Supplementary Online Content

Chughtai B, Barber MD, Mao J, Forde JC, Normand ST, Sedrakyan A. Association between the amount of vaginal mesh used with mesh erosions and repeated surgery after repairing pelvic organ prolapse and stress urinary incontinence. *JAMA Surg.* Published online November 30, 2016. doi:10.1001/jamasurg.2016.4200

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This supplementary material has been provided by the authors to give readers additional information about their work.
<table>
<thead>
<tr>
<th>eTable 1. Definition of Procedures</th>
<th>ICD-9 Procedure Code</th>
<th>CPT-4 Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mesh-specific procedure codes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair of cystocele and rectocele with graft or prosthesis</td>
<td>70.53</td>
<td>Insertion of mesh or other prosthesis for repair of pelvic floor defect</td>
</tr>
<tr>
<td>Repair of cystocele with graft or prosthesis</td>
<td>70.54</td>
<td></td>
</tr>
<tr>
<td>Repair of rectocele with graft or prosthesis</td>
<td>70.55</td>
<td></td>
</tr>
<tr>
<td>Vaginal construction with graft or prosthesis</td>
<td>70.63</td>
<td></td>
</tr>
<tr>
<td>Vaginal reconstruction with graft or prosthesis</td>
<td>70.64</td>
<td></td>
</tr>
<tr>
<td>Vaginal suspension and fixation with graft or prosthesis</td>
<td>70.78</td>
<td></td>
</tr>
<tr>
<td>Other operations on cul-de-sac with graft or prosthesis</td>
<td>70.93</td>
<td></td>
</tr>
<tr>
<td>Insertion of biological graft</td>
<td>70.94*</td>
<td></td>
</tr>
<tr>
<td>Insertion of synthetic graft or prosthesis</td>
<td>70.95*</td>
<td></td>
</tr>
<tr>
<td><strong>General Prolapse Repair codes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair of cystocele and rectocele, no graft</td>
<td>70.50</td>
<td>Rectocele repair</td>
</tr>
<tr>
<td>Repair of cystocele, no graft</td>
<td>70.51</td>
<td>Anterior colporrhaphy, repair of cystocele</td>
</tr>
<tr>
<td>Repair of rectocele, no graft</td>
<td>70.52</td>
<td>Posterior colporrhaphy, repair of rectocele</td>
</tr>
<tr>
<td>Other operations on cul-de-sac (repair of vaginal enterocele), no graft</td>
<td>70.92</td>
<td>Combined anteroposterior colporrhaphy with enterocele repair</td>
</tr>
<tr>
<td>Vaginal construction, no graft</td>
<td>70.61</td>
<td>Combined anteroposterior colporrhaphy</td>
</tr>
<tr>
<td>Vaginal reconstruction, no graft</td>
<td>70.62</td>
<td>Enterocele Repair—vaginal approach</td>
</tr>
<tr>
<td>Vaginal suspension and fixation, no graft</td>
<td>70.77</td>
<td>Colpocleisis</td>
</tr>
<tr>
<td>Colpocleisis</td>
<td>70.80</td>
<td>Colpexy, vaginal, extraperitoneal approach</td>
</tr>
<tr>
<td>Other uterine suspension</td>
<td>69.22</td>
<td>Colpexy, vaginal, intraperitoneal approach</td>
</tr>
<tr>
<td>Vaginal repair of chronic inversion of uterus</td>
<td>69.23</td>
<td>Paravaginal defect repair, vaginal approach</td>
</tr>
<tr>
<td>Other repair of uterus and supporting structures</td>
<td>69.29</td>
<td>Pereyra procedure, including anterior colporrhaphy</td>
</tr>
<tr>
<td>Other operation on supporting structure of the uterus</td>
<td>69.98</td>
<td>Uterine suspension</td>
</tr>
<tr>
<td>Obliteration of vaginal vault and total excision of vagina</td>
<td>70.4</td>
<td>Uterine suspension</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vaginal hysterectomy, with repair of enterocele</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Code</th>
<th>Procedure Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>58293</td>
<td>Vaginal hysterectomy, with colpourethrocystopexy, complicated</td>
<td></td>
</tr>
<tr>
<td>58294</td>
<td>Vaginal hysterectomy with repair of enterocele, complicated</td>
<td></td>
</tr>
</tbody>
</table>

