Mitigating surgical risk in the morbidly obese: A System by System Approach in the Bariatric Patient

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Disclosure:

I have no actual or potential conflict of interest related to this program/presentation
Objectives

- Identify cardiac, pulmonary endocrine, and hematologic risk factors more prevalent in obese patients
- Describe testing and interventions to mitigate identified risk factors before surgery to help optimize patient
- Learn about postoperative considerations specific to bariatric surgery patients
Obesity Epidemic

- One out of every three adults and one in 6 children are obese.
- Obesity contributes to increased costs, ~150 billion dollars per year - approaching 10% national medical budget
- Disease has reached epidemic proportions and is a major cause of morbidity
- Greater percentage of all surgical patients, not solely bariatric, are obese
50 F presents for bariatric surgery consultation, BMI 63

PMHx-

- DM2, last HGA1c 10.3
- HTN
- Hypercholesterolemia
- Fatty liver disease
- DJD
- Depression
- Smoker
PreOp Eval Starts with:

- Comprehensive H&P, physical exam, labs
- Patients should be evaluated for causes and complications of obesity, in particular those that affect recommendation for surgery (Mechanick et.al, 2008)
- Screen for thyroid dysfunction
- Check lipid panel
- Check Vitamin levels- D, B1, B12, Folate
- Check albumin
- Nicotine and metabolites if hx recent use
Action plan:

- **Would obtain Chemical stress test / Stress echo**
- Cardiac testing - typically highest priority.
- Follow AHA advisory/guidelines Risk Factors affecting cardiac assessment (Poirier *et al.*, 2011)
  - CAD
  - Heart failure
  - HTN
  - Pulmonary HTN (secondary to OSA)
  - Poor exercise capacity
  - Cardiac dysrhythmias (particularly A-fib)
  - History of PE, Deep venous thrombosis
Figure. Cardiac and pulmonary algorithm assessment for elective noncardiac surgery in severely obese patients. CAD indicates coronary artery disease; ECG, electrocardiogram; CVD, cardiovascular disease; RVH, right ventricular hypertrophy; and LBBB, left bundle-branch block. Reprinted from reference 4, with permission from Springer.
Obesity Surgery Mortality Risk Score (OS-MRS) - 4431 pts

Table 3. Proposed Obesity Surgery Mortality Risk Score for Gastric Bypass

<table>
<thead>
<tr>
<th>Risk Factor</th>
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<tbody>
<tr>
<td>BMI ≥50 kg/m²</td>
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<tr>
<td>Male gender</td>
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<tr>
<td>Hypertension as a comorbid condition</td>
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<tr>
<td>PE risk as a comorbid condition, defined as the presence of venous thromboembolism event, previous inferior vena cava filter placement, a history of right heart failure or pulmonary hypertension, and/or a history or physical findings of venous stasis, including typical ulcerations or brawny edema</td>
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<tr>
<td>Age ≥45 years</td>
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</tbody>
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BMI indicates body mass index; PE, pulmonary embolus.

(DeMaria et. al, 2007)
Action plan cont’d

- **Smoking Cessation**
- Smoking identified as independent preoperative risk factor in bariatric pts and was associated with significant postoperative complications. (Livingston *et al.*, 2006)
- Minimum four weeks of abstinence reduces respiratory complications (Wong *et al.*, 2012)
- Abstinence of 3-4 weeks reduces wound-healing complications.
- Short-term cessation no significant effect on respiratory complications.
- **Smoking associated with marginal ulcer**
Action plan cont’d

- **Target HgA1c of 6.5 – 7**-
  
  Optimize preop glycemic control
  
  Recent guidelines recommend HgA1c of 7.2 or less prior to surgery. (Mechanick *et al.*, 2008)

- **Preop weight loss 5-10% TBW** -
  
  Decreases liver size (Colles *et al.*, 2006)
  
  Improves BP control (Aucott *et al.*, 2005)
  
  Improves glycemic control (Wing 2007),
  
  Decreased rate of postop complications (Benotti *et al.*, 2009)
Liver Shrinking Diet

Baseline

Week 12

Colles et al
Action plan (cont’d)

- **Screen for obstructive sleep apnea**
  - Obesity a leading cause for OSA
  - 10% increase in BMI results in 32% increase in AHI index (Demaria *et al.*, 2007)
  - OSA is an independent risk factor for 30 day morbidity and mortality following bariatric surgery (Flum *et al.*, 2009)
  - Modest weight loss can improve OSA and can optimize patient risk related to OSA in the perioperative period.
Action plan (cont’d)

- **Retrievable IVC filter placement**

- High risk pt- super morbid obesity, known hx of VTE, hypercoagulopathy immobility, poor pulmonary reserve

- Incidence of VTE 0.3-5.0%, up to 30% of these with PE (Becattini et al, 2012)

- No current consensus on use of rIVC in addition to chemoprophylaxis

- Recent ASMBS/AACE guidelines from 2008 do recommend the use of rIVC in select high risk pts (Mechanick et al, 2008)
Postoperative Considerations

- Adjust BP and DM meds after surgery
- NSAIDS, ASA contraindicated post LRYGB
- Ensure patient is compliant with recommended vitamin regimen: MVI, B12, Calcium Citrate, Vitamin D, Iron in post RYGB in particular. They are most at risk for vitamin deficiencies.
- Annual labwork to check for deficiencies if patient decides to f/u with PCP one year out from surgery.
- Communication with bariatric surgeon regarding any GI complaints.
Thank You!
References


