OBESITY AND ACUTE SURGERY

Dr Aisling Fleury
Geriatrician
Peri-operative medicine service
Logan Hospital
Overview

• Case presentation
• Brief summary of the evidence
• Obesity and the older patient
• Questions
Case

• JK 36yo female admitted to Logan hospital with incarcerated hernia
  • Open hernia repair in OT (no bowel involved)

• Background Hx
  • Morbid obesity with BMI 53
  • Previous lap band surgery 2006
  • Type 1 respiratory failure with pneumonia requiring intubation and ventilation in ICU December 2014
  • Being investigated for OSA
Case

- O2 saturation on room air 95-98% pre-operatively
- Uneventful surgery and transferred to the ward post-operatively
  - Note in the chart for nocturnal oxygen saturation monitoring by anaesthetist given desaturation events intra-operatively
Case

• Day 1 post operatively, O2 sats 70%
  • Patient completely asymptomatic apart from mild headache

• ABG on room air
  • pH 7.28
  • pCO2 68
  • pO2 38
  • O2 sats 64%
Outcome

• CTPA negative for PE
  • Showed mosaicism and possible ground glass changes in lung field

• Sleep study obtained from private lab
  • AHI 150 (severe OSA = AHI >30)
  • Transferred under respiratory team and home on CPAP
Obesity in Acute/Emergency Surgery

- Pre-operative issues
- Intra-operative issues
- Post-operative issues
Pre-operative diagnosis

- Clinical assessment of the severely obese patient is challenging\(^1\)
  - Obese patients may have different injury patterns post blunt trauma Vs lean patients\(^2\)

- Imaging is not as helpful e.g. USS
  - Patient may be too large for the CT scanner

Pre-operative medical assessment

- Depends on the underlying surgical pathology
- In the acute setting focus is on
  - Fluid balance status
  - Sepsis control
  - Management of arrhythmias especially atrial fibrillation
  - Blood sugar control in diabetics (especially Type 1 diabetes mellitus)
  - Assessment of cardiorespiratory function to try gauge pre-morbid function
- *Advanced care planning where appropriate
Intra-operatively

• Handover to the anaesthetist

• Physical toll on the surgeon
Post-operative care

• Decision for ICU post-op or not depends on the patient, the illness, the type of surgery and intra-operative complications
  • Obese patients more likely to go to ICU post emergency surgery than non-obese\(^1,2\)
  • Super-obese (BMI >50) had longer LOS in ICU post-elective cardiac surgery in a single centre study in the US\(^3\)

1. Ferrada et al. J Obes 2014
Obesity related complications

- Increased risk of surgical site and noscomial infections\textsuperscript{1,2}

- Increased risk of mortality (maybe)
  - In blunt trauma, the adjusted OR for mortality for obesity was 1.6\textsuperscript{3}
  - No difference in mortality in other studies\textsuperscript{2,4,5}

2. Ferrada et al. J Obes 2014
4. Buck et al. BJS 2014
Consequences of obesity

- Obesity is associated with the metabolic syndrome
  - Type 2 diabetes mellitus
  - Dyslipidaemia
  - Hypertension
  - Obstructive sleep apnoea
  - Ischaemic heart disease
Obesity and post operative risk

- Increased risk of DVT and PE in post-operative period\textsuperscript{1,2}
  - Challenge in the morbidly obese group is appropriate dosing of anticoagulant therapy

- Increased risk of MI\textsuperscript{3,4}
  - Tenuous link to obesity alone contributing to risk of post-operative MI

Obesity and Obstructive Sleep Apnoea (OSA)

- Clear association between increasing BMI and risk of OSA

- Most of the literature is on elective patients

- Emerging literature on links between OSA and post-operative complications\(^1,2\)

1. Adensanya et al. Chest 2010
Screening for OSA

• STOP-BANG questionnaire\(^1\)
  • Validated in peri-operative setting
  • Screening tool for moderate-severe OSA

• Estimated that up to 25% of patients will screen as high risk for OSA\(^2\)
  • Of these, 80% will have some form of OSA

1. Ong et al. Sleep Breath 2010
STOP-BANG Questionnaire

- Snoring
- Tired
- Observed (snoring/apnoeas)
- Pressure (HTN)
- BMI
- Age >50
- Neck size
- Gender (M)

Chung F et al.  
OSA in the post-operative phase

- Avoid oxygen desaturation

- If usually on CPAP, get the patient to use it post-operatively\(^1\)

- Consider asking your anaesthetist to use regional anaesthetic blocks to minimise systemic opioid analgesia

1. Adensanya et al. Chest 2010
Obesity and the elderly

• In patients ≥75yo all cause mortality and death from cardiovascular disease decreases with increasing BMI
  • But it is a U shaped curve

Obesity in the elderly

• Relationship between “fit” overweight and sarcopenic overweight is poorly understood
  • Sarcopenia is associated with poorer outcomes in older patients

• Functional capacity is a better marker of physiological reserve
Obesity paradox

- Is paradox the right term?
Summary

• Obesity is a spectrum
  • For those on the lower end without metabolic syndrome, there is no good evidence that they do worse
  • For those with severe obesity, obesity-associated complications e.g. cardiovascular disease or functional loss due to obesity, this group have poorer outcomes

• Being underweight is worse
  • Especially if you are an older person
Crux of the matter is…. 

• The underlying pathology and type of operation required is still most important determinant of risk and outcome

• And (most) physicians don’t bite, so ask us for help if needed
Questions