>
</table>
Preoperative Comorbidities

- Diabetes Mellitus
- Hypertension
- Dyslipidemia
- History of Smoking
- Hypogonadism

* indicates p<0.05
<table>
<thead>
<tr>
<th>Preoperative Erectile Function</th>
<th>TAP</th>
<th>PEG</th>
<th>IPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperative Rigidity (1-10)</td>
<td>7.7 *</td>
<td>8.4 *</td>
<td>5.5 *</td>
</tr>
<tr>
<td>(subjective)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent with Diminished</td>
<td>78.9%</td>
<td>63.9%</td>
<td>96.8% *</td>
</tr>
<tr>
<td>Rigidity Compared to Pre-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peyronie's</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDE5i Use</td>
<td>20.1% *</td>
<td>8.0% *</td>
<td>38.5% *</td>
</tr>
</tbody>
</table>

* indicates p<0.05
Effect of Peyronie's on Personal Life

<table>
<thead>
<tr>
<th>Emotional Status</th>
<th>Relationship Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAP</td>
<td>PEG</td>
</tr>
<tr>
<td>78.7</td>
<td>76.0</td>
</tr>
<tr>
<td>80.6</td>
<td>72.9</td>
</tr>
<tr>
<td>80.0</td>
<td>70.7</td>
</tr>
<tr>
<td>79.9</td>
<td>Overall</td>
</tr>
</tbody>
</table>

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**Peyronie's Disease Questionnaire Results**

- **Psych and Physical Symptoms (0-24)**:
  - TAP: 13.7
  - PCG: 13.9
  - IPP: 12.2
  - Overall: 10.0

- **Pain (0-30)**:
  - TAP: 7.2
  - PCG: 7.3
  - IPP: 4.7
  - Overall: 6.2

- **Bother (0-16)**:
  - TAP: 9.3
  - PCG: 9.7
  - IPP: 9.6
  - Overall: 9.7

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### Peyronie's Disease Questionnaire Results

<table>
<thead>
<tr>
<th></th>
<th>TAP</th>
<th>PEG</th>
<th>IPP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effect on Emotional Status</strong></td>
<td>78.7%</td>
<td>80.6%</td>
<td>80.0%</td>
</tr>
<tr>
<td><strong>PDQ Bother Score (0-16)</strong></td>
<td>9.3</td>
<td>9.7</td>
<td>9.6</td>
</tr>
</tbody>
</table>
# Duplex Ultrasound Findings

<table>
<thead>
<tr>
<th></th>
<th>TAP</th>
<th>PEG</th>
<th>IPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Rigidity (1-10)</td>
<td>8.2 *</td>
<td>8.8 *</td>
<td>6.9 *</td>
</tr>
<tr>
<td>Mean Total Curvature (Degrees)</td>
<td>59</td>
<td>79 *</td>
<td>63.5</td>
</tr>
<tr>
<td>Hinge Effect</td>
<td>33.3%</td>
<td>64.1% *</td>
<td>38.5%</td>
</tr>
<tr>
<td>Calcification</td>
<td>15.7%</td>
<td>41.0% *</td>
<td>29.0%</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Postoperative Outcomes</th>
<th>TAP</th>
<th>PEG</th>
<th>IPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Follow Up Duration in Months (range)</td>
<td>15.7 (0 – 75.4)</td>
<td>13.9 (0 – 63.4)</td>
<td>18.4 (0 – 84.0)</td>
</tr>
<tr>
<td>Change in SPL in cm (range)</td>
<td>0.44 (-2 to +3) *</td>
<td>0.96 (-2 to +4) *</td>
<td>n/a</td>
</tr>
<tr>
<td>Percent Satisfied with Penile Rigidity</td>
<td>66.2%</td>
<td>72.4%</td>
<td>n/a</td>
</tr>
<tr>
<td>Percent Engaging in Penetrative Sex</td>
<td>93.8%</td>
<td>83.3%</td>
<td>87.0%</td>
</tr>
<tr>
<td>Percent with Residual Bothersome Curvature</td>
<td>17.4%</td>
<td>18.4%</td>
<td>26.1%</td>
</tr>
</tbody>
</table>

* indicates p<0.05
Change in SPL Postoperatively *

* indicates p<0.05

- TAP: 0.44
- PEG: 0.96
Post-Op Ability to Engage in Intercourse

- TAP: 93.8%
- PEG: 83.3%
- IPP: 87.0%
- Overall: 87.4%
Discussion

- IPP candidates more likely to have vascular risk factors, more severe ED & use pre-op PDE5i’s

- Psychological effects of PD creates similar high levels of distress across entire population

- Grafting remains viable approach in properly selected pts – careful counseling re: post-op ED critical

- Additional length loss following surgery unlikely – but must counsel pt re: low likelihood of restoration of pre-op length
Conclusions

- Our surgical algorithm appears effective to obtain satisfactory surgical outcomes by:
  - Separating patients by erectile capacity & severity of deformity
  - Stratifying by curvature severity (+/- 60°) appears to avoid significant subjective & measured length loss
  - Duplex U/S & pre-op subjective erectile status still good predictors of post-op erectile function & coital capacity
  - Does not necessarily address pre-op psychological distress & satisfaction with surgical outcome – all groups had similar high levels of distress and bother
  - Must recognize effects of patient preference on algorithm
    - Fear of length loss
    - Refusing IPP