

Bariatric surgery: A cure for diabetes?

For morbidly obese people with type 2 diabetes there is no doubt that if they lose weight their diabetes will often resolve. However, the main barrier seems to be inspiring them to lose their excess weight.

If the person satisfies NICE (2006) criteria for bariatric surgery, and subsequently has a surgical procedure to induce weight loss, then the effect on diabetes can be dramatic. In a recent meta-analysis of bariatric surgery outcomes, diabetes was resolved in 48–72% of people after gastric banding, 84% of people after a gastric bypass and 98% of people after a biliopancreatic diversion (Buchwald et al, 2004). The newer operation of sleeve gastrectomy also looks promising with rates of diabetes resolution of around 76% (Vidal et al, 2008). There is some evidence that people with type 2 diabetes of less than 5 years' duration may have better resolution rates after bariatric surgery because they do not yet have beta-cell failure (Schauer et al, 2003).

After restrictive bariatric surgery (an operation designed to restrict the amount a person can eat, such as gastric banding and sleeve gastrectomy), diabetes is slower to resolve, and the technique only has a maximum effect when much of the excess weight has been lost – this usually takes 1–2 years (Greve and Rubino, 2008). Remarkably, after bypass surgery (an operation designed to bypass much of the foregut, such as gastric bypass or biliopancreatic diversion), resolution of diabetes takes only days and appears to be independent of weight loss (Schauer et al, 2003). GPs are often amazed to see their former patients suddenly not requiring diabetes medication without having lost any weight. Indeed, many diabetologists reluctantly concede that bariatric surgeons are the only people who can cure type 2 diabetes.

Such rapid resolution of type 2 diabetes has naturally created a lot of interest in the pathogenesis of the condition to understand how the bypass operation has such a profound effect. There may be several mechanisms by which bypass surgery achieves this remarkable

outcome, including calorie restriction, reduction in secretion of ghrelin and gastric inhibitory polypeptide, along with an increase in secretion of glucagon-like peptide-1 and peptide-YY – all of which influence insulin secretion. People who have diabetes and are obese (but not morbidly) might also be better treated with a bypass in some situations, such as when the person is very young and the diabetes very difficult to control.

In 2007 there was an international meeting (the Diabetes and Surgery Summit – an ad hoc meeting held in Rome by diabetologists and bariatric surgeons) that presented the evidence for the impressive effects of bariatric surgery on diabetes. There was a consensus view of attendees, that people with a BMI >35 kg/m² who had type 2 diabetes that was difficult to control should be considered for bariatric surgery. They even thought selected cases of people with even lower BMIs should also be considered for surgery.

There is now an industry in trying to mimic the bypass effects of surgery using more innovative and less invasive methods, such as an internal foregut sleeve. Until these are fully developed and validated then the only alternative is to consider conventional bariatric surgery, which is virtually always done by a keyhole technique. The surgery is associated with a very low mortality, especially when carried out in high volume units by experienced surgeons.

The problem in the UK (and many other countries) is in obtaining funding for people who want a surgical solution for their morbid obesity. If the person also has type 2 diabetes among their comorbidities they should certainly have some priority in obtaining funding. Unfortunately, the rationing criteria used by many Primary Care Trusts does not reflect this. If you have a patient who is morbidly obese and has type 2 diabetes then you should give serious consideration to obtaining funding for them to be assessed for suitability to undergo bariatric surgery. ■



John Baxter

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John Baxter is Professor of Surgery, Swansea University, Honorary Consultant Upper GI and Endocrine Surgeon, Morriston Hospital, Swansea, and President of the British Obesity and Metabolic Surgery Society.