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Mesh in Pelvic Surgery
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MESH in PELVIC SURGERY

- COMPLICATIONS

- What are the complications of vaginal mesh in surgery for pelvic organ prolapse?
### MESH in PELVIC SURGERY

*Range of Percentage of Mesh-Related Complications*

<table>
<thead>
<tr>
<th>Reported Complication</th>
<th>Range Based on Case Series (%)</th>
<th>Range Based on Randomized Controlled Trials (%)</th>
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<tbody>
<tr>
<td>Mesh erosion (exposure)</td>
<td>1 - 18.8</td>
<td>5 - 19</td>
</tr>
<tr>
<td>Buttock, groin, or pelvic pain</td>
<td>2.9 – 18.3</td>
<td>0 - 10</td>
</tr>
<tr>
<td>De novo dyspareunia</td>
<td>2.2 - 15</td>
<td>8 – 27.8</td>
</tr>
<tr>
<td>Reoperation**</td>
<td>1.3 – 7.6</td>
<td>3.2 - 22</td>
</tr>
</tbody>
</table>

**Does not include reoperation for stress incontinence.**

* Table is adapted from the SOGC review and reports additional case studies and randomized trials of mesh for POP published since the Canadian review that analyzed literature published through May 2010.
References to Table

- Data from Transvaginal mesh procedures for pelvic organ prolapse. SOGC Technical Update No. 254. Society of Obstetricians and Gynaecologists of Canada.
- Int Urogynecol J Pelvic Floor Dysfunct 2010;21:1455–62; Nguyen JN, Burchette RJ. Outcome after anterior vaginal prolapse repair: a randomized controlled trial.
- Obstet Gynecol 2010;116:293–303; Withagen MI, Milani AL, den Boon J, Vervest HA, Vierhout ME. Trocar-guided mesh compared with conventional vaginal repair in recurrent prolapse: a randomized controlled trial.
Several recent retrospective reports provide longer follow-up. One reported that vaginal erosion rates for anterior mesh repairs ranged from 7% to 20% (13) with one half of the cases managed with vaginal estrogen and antibiotics and the other half requiring surgical mesh removal (partial or complete).

Another reported 5-year follow-up in a cohort of 85 women after vaginal mesh surgery (14). The overall rate of mesh exposure was 18.8% with 56% (9/16 patients) requiring reintervention for partial mesh excision. Anatomic success rate (defined as less than POP quantification system stage II) at 5 years was 66.7%.
One report evaluated a cohort of 355 women after vaginal mesh procedures (15). Eighteen percent of the women developed pelvic muscle dysfunction and pain; of these, one quarter continued to have symptoms after 6 months of therapy.

Pelvic pain, groin pain, and dyspareunia can occur with pelvic reconstructive surgery regardless of the use or nonuse of mesh. However, a complication unique to mesh is erosion (also described as exposure or extrusion), which seems to be the most common complication, and may sometimes present several years after the index procedure.
There are increasing reports of vaginal pain associated with changes that can occur with mesh (contraction, retraction, or shrinkage) that result in taut sections of mesh; 11.7% of patients were found to have retracted mesh in a large retrospective multicenter cohort (16).

Some of these women will require surgical intervention to correct the condition, and some of the pain appears to be intractable.
Risk factors for developing intractable pain after vaginal mesh placement are not understood.

Mesh grafts for abdominal hernia repair, which are placed in clean surgical planes with intervening tissue layers, can cause pain in one quarter of individuals 1 year after repair; in one half of these cases there was functional impairment (17).

Hernia mesh also is known to undergo retraction (18), and pain persists in patients at 5 years (19).
Mesh grafts in the vagina are placed in a clean–contaminated field with a single vaginal incision, and the “arms” of some mesh configurations pass into the obturator internus and levator ani muscles. Shrinkage or contraction of mesh around these structures or excess tension on the mesh arms can cause vaginal pain in some individuals.

All vaginal surgery can potentially affect vaginal length and function; however, the addition of synthetic mesh could make the vagina, a cylindrical organ that expands and contracts, less pliable and perhaps more prone to pain or dyspareunia.

One ultrasound study evaluating women at 3 months after anterior vaginal mesh placement found severe contraction or shrinkage, defined as a decrease of more than 50% of the size of the mesh, in 9.3% of patients (20).
Based on the currently available limited data, although many patients who undergo mesh-augmented vaginal repairs heal well without problems, there seems to be a small but significant group of patients who experience permanent and life-altering sequelae, including pain and dyspareunia, from the use of vaginal mesh.

These problems emerge in studies with longer follow-up, similar to hernia literature.

MORE LARGER SCALE STUDIES ARE NEEDED TO UNDERSTAND THIS ISSUE.
TREATMENT

- SELECTION OF THE RIGHT PROCEDURE FOR PATIENTS
- THOROUGH PRE-OP EVALUATION
- INTRAOPERATIVE DESENSITIZATION
- POST-OP PAIN CONTROL