Abdominal Pain after Bariatric Surgery: What are the issues?

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Disclosures

• No Financial Disclosures or relationships
Goals & Objectives

• Bariatric Anatomy
• Lesson
• Unique Complications
• Management Pitfalls
Obesity is a growing problem.
Obesity Trends Among U.S. Adults
BRFSS, 1990

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends Among U.S. Adults
BRFSS, 2010

(*BMI ≥30, or ~30 lbs. overweight for 5’ 4” person)
Surgery?

Mean weight change during a 15-year study:

- **Control**
- **Banding**
- **Vertical Band**
- **Gastric Bypass**

**Graph:**
- Y-axis: Change in Weight (%)
- X-axis: Years (0 to 15)

- Control line remains flat.
- Banding shows initial weight loss followed by stabilization.
- Vertical Band shows initial weight loss followed by gradual increase.
- Gastric Bypass shows significant initial weight loss, followed by stabilized weight loss.
LOSE WEIGHT WITH THE LAP-BAND

SAFE, 1-HOUR FDA APPROVED

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come back to see us?

- 24,662 gastric bypasses
- 26,002 gastric band
- 7% 30-day readmission

• Source: RB et al, 2012. Data from...
Upper gastric pouch created and separated from the remainder of the stomach
Small intestine divided in the middle jejunum
Distal portion of small intestine is anastomosed to the upper gastric pouch.
Doux-en-Y Gastric Bypass

Distal portion of the stomach and proximal small intestine is anastomosed end-to-side further down the jejunum.

Roux limb

Pancreatic limb
Roux-en-Y Gastric bypass

- Restrictive/malabsorptive
- Open/laparoscopic
- True “gastric bypass”
- Widely available
Bariatric Procedures:

Restrictive + Malabsorptive

- Gastric Bypass
- BPD

Restrictive

- Sleevel Gastrectomy
- Lap Band
Bariatric Procedures:

**Big Surgery**
- Gastric Bypass
- BPD

**Small Surgery**
- Sleevel Gastrectomy
- Lap Band
DDx?

Biliary colic/cholecystitis

Mesenterial obstruction

Dumping syndrome

Internal hernia

Intestinal leak/sepsis

DVT/

Band slipping

Appendicitis
<table>
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<tr>
<th>Complications</th>
<th>Early (&lt;1 month)</th>
<th>Late (&gt;1 month)</th>
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- Sepsis
- Pain
- Obstruction
- Bleeding
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GI Leaks/Sepsis

- Early: 0-21 days
- Diagnosis: CT GI series
GI Leak...or Pulmonary Embolus???

PE is leading cause of death post bariatric surgery. 75% occur after discharge. Gastric bypass >> lap band.

Consider: CTA Chest + lower extremity/pelvis, when in doubt.

Saddle Embolus
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<td><strong>Cholecystectomy</strong></td>
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**Early** complications: Sepsis, Pain, Obstruction, Bleeding

**Late** complications: Dumping
Dumping syndrome

Sugary food leaves the stomach quickly

Intestine swells causing cramping and pain

Potential symptoms include:
- Fast heart rate
- Sweating
- Nausea
- Diarrhea or vomiting
Clinical Considerations:

Dietary History

How much are you eating?

Describe how you eat.

What are you eating?
Internal Hernias

Potential sites:

A. Transverse mesocolon
B. Peterson hernia
C. Jejunookejunostomy mesenteric defect
Internal Hernias

- Variable & vague symptoms
- Best imaged during active pain
Internal Hernias

Dilated, fluid filled LUQ Bowel Loop

CT sensitivity 60-90%
Clinical Considerations:

Scan everybody?

Diagnosis:
GI Leak
Internal Hernia
Obstruction
Appendicitis
Abscess
PE
etc...
CT scans & PO contrast
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- Hemorrhage

- Bleeding

- Marginal ulcer
Marginal Ulcers
• Incidence 3-20%
• Causes multifactorial
  • Pouch acid secretion
  • Roux limb tension
  • Staple line dehiscence
Clinical Considerations:

NG Tube placement?

- Avoid blind placement
- Perforation risk real
- Will not decompress distal stomach
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Early: Pain, Obstruction, Bleeding
Late: Sepsis
Surgery Complications

Early:
- Sepsis
- Pain
- Obstruction
- Bleeding

Late:
- Erosion
- Slippage
Band erosion
Early

Late

Surgery

Surgery

Surgery

Surgical Implications

Early

Obstruction

Bleeding

Pain

Sepsis

Late

Specific

Erosion

Slippage
Lap Band: XR appearance
Lap Band: The C Sign
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<td>Internal hernia</td>
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<td>Stenosis</td>
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<td>End Specific</td>
<td>Slippage</td>
<td>Hernia</td>
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<td>Erosion</td>
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Summary

Know the anatomy, know the history, know the diet, and you’ll know your dx.

A stent is tough—image liberally

A lap Band is unique: first, get an XR and deflate the band
Acknowledgements

• Special thanks to UCSF Bariatric Surgery Department--specifically,
  • Dr. Stan Rogers
  • Dr. Jon Carter
  • Bariatric Surgery Kaiser South San Francisco
Bonus Material

• These slides for on-line syllabus only (not part of the 25 minute lecture).
• Materials covered include:
  • Outline of BPD surgery
  • Use of plain X ray to determine surgery
  • Bariatric physiology & clinical considerations
with duodenal switch

There is more detail about this technically complex surgery.
Pre-operative anatomy
Indicates line of stapling and portion of stomach to be removed during sleeve gastrectomy.
iliopancreatic diversio with duodenal switch

Portion of the stomach removed
Small intestine divided in the duodenum above the ampulla of Vater and in the mid-jejunum.
duodenal switch

Proximal end of the distal small intestine is anastomosed to the distal end of the proximal duodenum to form the alimentary limb.

do is closed, the jejunum, hooked up to the proximal duodenum, creating an alimentary limb.
Distal end of proximal small intestine is anastomosed to the ileum in a end-to-side fashion.
What surgery did my patient have?

Many surgeries out here; most of the patients’ abdomens look the same--a few trochar scars.

So how do you know what surgery your patient had?
• Ask the patient
• no duh--but sometimes they won’t know
• Review the chart
• if you have access
The plain film can help!
The plain film can help!

With a lap band, you can identify the band around the stomach, the intertubing leading to the port, and the position of the subcutaneous port.
The plain film can help!

With a gastric bypass BPD, you should look carefully for staples in the stomach region as well as in the RLQ abdominal region.
The plain film can help!

In a sleeve gastrectomy, you may actually see the line of staples or sutures across the stomach.
Clinical Considerations:

- Here are some other clinical considerations for the recent post-bariatric surgery patient and the obese patient in general.
Clinical Considerations:
Bariatric Physiology

Poor Reserve
Multiple Comorbidities
Difficult Airway
<table>
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<tr>
<th>Drug</th>
<th>Dosing</th>
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<tr>
<td>Etomidate</td>
<td>Actual Body Weight</td>
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<tr>
<td>Succinylcholine</td>
<td>Actual Body Weight</td>
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<tr>
<td>Rocuronium, Vecuronium</td>
<td>Ideal Body Weight</td>
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</tbody>
</table>
Clinical Considerations:
The Bariatric Airway

Poor positioning

Improved positioning
Thiamine deficiency + SIRS/sepsis = mortality

Replacement easy! 200-300 mcg IV, with

Clinical Considerations:
Got Thiamine?