LAPAROSCOPIC COLPOSUSPENSION VS VAGINAL MESH SLING: A RANDOMISED PROSPECTIVE TRIAL

Hypothesis / aims of study
This study aimed to determine which was the most effective form of two minimally invasive surgeries to treat female genuine stress incontinence. In particular laparoscopic colposuspension was compared with vaginal mesh sling (SPARC) in a randomised prospective trial.

Mesh sling surgery was first described in 1995. Mesh sling surgery was compared with open colposuspension in 2000 (1), in a randomised trial of 319 women, and found a similar success rate (89 vs 85%) with a significantly reduced hospitalisation rate (2.2 vs 6.5 days).

Burch colposuspension was first described in 1960, with a short term success rate of 90% and a 10 year success rate of 70% (2). Laporoscopic colposuspension was first performed in 1991, and has been compared with open Burch colposuspension in 2000 (3) with a randomised trial of 200 women. The success rates were similar (80%) with the laparoscopic group having a quicker recovery.

Study design, materials and methods
Over a 2 year period, from January 2002 to March 2004, 80 women with urodynamically proven genuine stress incontinence were randomised to either laparoscopic colposuspension (LC) or vaginal mesh sling (VMS). The trial was approved by an ethics committee. Patients were excluded from the study if they had other bladder diagnoses such as detrusor instability or voiding difficulty, previous retropubic surgery, weight over 100kg, significant prolapse, required other gynaecological surgery, or were unsuitable for laparoscopic surgery. All surgeries were performed by the author.

Baseline assessment included urodynamics, bladder diary, VAS score, Quality of Life Questionnaires (York and Urogenital Distress Inventory). Patients were again assessed at 6 months. Statistical analysis was performed using student T test and Chi squares with significance reported if P<0.05.

At baseline there were no significant different differences between the two groups.

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<thead>
<tr>
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<th>LC (n=40)</th>
<th>VMS (n=40)</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
<td>51.3</td>
<td>54.9</td>
<td>NS</td>
</tr>
<tr>
<td>Weight</td>
<td>70.0</td>
<td>73.1</td>
<td>NS</td>
</tr>
<tr>
<td>Parity</td>
<td>2.7</td>
<td>2.5</td>
<td>NS</td>
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Results
The VMS group had significantly shorter surgery time, hospitalisation and recovery.

<table>
<thead>
<tr>
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<th>LC (n=20)</th>
<th>VMS (n=23)</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>Surgery (min)</td>
<td>48.6</td>
<td>31.3</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>EBL (mls)</td>
<td>102</td>
<td>83</td>
<td>0.04</td>
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<tr>
<td>Hospital (days)</td>
<td>4.1</td>
<td>1.6</td>
<td>&lt;0.0001</td>
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<tr>
<td>Recovery (weeks)</td>
<td>3.8</td>
<td>2.8</td>
<td>0.01</td>
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Intraoperative complications in the laparoscopic group were one bladder suture requiring intraoperative repositioning. The vaginal prolene sling group had 3 needle perforations of the bladder requiring intraoperative repositioning.

At six months the two groups had a similar success rate (90% vs 87%), with similar results also seen in VAS, and QOL assessments. There was a trend towards increased urgency in the VMS group.
LC (n=40)  VMS (n=40)  P
Leaks/wk  0  8.55  8.89
       6  1.35  3.1  NS
York  0  97.61  97.11
       6  99.65  99.62  NS
UD  0  80.3  80.4
       6  94.7  97.7  NS
VAS  0  5.5  5.0
       6  1.5  0.6  NS
Cured/improved  18/20 (90%)  20/23 (87%)  NS
Voiding difficulty  0  1
Urgency  3  6
UTIs  0  1
Mesh erosion  0  1
Prolapse  1  0

**Concluding message**
In the short term VMS results in significantly shorter operating time, time in hospital, and time to normal duties. In the longer term there were no significant differences between the two groups although the VMS had a higher incidence of urgency and a vaginal mesh erosion was noted. Laparoscopic colposuspension may be indicated for younger women who do not need prolapse surgery and in whom a long term foreign body may be of concern with regards to urgency and erosion.

**References**