Surgical Options for Weight Regain after Gastric Bypass

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Disclosures

- Allergan: grant support
- Covidien: consulting agreement
Definition of a RYGB “Failure”

- Inadequate initial EWL: <50%
- Significant Weight Regain :> 20% of weight gain above nadir weight
Weight Regain after RYGB

- Estimated 10 - 30% of patients will regain weight at 5 and 10 years postoperatively

- Wide consensus that weight regain (20% of weight gain above nadir weight) warrants surgical anatomy evaluation:
  - EGD
  - Upper GI contrast study
Surgical Causes of Weight Regain after RYGB

- Large pouch at time of surgery
- Dilated gastric pouch
Surgical Causes of Weight Regain after RYGB

- Gastro-gastric fistula
- Dilated gastro-jejunostomy
Other Causes of Weight Regain after RYGB

- hyperphagia
- polyphagia
- sweet eating
- Lack of exercise
- Steroids
- Pregnancy
Multidisciplinary consultation

- radiologist
- gastroenterologist
- nutritionist
- psychologist
MAIN CAUSES OF RYGB FAILURES

TECHNICAL PROBLEMS

1- gastric pouch dilatation
2- gastrojejunostomy dilatation
3- presence of gastro-gastric fistula

Treatment: LAPAROSCOPIC or ENDOSCOPIC
1) Gastric pouch dilatation:
   - Laparoscopic resection or plication
   - Endoscopic plication

2) Gastrojejunostomy dilatation:
   - Endoscopic plication or sclerosing agent

3) Presence of gastro-gastric fistula
   - Laparoscopic resection
   - Endoscopic closure
G-G Fistula Laparoscopic Technique

1- lateral to medial approach
2- isolation greater curve of gastric remnant (body to fundus)
3- section of remnant from gastric pouch (fundectomy)
4- try to salvage the gastrojejunostomy
Dealing with Polyphagia

polyphagia = grazing, eating too frequent meals

conversion to malabsorptive procedure: DISTAL RYGB

Kellum JM, et al. SOARD 2011;7:189-93
Rawlins ML et al. SOARD 2011;7:45-9
Confusion?

a Proximal bypass  
b Distal bypass

C Proximal RYGB

D Distal RYGB

Roux-en-Y limb = 150 cm

Roux-en-Y limb = 300-350 cm
Terminology

Revision to distal RYGB

Revision to distal RYGB

Between April 2005 and November 2009, 7 patients benefited from laparoscopic conversion of RYGB to DRYGB for weight regain mainly due to polyphagia.

<table>
<thead>
<tr>
<th></th>
<th>Weight (Kg)</th>
<th>BMI (Kg/m2)</th>
<th>% EWL</th>
</tr>
</thead>
<tbody>
<tr>
<td>RYGB</td>
<td>120.5</td>
<td>43.2</td>
<td></td>
</tr>
<tr>
<td>Extreme after RYGB</td>
<td>91.1</td>
<td>34.4</td>
<td>49.1</td>
</tr>
<tr>
<td>Conversion RYGB to DRYGB</td>
<td>100.7</td>
<td>36.1</td>
<td>33.7</td>
</tr>
<tr>
<td>Follow-up</td>
<td>82.5</td>
<td>29.5</td>
<td>57.6</td>
</tr>
</tbody>
</table>

Comparison of weight, BMI, and % excess weight loss (%EWL) at RYGB, at extreme values before the conversion to DRYGB, at the conversion, and at follow-up (mean values).

Revision to Distal RYGB


Revision of Roux-en-Y gastric bypass to distal bypass for failed weight loss.

Rawlings ML, Teef D 2nd, Hedgcomb K, Maguire JP.
Department of Surgery, Wright Patterson Medical Center, Wright Patterson Air Force Base, Ohio, USA. rawlinml@yahoo.com

Abstract

BACKGROUND: Weight loss failure after proximal Roux-en-Y gastric bypass (RYGB) occurs in ≤ 35\% of cases. No consensus has been reached on the best revisional operation for these patients. Our objective was to review our data on the conversion to distal gastric bypass at a university-affiliated private practice in the United States.

