Management of Morbid Obesity

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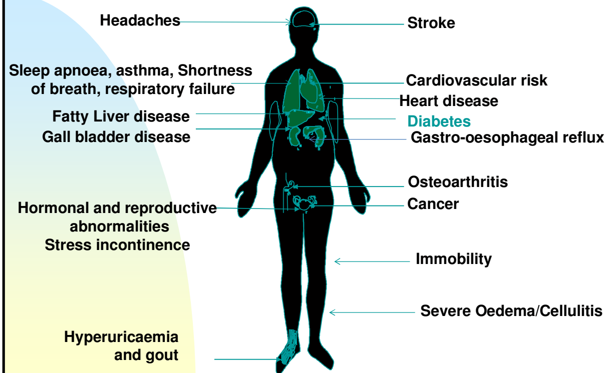
Definition and Prevalence

- Severe obesity – BMI $\geq$35
- Prevalence in South Australia (aged 18+) increased from 2.6% in 1991 to 5.3% in 2003.
- Increasing disproportionately

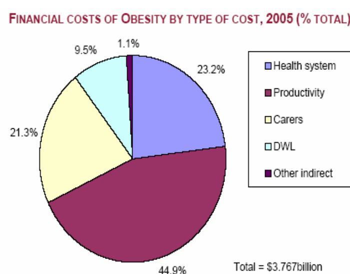
Physical Complications



Psychosocial Consequences

- Social isolation
- Unemployment
- Decreased sexual life
- Low self-esteem
- Depression
- Anxiety

Costs

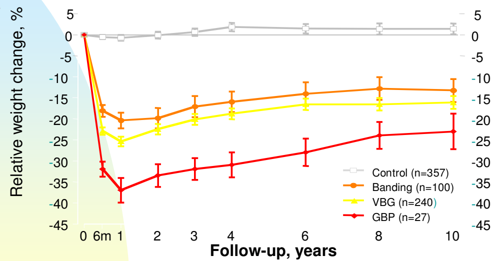


Surgery for Morbid Obesity

- Rationale
- Efficacy for weight-loss
- Clinical Benefits beyond weight control
- Costs benefit
- Which Operation

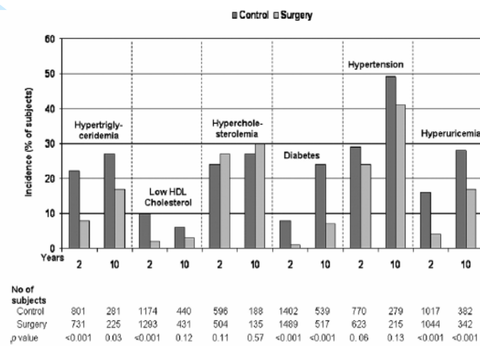
Swedish Obesity Study (SOS)

• 2000 patients self selected to diet or gastric restrictive surgery.

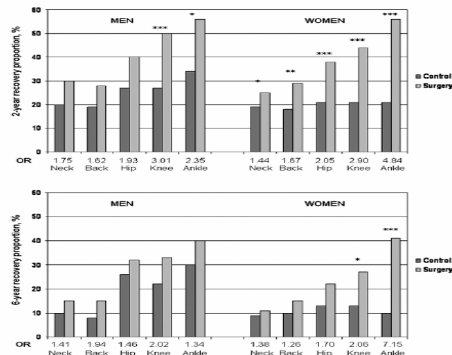


•6 years into the study, 3 "surgical" patients and 27 "diet" patients had died.

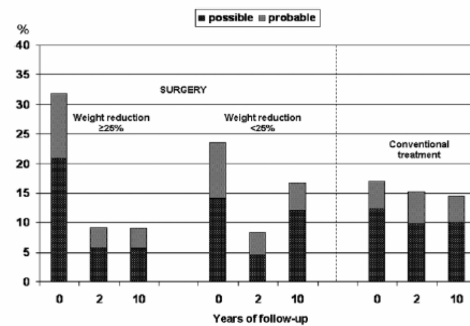
Improvements in Cardiovascular Risk Factors



Recovery from Work Restricting Musculoskeletal Pain



Improvement in Mood



Reduction in Medication Costs

- After RYBG mean monthly medication cost decreased from $196 to $54 one month after surgery (72% cost savings).
  - GORD 81 per cent
  - DM was 69 per cent
  - HLP was 53 per cent; and for
  - HTN was 43 per cent.
- Annual savings $2016 per patient.

Nguyen NT et ak, Reduction in prescription medication costs after laparoscopic gastric bypass. Am Surg. 2006 Oct;72(10):853-6

Cost Benefits of

Bariatric Surgery for Morbid Obesity

Surgery was cost effective at £11,000 per QALY.

Comparisons of the different types of surgery were equivocal.

Clegg et al Cochrane Review 2003

BARIATRIC SURGERY

Selecting appropriate candidates for weight loss surgery.

