Effective Adjustment of Retrograde Leak Point Pressure with a Novel Anchored Male Continence System

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Hypothesis / aims of study

Management of male SUI - aims of study
- functional / fixed slings
- compressive / adjustable slings

Scarc data on urethral closure pressure after male sling implantation The AdVance™ (Boston Scientific) fixed sling does not change voiding parameters, only ALPP increased significantly.¹

Literature data of compressive slings on target closure pressure range from 30 - 80 cmH₂O and varies by type of sling.
A pressure of 50 cmH₂O may serve as a reasonable threshold.²

Evaluation of urethral closure pressure

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<tr>
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<th>UPP</th>
<th>ALPP</th>
<th>VLPP</th>
<th>CLPP</th>
<th>RLPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>In vivo</td>
<td>+</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>In vitro (Cadaver)</td>
<td>-</td>
<td>+/-</td>
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Post-Prostatectomy-Incontinence (PPI)²

<table>
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<tr>
<th></th>
<th>MUCP</th>
<th>ALPP</th>
<th>RLPP</th>
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<tr>
<td>52.0 +/- 21.1 cmH₂O</td>
<td>49.4 +/- 24.4 cmH₂O</td>
<td>48.0 +/- 13.5 cmH₂O</td>
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Regression analysis: RLPP versus MUCP, r = 0.59, P <0.005
MUCP versus ALPP, r = 0.75, P <0.0001
RLPP versus ALPP, r = 0.79, P <0.0001

Conclusion: In male SUI sphincter function may be assessed equally well by MUCP, ALPP, or RLPP.²

Aims of study: Evaluation of efficacy of a novel compressive anchored male continence system by measurement of urethral closure pressure

Results

4 series of RLPP measurement after
1) sling insertion
2) sling tensioning
3) final sling fixation
4) wound closure

Interpretation of results

The newly designed anchor demonstrated easy application and excellent stability. It is suitable for single incision, outside-in, safe, and simple fixation of a novel adjustable male sling system. After technical refinements the novel anchored male sling system presented with an easy and reliable insertion process to keep the sling and the central cushion in place.

With the novel anchored male sling system the retrograde leak point pressure can be effectively adjusted as a function of the filling volume of the central cushion. With regard to the literature the desired pressures between 30 and 60 cmH₂O could be well achieved with low filling volumes.

The relation of the filling volume of the device, urethral closure pressure, and continence status has to be determined in future clinical studies.

Concluding message

The novel anchored male adjustable sling system can effectively increase urethral closure pressure as measured as retrograde leak point pressure in fresh male cadavers. With the simple, minimally invasive, and reliable insertion process the device shows great promise for advancing male continence surgery.

References

Disclosures
Grant from the German Federal Ministry for Economic Affairs and Energy (BMWi) through the ‘Central Innovation Program for medium-sized businesses (ZIM)’