Complications of Bariatric Surgery

Joe Suyama, MD
Associate Professor
Department of Emergency Medicine
University of Pittsburgh School of Medicine

Objectives

- The Obesity Challenge
- Types of Bariatric Surgery
- Postoperative complications from Bariatric Surgery
- Nutritional and electrolyte issues

Obesity Statistics

- Over 8 million people in the United States are considered morbidly obese (BMI of ≥ 40)

<table>
<thead>
<tr>
<th>Overweight BMI</th>
<th>Underweight BMI</th>
<th>Normal BMI</th>
<th>Overweight BMI + Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>x&lt;18.5</td>
<td>x&lt;18.5</td>
<td>≥18.5</td>
<td>x≥25</td>
</tr>
<tr>
<td>x≥18.5</td>
<td>x&lt;18.5</td>
<td>≥18.5</td>
<td>x≥25</td>
</tr>
<tr>
<td>x≥25</td>
<td>x&lt;18.5</td>
<td>≥18.5</td>
<td>x≥25</td>
</tr>
</tbody>
</table>

- Patients with a BMI ≥ 50 increased over 5 fold over the last 30 years
- Ideal candidates or more prone to complication?

Roux-en-Y Gastric Bypass

- 15 to 25 ml gastric pouch with 1 cm outlet
- Bypass distal stomach, duodenum, first segment of jejunum
- Bypass 75 - 150+ cm jejunum
- 65% - 70% EBW loss
- Decrease BMI 35%

LAP-BANDING

- No physiological changes or resections
- Band around upper stomach creates 15 ml pouch
- Port of adjustment attached to abdominal wall
- Inflate/deflate 6 times a year
- 50% EBW loss

Effect on Health

- > 50% overweight => mortality doubled
- > 50% overweight + Diabetes => mortality x5-8

- Greater surgical risks
- Increased post operative complications
- Greatest need for intervention

www.obesitycenter.org/images/bg_roux2.gif

www.weighlite.com/images/content/gastric_diag.jpg
Major Acute Postop Complications

- Postoperative Bleeding
- Anastomosis leaks or staple line leaks
- PE or DVT
- Bowel Obstruction
- Marginal ulceration
- Dumping syndrome
- Electrolyte imbalances (Hypo Mag, Hypo K)
- Others – Nutritional, Constipation, Dehydration

Anastomosis Leaks

- Typically 7 days after surgery
- Most common at gastrojejunostomy, enteroenterostomy, Roux limb stump, or any staple line
- Can lead to peritonitis, sepsis, possible death
- Presentation
  - Tachycardia, tachypnea
  - Fever
  - Abdominal pain/back pain
  - Pelvic pressure or rebound tenderness

Anastomosis Leaks

- Gastrograffin upper GI series are the gold standard for diagnosis
- CT can miss this diagnosis
- Subclinical or contained leaks can be medically managed (after Bariatrics consult)
  - Bowel rest
  - Parenteral nutrition (IV fluids – current challenge)
- All other leaks
  - Laparoscopic evaluation and repair of site
Marginal Ulcers

~15% within 2-4 months after surgery

- Etiology
  - Overabundant acid leads to excessive acid passing through stoma
  - Pouch tension
  - Staple line breakdown
  - NSAID use

- Clinical presentation
  - Vomiting
  - Epigastric pain

Marginal Ulcers

- Medical Treatment
  - PPI, carafate
  - H. Pylori treatment
  - No NSAIDS, EtOH, or smoking

- If no response to medical treatment
  - Endoscopy
  - Back to surgery for pouch revision or staple line repair

Cholelithiasis

- Up to 36% of patients within 6 months post-op

- Bile stasis leads to increased sludge and gallstones

- Prophylactic cholecystectomy prior to surgery if evidence of existing sludge or stones

- Prevent post-operative disease with concurrent bariatric surgery and cholecystectomy

- Prophylactic use of urosidol
  - Expensive and unpalatable

Other Diseases post Bariatric Surgery

- Dumping Syndrome
  - Electrolyte Issues

Dumping Syndrome

- More than 15% patients

- Lightheadedness or even syncope

- Flushing

- Abdominal cramping and diarrhea

- Nausea and vomiting
Dumping Syndrome
- Associated with large volume simple sugar ingestion
- Sugar in small intestine causes osmotic overload
  - Fluid shifts from intravascular space
  - Decreased blood volume leads to systemic changes
- Patient education
  - Eat slowly
  - Avoid drinking before and during meals
  - Avoid large amounts of sugar ingestion

Electrolyte Concerns
- Hypo Mag
- Ventricular Arrhythmia
- Torsades de points
- SVT
- Enhanced sensitivity to digoxin
- Hypo K

Cardiac Arrest Case
- 58 yo s/p gastric bypass, poorly compliant with oral vitamin replacement
- Prolonged hospital stay after her operation related to complication related to her non-compliance
  - Aspiration
  - Wound issues
- Presented to the ED 2 weeks after discharge with weakness
- Admitted for electrolyte replacement after being found to have low K 3.2, low Mag 1.8, low phos 1.1
  - Had a run of non-sustained V-tach in the ED
- Pads were placed and the patient received IV K phos, oral Mag (only one IV due to difficulty with IV access), and 4mg Zofran ODT

Summary
- Bariatric surgery patients are high risk for complications
- Understanding acute and sub-acute time frames for conditions will help guide clinical care
- Review ASMBS guide, and understand your local Bariatric support
- Questions?

Now enjoy your lunch...