**Sling Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>59.4</td>
<td>Retropubic Urethral Suspension</td>
<td></td>
</tr>
<tr>
<td>59.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57288</td>
<td>Sling operation for stress incontinence</td>
<td></td>
</tr>
</tbody>
</table>

*Must be used concurrently with other prolapse repair codes.*
<table>
<thead>
<tr>
<th></th>
<th>POP repair (mesh) and sling</th>
<th>POP repair (mesh) and no sling</th>
<th>POP repair (no mesh) and sling</th>
<th>Synthetic sling only</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total patients</strong></td>
<td>4934</td>
<td>3678</td>
<td>10206</td>
<td>21737</td>
</tr>
<tr>
<td><strong>Repeated surgery</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Estimated risk</em></td>
<td>5.63% (5.03%-6.31%)</td>
<td>4.35% (3.74%-5.06%)</td>
<td>3.78% (3.43%-4.17%)</td>
<td>2.49% (2.29%-2.71%)</td>
</tr>
<tr>
<td><em>Median days to surgery (IQR)</em></td>
<td>143 (55-246)</td>
<td>180 (116-248)</td>
<td>141 (74-251)</td>
<td>124 (41-218)</td>
</tr>
<tr>
<td><strong>Erosion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Estimated risk</em></td>
<td>2.80% (2.37%-3.30%)</td>
<td>1.99% (1.58%-2.49%)</td>
<td>1.92% (1.67%-2.21%)</td>
<td>1.55% (1.39%-1.72%)</td>
</tr>
<tr>
<td><em>Median days to surgery (IQR)</em></td>
<td>118 (49-205)</td>
<td>132 (80-207)</td>
<td>126 (41-221)</td>
<td>119 (42-208)</td>
</tr>
<tr>
<td><strong>Repeated surgery with concomitant Erosion Diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Estimated risk (Competing Risk Analysis)</em></td>
<td>2.19% (1.81%-2.63%)</td>
<td>1.22% (0.91%-1.62%)</td>
<td>1.34% (1.13%-1.58%)</td>
<td>1.15% (1.01%-1.29%)</td>
</tr>
<tr>
<td><em>Median days to surgery (IQR)</em></td>
<td>123 (55-204)</td>
<td>143 (90-207)</td>
<td>126 (52-230)</td>
<td>119 (47-210)</td>
</tr>
</tbody>
</table>

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**eTable 3. National Estimates of Total Women Affected (Mean Follow-up 3.4 Years) in a 5-Year Cohort**

<table>
<thead>
<tr>
<th>Population</th>
<th>POP repair (mesh) and sling</th>
<th>POP repair (mesh) and no sling</th>
<th>POP repair (no mesh) and sling</th>
<th>Synthetic sling only</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients in NYS</td>
<td>5070</td>
<td>3798</td>
<td>10484</td>
<td>22252</td>
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</tr>
<tr>
<td>Total NYS female population=10000955</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total US female population=156964212</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Erosion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>2.72%</td>
<td>1.95%</td>
<td>1.90%</td>
<td>1.55%</td>
<td></td>
</tr>
<tr>
<td>Estimated US patients</td>
<td>3626</td>
<td>1946</td>
<td>5195</td>
<td>9668</td>
<td>20435</td>
</tr>
<tr>
<td><strong>Repeated surgery</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>2.13%</td>
<td>1.21%</td>
<td>1.33%</td>
<td>1.15%</td>
<td></td>
</tr>
<tr>
<td>Estimated US patients</td>
<td>8146</td>
<td>4975</td>
<td>12132</td>
<td>15177</td>
<td>40430</td>
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<tr>
<td><strong>Repeated surgery with concomitant Erosion Diagnosis</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>5.64%</td>
<td>4.27%</td>
<td>3.79%</td>
<td>2.50%</td>
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<tr>
<td>Estimated US patients</td>
<td>2872</td>
<td>1099</td>
<td>3594</td>
<td>6404</td>
<td>13969</td>
</tr>
</tbody>
</table>

National estimates based on New York State and US female population from 2010 census.
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**eFigure 2.** Time to Repeated Surgery Related to Erosion Following Index Procedures: (A) Standard Kaplan-Meier Analysis and (B) With Competing Risk Analysis
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