Impedance Planimetry (Endoflip®) Reveals Ideal Distensibility Ranges for Optimal Outcomes after Nissen and Toupet Fundoplication

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INTRODUCTION: Previous research has shown that impedance planimetry-based functional lumen imaging probe (FLIP) measurements are associated with patient-reported outcomes after laparoscopic antireflux surgery. We hypothesize that Nissen (NF) and Toupet fundoplications (TF) have different ideal distensibility ranges.

METHODS: A retrospective review of a prospectively maintained quality database was performed. Patients who had FLIP measurements during fundoplications between 2013 and 2020 were included. Reflux Symptom Index (RSI), Gastroesophageal Reflux Disease-Health Related Quality of Life Questionnaire (GERD-HRQL), and dysphagia score were collected for up to 2 years postoperatively. The Wilcoxon rank-sum was used to compare between FLIP measurements and outcomes.

RESULTS: One-hundred sixty-three patients (93 TF, 70 NF) were analyzed. Distensibility ranges were categorized as tight, ideal, or loose. The ideal ranges of TF patients with the 30 mL and 40 mL balloon fills were 2.6-4.4 mm²/mmHg and 2.6-3.5 mm²/mmHg, respectively. These ranges were associated with less dysphagia at 1 year compared to the tight group (Table 1, p=0.029). For NF patients, the 30 mL and 40 mL ideal thresholds were at least 2.0 mm²/mmHg and 2.5 mm²/mmHg, respectively. Patients above this threshold had a better quality of life compared to the tight group, reporting better RSI scores at 1 year (p=0.046), and better GERD-HRQL score (p=0.01), less gas bloat (p=0.04), and lower dysphagia scores (p=0.04) at 2 years.

CONCLUSION: Impedance planimetry revealed different ideal distensibility ranges after TF and NF that are associated with improved patient-reported outcomes, suggesting that intraoperative FLIP has the potential to tailor fundoplication.

Table. Continued

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tight</th>
<th>Ideal</th>
<th>Loose</th>
<th>p</th>
<th>Value</th>
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<tbody>
<tr>
<td>Nissen - 2 yr</td>
<td>N=12</td>
<td>N=27</td>
<td></td>
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<tr>
<td>GERD-HRQL</td>
<td>8.3 ± 8.0</td>
<td>3.6 ± 4.9</td>
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<td>Gas bloat</td>
<td>2.4 ± 1.3</td>
<td>1.4 ± 1.3</td>
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<td>Dysphagia score</td>
<td>1.3 ± 0.7</td>
<td>1.0 ± 0.2</td>
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<td>0.043</td>
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</table>

Implementation of a Discharge Continuity Patient Initiative to Reduce Emergency Department Visits after Bariatric Surgery

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INTRODUCTION: Postoperative emergency department (ED) visits after bariatric surgery are common and potentially preventable. Outpatient care coordination phone calls have been shown to improve outcomes in several surgical specialties, but this is not well described among bariatric patients. This study evaluated the impact of a structured outpatient continuity phone call after bariatric surgery on 30-day ED visits.

METHODS: A standardized 10-question template for common postoperative issues was administered via phone call within 1 week of bariatric surgery at a single academic center starting May 2020. A retrospective chart review was performed for operative characteristics, 30-day ED visits, and underlying visit reasons before and after initiation of the continuity phone call (before call: 1/2019-4/2020; after call: 5/2020-1/2021). Data were analyzed using descriptive statistics and a 2-sample t-test.

RESULTS: A total of 461 patients were identified (n=275 before call, n=186 after call). Operative case volumes were 70% sleeve gastrectomy and 30% gastric bypass. Starting May 2020, 67% of patients successfully received the continuity phone call. Overall, 27 (5.9%) ED visits occurred, 20 before call and 7 after call timeframes. The top 4 reasons for ED visits included diet intolerance, abdominal pain, constipation, and wound problems. Average monthly ED visits significantly decreased from 7.3% before call to 2.6% after call timeframes (p=0.04) (Figure).

CONCLUSION: Standardized postoperative continuity phone calls are a promising adjunct in bariatric surgery care coordination and may help reduce ED visits. Next steps include continued preoperative education improvements, optimization of discharge medications, and larger scale data collection efforts.