METHODS: A retrospective review was completed of 29 patients from 2002 to 2009 who had undergone conversion of RYGB to distal gastric bypass because of failure to lose weight, defined as a body mass index >35 kg/m^2 or a percentage of excess weight loss of <50\%. The RYGB of each patient was converted to a 100-cm distal common limb with a total in-continuity length of 250 cm. Attention was primarily paid to the percentage of excess weight loss at each yearly follow-up visit and any metabolic complications.

RESULTS: The average excess weight loss and body mass index were significantly improved from 26.6\% and 48.1 kg/m^2 before revision to 60.9\% and 35.3 kg/m^2 at 1 year and 68.8\% and 31.5 kg/m^2 at 5 years. Of the 29 patients, 6 developed protein calorie malnutrition requiring parenteral nutrition, and 1 required reversal. Diabetes had completely resolved with the additional weight loss.

CONCLUSION: Revision of RYGB to distal gastric bypass can allow patients to achieve sustainable weight loss similar to what they were seeking from their primary surgery. From the results of the present series, the operation was safe, with no perioperative mortality or anastomotic complications. The development of protein calorie malnutrition and vitamin deficiencies is real, and patients require close monitoring and follow-up.

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Proximal vs. Distal RYGB

Original Article

Long-term follow-up of proximal versus distal laparoscopic gastric bypass for morbid obesity


Article first published online: 9 OCT 2008
DOI: 10.1002/bjs.6297

British Journal of Surgery

BJS

a Proximal bypass

b Distal bypass
Characteristics of the two groups

Table 1. Characteristics of patients in the two groups

<table>
<thead>
<tr>
<th></th>
<th>Proximal bypass (n = 25)</th>
<th>Distal bypass (n = 25)</th>
<th>P†</th>
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</thead>
<tbody>
<tr>
<td>Sex ratio (M : F)</td>
<td>5 : 20</td>
<td>5 : 20</td>
<td>1·000‡</td>
</tr>
<tr>
<td>Age (years)</td>
<td>37·9(7·9) (22–54)</td>
<td>38·8(7·5) (23–52)</td>
<td>0·579‡</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>45·9(4·4) (39–59)</td>
<td>45·8(4·4) (39–59)</td>
<td>0·808‡</td>
</tr>
<tr>
<td>Bodyweight (kg)</td>
<td>128·0(14·7) (103–168)</td>
<td>124·6(15·0) (97–150)</td>
<td>0·479‡</td>
</tr>
<tr>
<td>Median follow-up (months)</td>
<td>48</td>
<td>48</td>
<td>0·714‡</td>
</tr>
<tr>
<td>No. with complete follow-up at 4 years</td>
<td>13</td>
<td>20</td>
<td>0·037‡</td>
</tr>
</tbody>
</table>

* Values are mean(s.d.) (range). BMI, body mass index.
† Mann–Whitney U test;
‡ χ² test.
Results
Laparoscopic conversion of failed gastric bypass to duodenal switch: technical considerations and preliminary outcomes

This study was presented at the 24th Annual Meeting of the American Society for Bariatric Surgery, June 11–16, 2007, San Diego, California.


Abstract

BACKGROUND: Weight loss failure after Roux-en-Y gastric bypass (RYGB) is a challenging problem facing bariatric surgeons today. Conversion from RYGB to biliopancreatic diversion with duodenal switch (BPD-DS) might provide the most durable weight loss of all revision procedures currently available. Revision to BPD-DS can be done laparoscopically in 1 or 2 stages and involves 4 anastomoses: gastrogastrostomy, duodenoleostomy, ileoleostomy, and jejunojejunostomy (to reconnect the old Roux limb). This study reports on our early outcomes after laparoscopic conversion from RYGB to BPD-DS.

METHODS: The data from all patients undergoing conversion from failed RYGB to BPD-DS were retrospectively reviewed. The data analyzed included age, body mass index, excess weight loss, method of gastrogastrostomy, and morbidity/mortality.

