Gastric Plication

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Disclosure

- Covidien - Proctor/Research Grant
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- Virtual Port – Advisory Board
- Gore - Education Grant
- Teleflex - Consultant
Weight Loss
Surgery vs Non-surgery: SOS Study

With long-term follow-up out to 15 years, the Swedish Obesity Study confirmed sustained weight loss (CLICK) in gastric bypass patients compared to the minimal effects of medical therapy.
### Table 1
Outcomes of sleeve gastrectomy

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>No. of studies* (no. of patients)</td>
<td>13 (821)</td>
<td>24 (1749)</td>
<td>36 (2570)</td>
</tr>
<tr>
<td>Preoperative BMI (kg/m²)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>49.1–69.0</td>
<td>37.2–54.5</td>
<td>37.2–49.0</td>
</tr>
<tr>
<td>Mean</td>
<td>60.0</td>
<td>46.6</td>
<td>51.2</td>
</tr>
<tr>
<td>Postoperative BMI (kg/m²)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>36.4–53.0</td>
<td>26.0–39.8</td>
<td>26.0–53.0</td>
</tr>
<tr>
<td>Mean</td>
<td>44.9</td>
<td>32.2</td>
<td>37.1</td>
</tr>
<tr>
<td>Follow-up (mo)</td>
<td>4–90</td>
<td>2–36</td>
<td>3–90</td>
</tr>
<tr>
<td>Excess weight loss (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>33.0–61.4</td>
<td>36.0–85.0</td>
<td>33.0–85.0</td>
</tr>
<tr>
<td>Mean</td>
<td>40.6</td>
<td>60.7</td>
<td>55.4</td>
</tr>
<tr>
<td>Complication rate (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0–23.8</td>
<td>0–21.7</td>
<td>0–23.8</td>
</tr>
<tr>
<td>Mean</td>
<td>9.4</td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td>Studies with &gt;100 patients (%)</td>
<td>0/18 (1.2)</td>
<td>45/1881 (2.7)%</td>
<td>53/2367 (2.3)%</td>
</tr>
<tr>
<td>Leaks†</td>
<td>0/880 (1.2)</td>
<td>45/1881 (2.4)</td>
<td>53/2367 (2.3)%</td>
</tr>
<tr>
<td>Bleeding†</td>
<td>11/880 (1.6)</td>
<td>77/1881 (4.1)%</td>
<td>28/2367 (1.2)%</td>
</tr>
<tr>
<td>Strictures†</td>
<td>9/880 (0.9)</td>
<td>91/1881 (4.9)%</td>
<td>15/2367 (0.6)%</td>
</tr>
<tr>
<td>Mortality‡</td>
<td>2/82 (0.2%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BMI = body mass index.
* One study included clearly defined patients in both groups.
† Included studies with detailed complication data only.
‡ P < .05 compared with high-risk group.
§ P not significant compared with high-risk group.
¶ Thirty-day postoperative mortality.

Adapted, with permission, from Berthauer et al. [2].

Systematic review of sleeve gastrectomy as staging and primary bariatric procedure.
Weiner Shows a Weight Regain at 5 Years Post VSG

Obes Surg. 2007 Oct;17(10):1297-305
Sleeve Gastrectomy – A Restrictive Procedure?

John Melissas, MD; Sofia Koukouraki, MD; John Askoxylakis, MD; Maria Stathaki, MD; Markos Daskalakis, MD; Kostas Perisinakis, PhD; Nikos Karkavitsas, MD

1Bariatric Unit and Department of Surgical Oncology. 2Departments of Nuclear Medicine and 3Medical Physics, Heraklion University Hospital, Faculty of Medicine, University of Crete, Greece

Conclusions: This study indicates that following SG, the stomach empties its contents rapidly into the small intestine and symptoms of vomiting after eating (characteristic of restrictive procedures) are either absent or very mild. Therefore, the term ‘restrictive’ is possibly ill-advised for this new bariatric operation. It
Effects of Sleeve Gastrectomy and Medical Treatment for Obesity on Glucagon-like Peptide 1 Levels and Glucose Homeostasis in Non-diabetic Subjects

Juan Patricio Valderrama - Verónica Iribarren - Lorena Rubín - Camilo Boza - Manuel Escalona - Vessica Libeona - Andrea Matamala - Alberto Maiz

Conclusions

Weight loss by medical or surgical treatment improved insulin sensitivity. However, only MED corrected the hyperinsulinemic postprandial state associated to obesity. Postprandial GLP-1 levels increased significantly after SG without duodenal exclusion, which may explain why insulin secretion did not decrease following this surgery.
Hormones: Band vs Sleeve
OUTCOME OF LAPAROSCOPIC TOTAL VERTICAL GASTRIC Plication IN MORBID OBESITY (100 CASES, 3 YEAR FOLLOW UP).
Dr Mohammad Talebpour Fellowship of Advanced Laparoscopy, Tehran Medical University, Tehran, Iran

Background: Total vertical gastric plication (TVGP) is a new method of gastric restriction in morbid obesity surgery. The long-term result of TVGP in excessive weight loss (EWL) and its morbidity and mortality is the aim of this study.
Method: All of cases with BMI over 40 kg/m² or over 35 kg/m² with comorbidity were included in this study. After resection of the greater curvature, bleeding was controlled by ligature or coagulation and 2-0 nylon continuous suture, 2 cm apart, from the upper part of stomach to 4-5 cm before pylorus. The greater curvature was inverted into the stomach with this suture and the effective remaining volume of the stomach was 50 cc.

Results: 100 cases during 3 years were performed by one surgeon in Laleh Hospital, Tehran, Iran. 90 cases were able to be followed. The mortality rate was zero. Reoperation was required in 3 cases due to leak of suture line, acute gastric perforation and permanent vomiting secondary to adhesions between cardiac and liver. Complications occurred in 4 cases and included liver hematoma, jaundice (drug hepatitis, 2 cases), and hypocalcemia. EWL was 25% to 86% (mean = 58%, 70 cases) after 6 months, 62% (55 cases) after 1 year, 63% (26 cases) after 2 years and 60% (10 cases) after 3 years.
Conclusion: TVGP is a safe method with 2% re-operation rate due to technique and about 1% related morbidity. EWL in this technique is the same as others.

PII: S1550-7289(07)00294-8

Laparoscopic gastric plication for treatment of severe obesity
Stacy A. Brethauer, M.D.,*, Jason L. Harris, Ph.D.,*, Matthew Kroh, M.D.,*
Philip R. Schauer, M.D.,*
*Rainier and Metabolic Institute, Cleveland Clinic, Cleveland, Ohio
Received May 6, 2010, accepted September 23, 2010
Plication Hernia

Courtesy of George Hopkins
Poiseuille's Law

In the case of smooth flow (\textit{Inman flow}), the volume flow rate is given by the pressure difference divided by the \textit{viscous resistance}. This resistance depends linearly upon the \textit{viscosity} and the length, but the fourth power dependence upon the radius is dramatically different. Poiseuille's law is found to be in reasonable agreement with experiment for uniform liquids (called Newtonian fluids) in cases where there is no appreciable turbulence.

\begin{align*}
\text{Volume Flowrate} &= \dot{F} = \frac{P_1 - P_2}{R} = \frac{\pi \text{(Pressure difference)(radius)}^4}{8 \text{(viscosity)(length)}} \\
\text{Resistance to Flow} &= R = \frac{8\eta L}{\pi r^4}
\end{align*}