Acute Abdominal Pain following Bariatric Surgery
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Disclosure

• I have nothing to disclose

Objectives

• Pathophysiology and operative changes of GI system.
• Laboratory and diagnostic tests indicated with acute Abdominal pain after bariatric surgery.
• Risk vs. benefit of radiologic testing.
• Utilize EBP to develop educational plan for bariatric pt. with complications.
Obesity in the United States

- More than 34.9% of American are Obese
  - (BMI >30)
- Obesity related Comorbidities
  - Heart Disease - Stroke
  - Diabetes Type 2 - Cancer
- Medical Costs
  - $147 (2008)
  - $1,429/year higher than non obese person

Bariatric Surgery

- Surgery on stomach or intestines
  - extreme obesity to lose weight
- Clinically severe obesity
  - BMI > 40
  - BMI > 35 with a serious health
    - type 2 diabetes, heart disease, or severe sleep apnea
Brief History of Bariatric Surgery

- **1952** - First recorded operation to cure obesity was performed by Viktor Henrikson as a small bowel resection.
- Shortly followed by jejunoileal bypasses that led to loss of fluid, electrolytes, and led to liver failure. (On left)
- **Mid 1950’s** - Jejunoileal Bypass came next and remained popular through the 1970’s.

Brief History of Bariatric Surgery (Cont’d)

- **1960’s** - Gastric Bypass was first developed.
- **1970’s** - Roux-en-Y GB was developed and has been modified several times since.

Brief History of Bariatric Surgery (Cont’d)

- **1970’s** - Biliopancreatic Diversion and Duodenal Switch were also introduced to address concerns over Blind Loop Syndrome.
- **1980’s** – Adjustable gastric banding procedures were popularized.
Brief History of Bariatric Surgery (Cont’d)

- **2000’s** – The first sleeve gastrectomy procedures were recorded.

![Image of sleeve gastrectomy](image.png)

(Deitel, 2012)

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Bariatric Surgery

- **Most Common**
  - Roux-en-Y Gastric Bypass
  - Sleeve Gastrectomy
  - Adjustable Gastric Band
- **Less Common**
  - Biliopancreatic Diversion with Duodenal Switch (BPD/DS) Gastric Bypass
Complications Adjustable Gastric Band

• Band slippage or erosion into the stomach
• The passageway created by the band can be blocked by food
• Access port leakage or infection
• Esophagitis or gastroesophageal reflux disease (GERD)
• Malnutrition
Band Slippage

• Most common band complication

• Leading cause of re-operation

• Can be acute or chronic

• Important to identify the difference between pouch dilation and band slippage
Band Slippage

- Band slippage
  - More acute
  - Obstructive symptoms and pain
  - As high as 25%

- Diagnosis
  - UGI fluoroscopy

Pouch Dilation

- Gradual dilation of pouch
  - Usually from maladaptive eating
  - Aggressive band adjustments
  - Symptoms of GERD
  - Decreased satiety and restriction

- Diagnosis
  - UGI fluoroscopy

Treatment

- Band Slippage and Pouch Dilation
  - Deflate band
  - Emergent referral to Bariatric Surgeon
  - Urgent operative intervention
  - Laparoscopy or Laparotomy
  - Avoid Gastric Necrosis
Band Erosion

- Incidence between 0.3% and 2.8%
- Most common emergent presentation
  - Intra-abdominal abscess
  - Untreated can lead to sepsis
- Diagnosis and Treatment
  - UGI or EGD
  - CT Scan and can be drained by CT guided approach
  - May need band removal

Roux-en-Y Gastric Bypass
Gastric Remnant Distention

- Can occur acutely or chronic
  - May present Early Post – OP period
- Presentation
  - Epigastric Pain
  - Nausea and Vomiting
  - Tachycardia
  - Leukocytosis
  - Elevated LFTs and pancreatic enzymes

Gastric Remnant Distention

- Diagnosis and Treatment
  - Acute
    - CT with oral contrast
    - Gastric secretions - percutaneous CT-guided decompression
    - Hematoma – Surgical Intervention
  - Chronic
    - CT with oral contrast
    - Medical Treatment – prokinetics – Ulcer disease
    - Endoscopy
    - CT guided gastroscopy

