Is Sacral Neuromodulation Effective in Women with Prior Prolapse Repair?

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Background

• Overactive bladder (OAB) symptoms frequently occur in women with pelvic organ prolapse (POP), with a prevalence as high as 88%.
• OAB in women with POP is believed to be related to a prolapsed anterior vaginal wall resulting in an abnormal position of the bladder trigone.
• Treatment of POP (surgery, pessary) gives some improvement in OAB complaints, however OAB symptoms can persist in 50% of women.
• Increased severity of POP is a risk factor for persistent OAB symptoms after surgery for POP.
• Sacral neuromodulation (SNS) is an effective third line therapy for patients with refractory OAB.
• SNS’s efficacy following POP repair is not well described.

Aim: Determine the efficacy of SNS in women with refractory OAB who have undergone prior anterior and/or apical POP repair.

Methods

• Retrospective review from a single institution of all SNS lead placements in women from 1998 to 2017.
• Women with prior anterior and/or apical POP repair were compared to women without prior POP repair.
• POP repair group excluded patients who did not have repair of anterior and/or apical compartment.
• Primary outcome: Efficacy of SNS, defined as 50% improvement in voiding diary parameters with progression to pulse generator implantation (stage 2 SNS).
• Secondary outcomes: Device explanation rates and need for subsequent therapy.

Results

• Of 234 patients who underwent SNS, 37 (16%) had a prior anterior and/or apical POP repair.
• Compared to patients without prior POP repair, patients with prior POP repair:
  - Were significantly older (67 vs 59 yo, p=0.01).
  - Had more likely to have a history of myocardial infarction (14% vs 3%, p=0.01).
  - Had no significant difference in BMI, race, smoking status, and other comorbidities including diabetes, stroke, and cardiovascular disease.
• Mean duration of follow up was similar between the two groups (3.2 vs. 3.5 years, p=0.73), defined as time between stage 1 SNS and last clinic visit.
• Subjects in prior POP repair group did not differ in progression to stage 2 SNS (73% vs 66%, p=0.45), revision surgery (11% vs 11%, p=0.95), explanation rates (14% vs 17%, p=0.81), or need for subsequent therapies (Table 1).

Table 1: Postoperative Outcomes

<table>
<thead>
<tr>
<th>Postoperative Outcomes</th>
<th>Prior POP Repair (n=37)</th>
<th>No Prior POP Repair (n=197)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progression to Stage 2</td>
<td>27 (73%)</td>
<td>130 (66%)</td>
<td>0.45</td>
</tr>
<tr>
<td>Revision Surgery</td>
<td>4 (11%)</td>
<td>22 (11%)</td>
<td>0.95</td>
</tr>
<tr>
<td>Revision Indication</td>
<td></td>
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<tr>
<td>Battery exchange</td>
<td>1 (3%)</td>
<td>12 (6%)</td>
<td>0.69</td>
</tr>
<tr>
<td>Other (pain, lead migration, wire extrusion)</td>
<td>3 (8%)</td>
<td>10 (5%)</td>
<td>0.44</td>
</tr>
<tr>
<td>Explantation Rate</td>
<td>5 (14%)</td>
<td>33 (17%)</td>
<td>0.81</td>
</tr>
</tbody>
</table>

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Conclusions

• SNS is as effective in women with refractory OAB who have undergone prior anterior and/or apical POP repair as it is in women who have not undergone prior POP repair.
• Women who have previously had POP repair are not at greater risk of sequelae after SNS.
• 30% of women required additional OAB therapy after SNS regardless of prior anterior and/or apical POP repair status.
• SNS is a reasonable third-line treatment option for women with refractory OAB symptoms who have had prior anterior and/or apical POP repair.

Future Directions

• Prospective study comparing efficacy of SNS by stage of POP in those with treated vs. untreated POP.
• Evaluation of risk factors associated with de novo OAB symptoms following POP repair.
• Evaluation of the efficacy of additional third line therapies in women with refractory OAB and POP.

References