Differences in Bacteriological Analysis of Explanted Transvaginal Mesh  
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Introduction
- Mesh is frequently used in the treatment of pelvic organ prolapse and stress urinary incontinence.
- Complications of vaginal mesh include:
  - Mesh exposure / extrusion into the vagina
  - Mesh erosion into lower urinary tract
  - Painless mesh (non-exposed, non-eroded)
  - Painful mesh (non-exposed, non-eroded)
- Incidence of mesh related infections is 0–8%.
- Subclinical bacterial infection may be acquired during initial implantation and may result in mesh related pelvic pain.

Objectives
- Assess bacteriological differences between painful and non-painful trans-vaginal mesh.

Methods
- Retrospective review of 13 patients requiring trans-vaginal removal of mesh from the vagina or lower urinary tract.
- Excised mesh sent for bacteriological and fungal analysis.
- Vaginal swab cultures sent prior to mesh explantation.

Results
- Thirteen patients underwent 14 trans-vaginal mesh explantations.
- Indications for mesh removal included:
  - Painful mesh (35.7%)
  - Extrusion / exposure into the vagina (28.5%)
  - Erosion into the lower urinary tract (21.4%)
  - Painless mesh failure (14.2)
- Positive mesh cultures were found in 71.4% of mesh.
- Vaginal swab cultures were positive in 61.5% of patients.
  - Majority did not correlate with the mesh cultures.
  - Enterococcus faecalis only pathogenic organism.
- As expected, despite pre-operative preparation, majority of vaginal swabs had colonization with indigenous organisms.

Conclusions
- Patients presenting with painful mesh frequently have a subclinical bacterial infection or colonization. These patients may require more aggressive surgical intervention.
- Bacterial cultures differ from normal vaginal flora in most situations.
- Directions for the future include larger sample size, prospective study and a multidisciplinary study.

Table 1: Patient Demographics

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Number of mesh explanted</th>
<th>Number of patients</th>
<th>Duration from initial procedure to mesh explantation (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>56.8 (35-86)</td>
<td>14</td>
<td>13</td>
<td>5.1 (1-11)</td>
</tr>
</tbody>
</table>

Table 2: Culture results

<table>
<thead>
<tr>
<th>Surgical Indication</th>
<th>Positive Mesh Culture</th>
<th>Positive Vaginal Culture</th>
<th>Same Organism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painful mesh (n=5)</td>
<td>3 (60%)</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Vaginal exposure/ extrusion (n=4)</td>
<td>2* (50%)</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Urinary tract erosion (n=3)</td>
<td>3 (100%)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Painless failed mesh (n=2)</td>
<td>2 (100%)</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

* Pathogenic organism.

Table 3: Pathogenesis

<table>
<thead>
<tr>
<th>Pathogenic organisms</th>
<th>Non-pathogenic organisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterococcus faecalis</td>
<td>1</td>
</tr>
<tr>
<td>Staphylococcus 2</td>
<td>Mixed anaerobic bacteria</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Corynebacterium 1</td>
<td>Lactobacillus 2</td>
</tr>
<tr>
<td>Peptostreptococcus 1</td>
<td>Propionibacterium 2</td>
</tr>
</tbody>
</table>

References