Restrictive Procedures:
“Band and Sleeve”

Jin S. Yoo M.D.
Assistant Professor of Surgery

Jin.Yoo@duke.edu
Disclosures

- Speaker for Cook Medical, Covidien, W.L. Gore
- Consultant for Musculoskeletal Transplant Foundation
Restrictive Procedures
How does bariatric surgery work?

- From a reductionist point-of-view….
  - RESTRICTION
    - restricts how much and how fast one eats
  - MALABSORPTION
    - portion of small intestines are “bypassed” so that not all the calories are absorbed

- In reality, the real answer is a bit more complex.
  - metabolic and hormonal pathways affected
Defining “healthy restriction”

Being able to eat small amount of food without getting hungry.

Getting full after eating small amount of food.
Surgery is ONLY a tool!

“Band”

“Sleeve”

“Bypass”
Surgery is ONLY a tool!

“Duodenal Switch”
Surgery is ONLY a tool!

This is what we want our surgeries to do.

And this is how we act when they don’t do what we ask.
Components of **HEALTHY Dietary LIFESTYLE**

**WHAT YOU EAT**

- CALORIC RESTRICTION
- HIGH PROTEIN
- LOW FAT
- LOW STARCH
- VITAMINS & MINERALS
- BAKE / GRILL
- VEGGIES

**HOW YOU EAT**

- EAT FREQUENTLY (5 – 6 times)
- EVENLY DISTRIBUTED (every 3 hours)
- AVOID HUNGER & FULLNESS
- EAT SLOW & SMALL BITES
- EAT SMALL PORTIONS

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**Duke Surgery**
“The Band”
Adjustable Gastric Banding

• Been available in the U.S. for > 15 years

• After its initial popularity and reaching its peak in 2012, it has rapidly declined due to:
  - requires significantly more follow-ups (including band adjustments) = ↑ out-of-pocket expenses and missing work
  - 30-40% patients will lose < 50 lbs
  - almost 100% of patients will need some type of surgical procedure related to their band over the course of their lifetime
Who are good candidates for adjustable gastric banding?

• Low BMI patients (35-40) *

• High risk patients who needs the safest procedure possible

• Patients who refuse to have the other procedures and accept a lower success rate

* FDA-approved (but not insurance) for BMI 30-35 with uncontrolled DM.
Who are NOT good candidates for adjustable gastric banding?

• High BMI patients who are not “high risk” patients

• Patients on immunosuppressants and immunomodulators

• Patients with chronic inflammatory conditions (i.e. RA, IBD)

• Patients who are prone to infections or have chronic non-healing wounds

• Patients who cannot meet the arduous follow-up / band adjustment requirements

• Patients are scared of needles and/or being stuck by a needle
Adjustable Gastric Banding CONT

Adjustable Gastric Band

Tube to carry fluid

Gastric band

Subcutaneous injection port

Duke Surgery
Subcutaneous Port / Huber needle

20 G needle
Available in 51 mm and 89 mm
The Green Zone

**ADD FLUID**

**NOT ENOUGH**
- Not hungry between meals
- Eating large portions
- Not losing weight

**RIGHT AMOUNT**
- Not hungry between meals
- Good weight loss
- Portion control
- Patient satisfaction

**REMOVE FLUID**
- Poor food choices
- Regurgitation
- Discomfort while eating
- Poor weight loss
- Night cough

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Duke Surgery
Banding Adjustment Under Fluoroscopy
Band too tight (before and after band deflation)
<table>
<thead>
<tr>
<th>Design Features</th>
<th>LAP-BAND® 9.75</th>
<th>LAP-BAND® 10.0</th>
<th>LAP-BAND® VG</th>
<th>LAP-BAND AP® Standard</th>
<th>LAP-BAND AP® Large</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Belt and Buckle</strong></td>
<td>Not Openable</td>
<td>Not Openable</td>
<td>Not Openable</td>
<td>Openable Locking Mechanism</td>
<td>Openable Locking Mechanism</td>
</tr>
<tr>
<td><strong>Shell</strong></td>
<td>Smooth Continuous</td>
<td>Smooth Continuous</td>
<td>Smooth, Pre-grooved (Omniform®)</td>
<td>Smooth, Pre-grooved (Omniform®)</td>
<td>Smooth, Pre-grooved (Omniform®)</td>
</tr>
<tr>
<td></td>
<td>325° inflation area and no cushion effect under belt and buckle</td>
<td>325° inflation area and no cushion effect under belt and buckle</td>
<td>325° inflation area and no cushion effect under belt and buckle</td>
<td>360° inflation area with cushion effect under belt and buckle</td>
<td>360° inflation area with cushion effect under belt and buckle</td>
</tr>
<tr>
<td><strong>Fill Volume</strong></td>
<td>0-4 mL</td>
<td>0-4 mL</td>
<td>0-10 mL</td>
<td>0-10 mL</td>
<td>0-14 mL</td>
</tr>
<tr>
<td><strong>Overall LAP-BAND®</strong></td>
<td>Assembled injection molded components</td>
<td>Assembled injection molded components</td>
<td>Assembled injection molded components</td>
<td>One-piece injection molded</td>
<td>One-piece injection molded</td>
</tr>
</tbody>
</table>
Follow-up

• Band is not “weaponized” at time of placement

• First adjustment is 3-6 weeks after surgery

• Subsequent adjustments is every 1-2 month the first year (and less frequent as they reach a plateau)

• AT MINIMUM, they need ADJUSTMENT UNDER FLUOROSCOPY on an annual basis
Sleeve
Sleeve gastrectomy

- Been around for > 10 years (as a staged procedure or part of another procedure)
- Been available as primary procedure for almost 10 yrs in the U.S. (2 years in NC)
- Popular among patients (and surgeons) because it fits between the band and the bypass procedure
Like the adjustable gastric banding...

- Operative time < 60 min, but...
  - requires overnight hospital stay *
  - “home” recovery time similar to bypass

- Perception of “less invasive”, but...
  - portion of stomach is stapled and removed

- Can be converted to another procedure – sleeve gastrectomy, gastric bypass or duodenal switch

- But no adjustments needed
Like the gastric bypass...

- Reliable weight loss, but...
  - 10-20% less weight loss

- Similar post-operative complication profile, but...
  - no risk of malabsorption
  - no increased risk of marginal ulcers
  - no risk of internal hernia
  - safer, due to shorter operative time
How does the sleeve gastrectomy?

• Limits portion size and restricts passage of food (decreased luminal diameter of stomach)

• Early satiety
  - rapid emptying of food from stomach to intestines → triggers hormonal effects
  - decreased ghrelin level (hunger hormone)
Who are good candidates for the sleeve gastrectomy?

- Low BMI patients – *save more extreme surgeries for higher BMIs?*
- High BMI patients – *perform safer operations on larger patients to bridge them to RYGB or BPD/DS?*

- Patients who want a bypass, but are NSAID-dependent and/or smokers – *risk of marginal ulcer*

- Multiple abdominal surgeries – *too many adhesions*
- Pre-existing malabsorption and/or diarrhea condition (includes previous bowel resections)

- Inflammatory bowel disease – *not good bypass candidates, future bowel resection(s); not good band candidates, immunosuppression*
Who are NOT good candidates for the sleeve gastrectomy?

- Patients with significant GERD.
- Patients who have “complex” diabetes (more than just weight-related)
Sleeve Gastrectomy
Normal anatomy after SG

(a) Sleeve gastrectomy

(b) Radiographic image

(c) CT scan

Normal UGI series (POD 1)
Leak after SG

(a)

(b)
