Laparoscopic Vertical Sleeve Gastrectomy (LVSG): Efficacy of Using GORE SEAMGUARD® Bioabsorbable Staple Line Reinforcement to Buttress the Staple Line

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INTRODUCTION

• Minimally Invasive Bariatric Surgery continues to evolve with the development of both new techniques and technology.
• The LVSG procedure is gaining increasing acceptance.
• Many questions regarding surgical technique, patient selection, and treatment outcomes remain unanswered.
• Gagner et al in a small case study previously suggested a role for GORE SEAMGUARD® Bioabsorbable Staple Line Reinforcement in the performance of the LVSG.
• This study provides comparative data to better assess the role of GORE SEAMGUARD® Bioabsorbable Staple Line Reinforcement.

METHODS

• IRB - approved prospective clinical database.
• Ninety-two consecutive LVSG procedures performed between January 1, 2006 and September 1, 2007.
• Group 1: LVSG performed without use of staple line buttressing material.
• Group 2: LVSG performed utilizing GORE SEAMGUARD® Bioabsorbable Staple Line Reinforcement for staple line buttressing.
• Demographic, peri-operative and post-operative data.
• Comparative evaluation using chi-square, Fisher exact test and student t-testing.

RESULTS

Demographic Data

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients (#)</td>
<td>46</td>
<td>46</td>
<td>ns</td>
</tr>
<tr>
<td>Age (yrs)</td>
<td>49</td>
<td>47</td>
<td>ns</td>
</tr>
<tr>
<td>BMI</td>
<td>45</td>
<td>44</td>
<td>ns</td>
</tr>
<tr>
<td>Sex (M/F)</td>
<td>8/38</td>
<td>8/38</td>
<td>ns</td>
</tr>
<tr>
<td>OR time (min)</td>
<td>86</td>
<td>87</td>
<td>ns</td>
</tr>
<tr>
<td>Surgical usage</td>
<td>10</td>
<td>8</td>
<td>ns</td>
</tr>
<tr>
<td>Staple line oversewing</td>
<td>6</td>
<td>0</td>
<td>p &lt;.05</td>
</tr>
</tbody>
</table>

Post-Operative Data

<table>
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<tr>
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<th>Group 1</th>
<th>Group 2</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staple line leaks</td>
<td>0</td>
<td>0</td>
<td>ns</td>
</tr>
<tr>
<td>Transfusions (# pts)</td>
<td>2</td>
<td>0</td>
<td>ns</td>
</tr>
<tr>
<td>ICU admissions (bleeding)</td>
<td>2</td>
<td>0</td>
<td>ns</td>
</tr>
<tr>
<td>Re-operations</td>
<td>0</td>
<td>0</td>
<td>ns</td>
</tr>
<tr>
<td>Readmissions</td>
<td>1</td>
<td>0</td>
<td>ns</td>
</tr>
</tbody>
</table>

CONCLUSION

• Avoiding staple line complications is central to performing the LVSG.
• The use of GORE SEAMGUARD® Bioabsorbable Staple Line Reinforcement allows us to confidently utilize a smaller bougie (32 Fr) to size the gastric tube.
• Our study suggests that GORE SEAMGUARD® Bioabsorbable Staple Line Reinforcement is effective in decreasing bleeding complications related to the long staple line associated with the LVSG.
• The efficacy of GORE SEAMGUARD® Bioabsorbable Staple Line Reinforcement in decreasing the number of staple line leaks requires larger sample sizes to determine its importance in this capacity.

LVSG SURGICAL TECHNIQUE

1. Supine position with foot board
2. Umbilical access when feasible. Bladeless ports (4 x 12 mm and 1 x 5 mm) and Epigastric Natheson Liver Retractor
3. Distal greater curve mobilization to point 4-6 cm from pylorus
4. 45 degree / 10 mm laparoscope
5. 42 cm instrumentation/10 mm ligasure/42 cm clip applier
6. Proximal greater curve mobilization until left curve is fully visible
7. Division of gastropancreatic adhesions
8. 32 Fr bougie utilized to size gastric sleeve
9. Gastric transaction utilizing ECHELON 60 CM stapler with and without GORE SEAMGUARD® Bioabsorbable Staple Line Reinforcement
10. Specimen extraction via umbilical port site 19 Fr Jackson Pratt Drain

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