Standard criteria:

- BMI > 40
- BMI > 35
  with significant co-morbidities,
  diabetes
  sleep apnoea
- Age 18-60

Evidence of suitability:

Previous attempts at non-operative means of weight loss over 5 years:

- Diet
- Exercise
- Behavioural modification

Patient Characteristics

- Well informed
- Motivated
- Able to exercise
- Acceptable operative risk

Patient understanding and collaboration is critical to success

1. Patients who are unsuitable

- deny that food intake is a contributing factor to their weight
- see surgery as a quick fix without risk or effort
- have an inability or unwillingness to exercise

Where surgical risk outweighs the probability of beneficial weight loss

2. Patients who are unsuitable

- too young <18
- too old >60
- too light BMI <35
- too heavy BMI >70 or >250kg
- too sick severe co-morbidities

Pre Operative Management

Assess/improve:

- Metabolic, renal, hepatic function and thyroid function
- Exclude endocrinopathy
- Liver size
- Cardio-respiratory function and contributory factors.
- Mobility
- Mood
- Eating behavior, lifestyle, psychosocial factors

PRE-OPERATIVE WORK UP

1. Pathology:
   - MBA 20
   - Fasting lipids
   - CBP
   - Thyroid function
   - Hb AIC
   - Fe Studies
   - B12 / RBL folate
2. U/S upper abdomen to assess:
   - Liver
   - Gall bladder

PRE-OPERATIVE WORK UP

3. Upper GI Endoscopy

   +/- colonoscopy if F+ rectal bleeding

4. Sleep Studies:
   - BMI > 50
   - High Epworth Sleepiness scale
   - History suggestive of OSA
5. Dietitian

PRE-OPERATIVE WORK UP

6. Other tests individually indicated, eg:
   - Echocardiogram
   - Pulmonary function test
7. Specialist referrals individually indicated:
   - Respiratory physician
   - Cardiologist
   - Psychiatrist / psychologist

PREPARATION FOR SURGERY

Decreasing risks:

- Stabilise medical conditions
- Improve fitness through exercise
  - Pedometer
  - Realistic goals
  - Journal
- Weight loss
  - VLCD [very low calorie diet]

Very low calorie diets (VLCDs):

Definition:

•Manufactured meal replacement – nutritionally complete

• Calories below average daily EE (450-600 Kcals) .

Rationale for VLCDs:

•Convenient, low cost.

•Suppression of hunger (related to ketone production).

•Sense of well-being.

•Substantial (~14-20Kg) weight-loss over 8-12 weeks.

•Relative sparing of lean body mass

Practical Use:

• Combine with aerobic and resistance exercise/activity

• Behaviour management and psychological support

• Combine with appetite suppressants where required

Indications for VLCDs

•**Weight reduction is required urgently:**

•Life threatening complications: -

•Respiratory and/or cardiac failure;

•Refractory type 2 diabetes mellitus;

•Severe gastro-esophageal reflux.

Prior to elective surgery:

• Joint replacement

•Abdominal hernia repair

• Cholecystecomy

• Cardiac surgery.

•**Prior to Bariatric surgery:**

•**Where weight reduction will benefit obese subjects**

•Immobility

•Chronic cardio-respiratory disease.

•Where conventional approaches have failed.

•Motivation and/or early demonstrable weight loss is required.

Practical Considerations

- Reduce oral hypoglycaemics and insulin by 50% on commencement of V LCD.
- Reduce diuretics – a large diuresis occurs in the first week.
- Monitor renal function closely.
- A temporary deterioration of liver function tests may occur.
- Monitor mood – depression may occur with rapid weight loss
- Constipation and bad breath – not infrequent.

PREPARATION FOR SURGERY

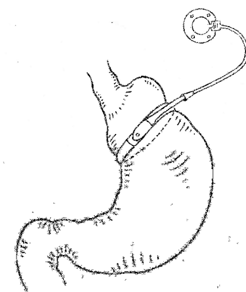
Rules of thumb

- Set realistic goals
- Even small gains help
- Postpone surgery until conditions are optimum
- Patient collaboration is critical

BARIATRIC SURGERY

- RESTRICTIVE:
  Vertical banded gastroplasty [VBG]
  Gastric banding [LAGB]
- RESTRICTIVE / MALABSORPTIVE:
  Roux en Y Gastric Bypass [RYGB]
- MALABSORPTIVE:
  Biliopancreatic diversion [BPD]
  Duodenal switch [BPD/DS]

Laparascopic adjustable banding

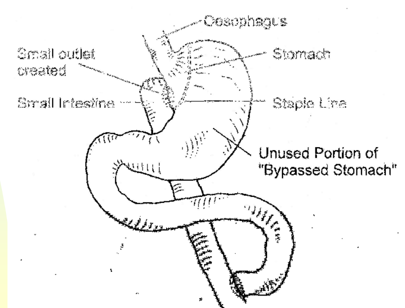


PATIENT SELECTION

VBG and LAGB

- Expected weight loss:
  - BMI down 10
  - EBWL 30-45%
- Suitable BMI is 35-45
- Indicators:
  - big eater
  - non-sweet eater
  - non-diabetic
  - able to exercise
  - minimal reflux

Roux en Y Gastric Bypass



PATIENT SELECTION

RYGB

- Expected weight loss:
  - BMI down 20
  - EBWL 50-75%
- Suitable BMI is 35-60
- Indicators:
  - diabetic
  - sweet-eater
  - snacks throughout day
  - limited exercise capability

PATIENT SELECTION

BPD and BPD/DS

- Expected weight loss:
  - BMI down 30
  - EBWL 60-100%
- Suitable BMI is greater than 60
- Indicators:
  - Financially able to afford high protein diet, and vitamin and nutritional supplements indefinitely.
  - Dedicated nutritional support team

SLEEVE GASTRECTOMY ALONE

For consideration in the case of super morbid obesity

- Indicators:
  - BMI greater than 60
  - Very high risk patients
- No anastomosis
- Staged procedure prior to BPD / DS or RYGB
- EBWL up to 30% in 6 months

Factors influencing the CHOICE OF OPERATION

- BMI
- Central obesity
- Gender
- Media influence
- Long term outcomes
- Quality of life
- Eating patterns
- Relief of co-morbidities
- Complications

The winners

- Kilograms lost
- Improved health
- Energised lifestyle
- Better relationships