RESULTS: Twelve patients were identified for analysis. The mean age and body mass index before conversion was 41 years and 41 kg/m², respectively. Of these 12 patients, 4 (33%) had undergone revision surgery (lengthening of the Roux limb, resizing the gastric pouch, adjustable bar on pouch, or distal gastric bypass) before conversion; 8 (65%) had obesity-related co-morbidities; 7 (58%) underwent conversion to BPD-DS in 1 stage. Most gastrogastrostomies were performed using the 25-mm circular stapler. No patient died and no leaks developed. One patient required laparotomy, and 4 developed stricture at the gastrogastrostomy. The patients lost a dramatic amount of weight after conversion to BPD-DS, with a mean body mass index and excess weight loss of 31 kg/m² and 63%, respectively, at 11 months postoperatively. All co-morbidities resolved completely with the weight loss.

CONCLUSION: Our preliminary results indicate that laparoscopic conversion to BPD-DS from failed RYGB is highly effective with an acceptable morbidity. Using a linear stapler to construct the gastrogastrostomy might reduce the stricture rate.
RYGB to DS

- Taking down Roux Limb
- Gastro-Gastrostomy
- Sleeve Gastrectomy
- Duodenoileostomy
- Ileoileostomy
- Jejunojejunostomy
Dealing with Hyperphagia

hyperphagia = volume eating, eating too large meals

Increased restriction by placement of band (adjustable or non)

Irani K et al. SOARD 2011;7:219-24
Bessler M et al. SOARD 2010;6:31-5
Chin PL et al. SOARD 2009;5:38-42
## Salvage banding for failed Roux-en-Y gastric bypass

Guy H.E.J. Vijgen, M.D., Ruben Schouten, M.D., Ph.D., Nicole D. Bouvy, M.D., Ph.D., Jan Willem M. Greve, M.D., Ph.D.

- Department of General Surgery, Maastricht University Medical Centre, Maastricht, The Netherlands
- Bariatric Centre Lievensberg Hospital, Bergen op Zoom, The Netherlands
- Department of General Surgery, Atrium Medical Centre, Heerlen, The Netherlands

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Patients (n)</th>
<th>FU</th>
<th>BMI Initial</th>
<th>%EBMIL Revision</th>
<th>%EBMIL FU</th>
<th>Pouch dilation?</th>
<th>Band</th>
<th>Complications</th>
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<tbody>
<tr>
<td>Chin</td>
<td>2009</td>
<td>8</td>
<td>12</td>
<td>62.6</td>
<td>48.4</td>
<td>41.6</td>
<td>No</td>
<td>AGB²</td>
<td></td>
</tr>
<tr>
<td>Heath</td>
<td>2009</td>
<td>1</td>
<td>42</td>
<td>42.1</td>
<td>31.0</td>
<td>26.0</td>
<td>Yes</td>
<td>AGB³</td>
<td>—</td>
</tr>
<tr>
<td>Dapri</td>
<td>2009</td>
<td>6</td>
<td>14</td>
<td>36.3</td>
<td>29.5</td>
<td>26.4</td>
<td>No</td>
<td>NAGB⁴</td>
<td>—</td>
</tr>
<tr>
<td>Bessler</td>
<td>2010</td>
<td>22</td>
<td>12 †</td>
<td>52.6</td>
<td>44.8</td>
<td>—</td>
<td>ND</td>
<td>AGB⁵</td>
<td></td>
</tr>
<tr>
<td>Irani</td>
<td>2011</td>
<td>42</td>
<td>26</td>
<td>50.4</td>
<td>43.3</td>
<td>33.8</td>
<td>ND</td>
<td>AGB²</td>
<td>Enterotomy (n = 1)</td>
</tr>
<tr>
<td>Meesters</td>
<td>2012</td>
<td>12</td>
<td>28</td>
<td>47.8</td>
<td>39.6</td>
<td>34.2</td>
<td>ND</td>
<td>AGB²</td>
<td>Pneumothorax (n = 1), Intra-abdominal hematoma (n = 1)</td>
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</table>
Excess body mass index loss (%EBMIL) after revision. Values shown for follow-up (in months) after revisional surgery (t = 0).
Conversion of RYGB into Distal RYGB