UTILIZATION OF PRE-OPERATIVE PENILE STRETCH TEST AS A PREDICTOR OF ERECTION AND TOTAL IMPLANT LENGTH

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• Inflatable Penile Prosthesis Placement is considered the gold standard treatment for refractory erectile dysfunction.

• Penile length shortening has been reported in 30-70%.
  – Perception of shortening→ 43% of men

?predict the length an counsel
In spite of many advances→ Paucity of data remains an issue.

Palma PC et al J Urol 1990;143: 764
Osterberg et al. Jul 2014:

“Pharmacologically induced erect penile length and stretched penile length are both good predictors of post-inflatable prosthesis penile length.”

- Peyronie's disease were excluded
- prospective study examining penile lengths before and after IPP surgery in 20 patients
- All patients underwent implantation with a three-piece inflatable Coloplast penile prosthesis.

• Median post-prosthesis penile length (13.5±2.13 cm) was smaller than preoperative pharmacologically induced length (P=0.02) and preoperative stretched penile length (P=0.01).

• (70%) had a decrease in penile length (median loss 0.5±1.5 cm)

• <50% of patients reported decrease in length.

• Wang et al. reported a decrease in penile length after IPP.

• Pre IPP measurements after intracavernosal injections were taken in 11 patients.

• Post IPP measurements were taken at 6 weeks, 6 months and at 1 year.

• There were 0.83 +/- 0.25, 0.75 +/- 0.20 and 0.74 +/- 0.15 cm decreases in erect penile length respectively p<0.05.

Objectives

• Prediction of the erection and total corporal length prior to inflatable penile prosthesis (IPP) surgery is of great benefit
  – surgeon
  – patient

• For the patient, estimation of the post-operative result → realistic expectations.
Objectives

- We sought out to look for reproducibility thereby predicting cylinder size and post op length.
- The ability to accurately calculate the range of the total implant length utilizing a penile stretch test
- could focus the amount of inventory shipped for an individual procedure.
  - Decrease in Cost
  - Higher Satisfaction rate
Materials and Methods

• Fifty-three consecutive virgin IPP patients were performed by a single surgeon over 30 days.

✓ Coloplast Titan® IPP through an infrapubic approach

✓ pre-operative stretch test
   ✓ Furlow along the dorsal aspect of the penis from the mons pubis to the tip of the glans

✓ Intraoperatively, the same measurements were repeated
   ✓ after induction of normal saline artificial erection
   ✓ after implantation and inflation of the device
Materials and Methods

• Bilateral total device length (cylinder +/- rear tip extenders) were documented.

• Formulas based on the stretch test were constructed to predict the total device length [stretch test + (x%) stretch test].

• Descriptive statistics, paired significance testing and linear regression were performed using Stata 13.
# Patient Demographics

<table>
<thead>
<tr>
<th># of patients= 53</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min-max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>67.4 Years</td>
<td>7.04</td>
<td>40-83</td>
</tr>
<tr>
<td>Stretch Test</td>
<td>16.10 cm</td>
<td>1.40</td>
<td>13-19</td>
</tr>
<tr>
<td>Erection Test</td>
<td>15.51 cm</td>
<td>1.40</td>
<td>11-19</td>
</tr>
<tr>
<td>Intra-op Measurement</td>
<td>16.02 cm</td>
<td>1.32</td>
<td>12.5-19.5</td>
</tr>
<tr>
<td>Implant size</td>
<td>19.32 cm</td>
<td>1.41</td>
<td>16-22</td>
</tr>
</tbody>
</table>
Patient Demographics

![Histogram showing distribution of Preoperative Stretch Test (cm) with percent on the y-axis and cm values on the x-axis. The highest bar is centered around 16 cm.]
Analysis
## Analysis

<table>
<thead>
<tr>
<th>Formula</th>
<th>% correct prediction of implant length within the range (stretch test – calculated value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stretch + (.15) Stretch (cm)</td>
<td>43%</td>
</tr>
<tr>
<td>Stretch + (.20) Stretch (cm)</td>
<td>71%</td>
</tr>
<tr>
<td>Stretch + (.30) Stretch (cm)</td>
<td>94%</td>
</tr>
<tr>
<td>Stretch + (.35) Stretch (cm)</td>
<td>96%</td>
</tr>
</tbody>
</table>
Conclusion

- The stretch test is a risk free, cost free reproducible test that helps predict
  - IPP cylinder size
  - Post operative penile length.

- This is of paramount importance to prosthetic surgeons and patients as it aids in decreasing the cost of an operation
  - typically not covered by insurance or Medicare.

- It also provides a better estimation of post-operative penile length
  - thus contributing to better patient expectations and satisfaction.
THANK YOU