Stomal Stenosis

- Incidence – 6-20%
- Etiology
  - ? Tissue ischemia
  - Increased tension on anastomosis
- Presentation
  - Several weeks Post – OP
  - Nausea, Vomiting, Dysphagia, GERD
Stomal Stenosis

- Diagnosis
  - Endoscopy
  - Upper gastrointestinal series
- Treatment
  - Endoscopic Balloon Dilation
  - Surgical Intervention for persistent dilations

Marginal Ulcers

- Early Complications
  - Ischemia,
  - Pouch size (too large)
  - Previously undiagnosed Pylori

Marginal Ulcers

- Late Presentation
  - Smoking
  - NSAID Use
  - Gastrogastric fistula formation
  - Poor tissue perfusion due to tension or ischemia at the anastomosis
  - Presence of foreign material, such as staples or nonabsorbable suture
  - Excess acid exposure in the gastric pouch due to gastrogastric fistulas
Marginal Ulcers

- Presentation
  - Nausea, pain, or perforation.
  - Melena, hematochezia, hematemesis

- Diagnosis
  - Endoscopy

- Treatment
  - Acid Suppression
  - Treatment H. Pylori
  - May require surgical intervention

Marginal Ulcers

- Complication of RYGB
  - Occur near gastrojejunostomy
  - Acid injury jejunum or gastrogastric fistula
  - Statistics: 0.6-16% of patients
  - Within 30 days after surgery
  - Late Presentation
    - 17 months
    - lower incidence

Cholelithiasis

- Incidence
  - 38% patients with in 6 months
  - Rapid weight loss

- Presentation
  - Typical GB presentation

- Diagnosis
  - US GB
Cholelithiasis

- Preventative
  - Can be reduced with treatment Bile salts for 6 months
  - Cholecystectomy during Bariatric surgery
- Treatment
  - Cholecystectomy

Small Bowel Related Problems

- Ventral and incisional hernia
- Adhesions
- Internal Hernia
- Intussusception

Small Bowel Obstruction

- Incidence
  - Adhesive small bowel obstruction
    - Uncommon 0.2-1%
    - Common area jejunojejunostomy
    - Some can be managed laparoscopy
Hernia

– Internal Hernia – 1%-9%
  • Most common 2-3 after surgery
  • Can be associated with Pregnancy
– Types of Internal Hernia
– Mesenteric Hernia
– Petersen’s Hernia
– Mesocolic Hernia

Internal Hernia

• Presentation
  – Severe Abdominal Pain
    • Diffuse, episodic
    • May or may not be postprandial
    • May continue for months
    • Risk for incarceration
Internal Hernia

- Diagnosis and Treatment
  - Limb obstruction may be present
  - Signs of bowel obstruction may not be present until strangulation
  - CT scan
    - High frequency of false negative
    - Short limb segment hard to recognize obstruction

Internal Hernia

- Consult bariatric surgeon early
- May be repaired with laparoscopy or need laparotomy
- Elective Hernia repairs to avoid obstruction

Intussusception

- Incidence
  - Rare 0.1%
  - May occur months or years after surgery
  - May be transient and chronic
  - Presents:
    - Nausea – Vomiting
    - Abdominal pain – bowel obstruction-severe pain
- Diagnosis
  - CT scan
  - Surgery indicated for high level clinical suspension
Complications Gastric Sleeve

- Hemorrhage
  - Acute present early after surgery
  - May need serial CBC
  - Treat with transfusion
  - Consult Surgeon – May need Surgery

- Leak
  - May present acutely from recent procedure or chronic
  - Diagnosis UGI – Physical findings
  - Drainage – laparoscopy
  - antibiotics
  - stenting and/or repair
Complications Gastric Sleeve

• Abscess
  – Chronic
  – May be linked to leakage
  – Diagnosis
    • CT Scan or US
    • Drainage - antibiotics

Complications Gastric Sleeve

• Gastroesophageal Reflux
  – Chronic
  – Diagnosis
    • History
    • Endoscopy
    • Treatment - PPI

Case Study
Questions?

References
- UpToDate
- Medscape
  - Complications of Bariatric Surgery
- Complications associated with laparoscopic sleeve gastrectomy for morbid obesity: a surgeon’s guide
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THANK YOU