Expert opinion - Current bariatric procedures

3 September 2009

Mr Paul Super, Mr Rishi Singhal and Miss Catherine Bryant discuss

Which patients may benefit?

Patients with a BMI of greater than 35 in the presence of co-morbidities and those with a BMI of greater than 40 without co-morbidities will be considered for surgery.
NICE has recommended that bariatric surgical procedures should be available as a treatment option for obese patients to aid weight loss.[1]

The box below details the criteria laid out by NICE, all of which need to be met to make a patient eligible for surgery.

NICE criteria for surgery[1]
Bariatric surgery is recommended as a treatment option for adults with obesity if all of the following criteria are fulfilled. - The patient has a BMI of 40 or more, or 35-40 and other significant disease (for example, type-2 diabetes or hypertension) that could be improved if they lost weight. - All appropriate non-surgical measures have been tried but have failed to achieve or maintain adequate, clinically beneficial weight loss for at least six months. - The patient has been receiving or will receive intensive management in a specialist obesity service. - The patient is generally fit for anaesthesia and surgery. - The patient commits to the need for long-term follow-up.

Patients who are unable to understand or comply with the behavioural changes required after bariatric surgery are normally excluded from surgical treatment.

What does it involve?

The first bariatric procedure, the jejunoileal bypass, was performed in 1954. Since then numerous bariatric procedures have been devised.

The current range of bariatric procedures is listed below.

Current bariatric procedures			
Type	**Procedure**	**Mechanism of action**	**Comments**
Restrictive procedures	Laparoscopic adjustable gastric banding (LAGB)	Promote satiety by restricting the total amount of food that can enter the stomach	Most commonly performed procedure worldwide
	Vertical banded gastroplasty (VBG)		Historical procedure. Previously know as stomach stapling
	Roux-en-Y gastric bypass (RYGB)		Second most commonly performed bariatric procedure
	Sleeve gastrectomy		Usually performed as the first stage of a two-stage surgery (usually followed by RYGB or BPD)
Malabsorptive procedures	Bilio-pancreatic diversion (BPD) ± duodenal switch (BPD-DS)	Work principally by causing malabsorption	Achieve very high weight loss and resolution in co-morbidities but with the risk of increased long-term morbidity and mortality
Endoscopic procedures	Intragastric balloon	Restricts intragastric volume	Can be beneficial to reduce weight before a more definitive procedure. Benefits only last for up to six months

In how many patients has bariatric surgery been performed?

Between 2007 and 2008 there were 2,724 admissions to NHS hospitals for bariatric surgery and over 5,000 overall admissions for obesity-related problems. This is a seven-fold increase on figures from a decade previously.

It is forecast that the cost of obesity to the NHS in England is set to rise to £6.3 billion in 2015.[1]

Are there complications with gastric surgery?

In 2007, a meta-analysis of 361 studies reported the outcomes in more than 85,000 patients. It concluded that the 30-day mortality for restrictive procedures (laparoscopic adjustable gastric banding, LAGB, gastroplasty) was 0.07 per cent followed by gastric bypass and malabsorptive procedures (bilio-pancreatic diversion, BPD) at 0.16 per cent and 1.11 per cent respectively. The risk for laparoscopic procedures was consistently less than for open procedures.[2]

The general complications for bariatric procedures include those for any major abdominal surgery, such as venous thromboembolism, infection and haemorrhage.

The procedure-specific complications can be divided into minor and major complications. For gastric banding these include band slippage, band erosion and port site or band infections. These would be classified as minor since they are rarely life-threatening.

Complications from Roux-en-Y gastric bypass (RYGB) and BPD range from stomal ulceration as a minor complication to the more life-threatening anastomotic leaks.

Other long-term complications specific to BPD include vitamin deficiences as a result of malabsorption.

How long do patients take to recover?

Almost all of these procedures are now carried out laparoscopically. One of the advantages of LAGB over other procedures is that it can be performed as a day case. In our unit, 60 per cent of the banding procedures are now performed as day case routinely.[3]

The post-operative period requires significant lifestyle changes, dietary changes and the introduction of an exercise regimen.

BPD, and to a lesser extent RYGB, require a more intensive follow-up regimen to diagnose and correct the nutritional deficiencies that can develop.

What are the outcome statistics?

The main outcomes that are measured post-bariatric surgery include excess weight loss and resolution or improvement in obesity-related co-morbidities.

The amount of post-operative weight loss varies widely with the type of procedure. A meta-analysis of procedure-specific outcomes was published in 2004.[4] The authors of this meta-analysis concluded that the overall excess weight loss was 61.2 per cent for all procedures. The highest excess weight loss was seen following BPD and duodenal switch at 70 per cent, followed by gastroplasty at 68.2 per cent, gastric bypass at 61.6 per cent and gastric banding at 47.5 per cent.[4]

Bariatric surgery as a treatment option for metabolic syndrome is now becoming widely acknowledged as both viable and successful. A further meta-analysis published in 2009 showed a 78.1 per cent total resolution of diabetes mellitus post surgery.[5]

The greatest resolution in diabetes was seen following duodenal switch and BPD, followed by gastric bypass and then gastric banding.[5] A 61.7 per cent resolution of hypertension was also seen.[4]

What is the cost? Will PCTs pay for this?

Although NICE guidelines recommend weight-loss surgery be offered to suitable patients, no allocation was made for this in NHS budgeting. Currently, applications for surgery from PCTs are considered on a case-by-case basis through Exceptional Treatment Panels.

It has been estimated by NICE that the cost of each procedure, over and above that of medical care, is £5,665.[1]

At present, the Royal College of Surgeons of England does not have a standpoint and has not produced any guidelines on the provision of bariatric surgical procedures in NHS centres. However, a task force is currently being put into place to produce a document regarding this and we await its conclusions.

- *Mr Super is consultant surgeon at the Heart of England NHS Foundation Trust, Mr Singhal is a specialist registrar in general surgery on the West Midlands Rotation and Miss Bryant is a specialty trainee at King's College Hospital, London*

- Competing interests: non declared

References

1. NICE Clinical Guideline 43 Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. London: NICE, 2006.

2. Buchwald H, Estok R, Fahrback, K, Banal D, Sledge I. Trends in mortality in bariatric surgery: a systematic review and meta-analysis. Surgery 2007; 142: 621-32.

3. Singhal R, Kitchen M, Bridgwater S, Super P. E posters of distinction 1 0116. Laparoscopic adjustable gastric banding - a 'true day case' procedure. Br J Surgery 2009; 96(S4): 58.

4. Buchwald H, Avidor Y, Braunwald E et al. Bariatric surgery: a systematic review and meta-analysis. JAMA 2004; 292 (14): 1,724-37.

5. Buchwald H, Estok R, Fahrback, K et al. Weight and type-2 diabetes mellitus after bariatric surgery: systematic review and meta-analysis. Am J Med 2009; 122: 248-56.