

# Surgery for diabetes: Can theory translate into clinical practice?



**Jonathan Pinkney**

Professor of Medicine, Plymouth University Peninsula Schools of Medicine and Dentistry, and Honorary Consultant Physician, Plymouth Hospitals NHS Trust

Nearly 9 years have passed since the NICE clinical guideline (CG43) set out standards for good clinical practice in the treatment of obesity (NICE, 2006). This important, landmark document contributed to substantial improvements in access to, and standards of, bariatric surgery. However, debate continues over the use of bariatric surgery as a treatment for type 2 diabetes, as opposed to a treatment for obesity, and about the adequacy of current arrangements for long-term follow-up care after bariatric surgery. Clinical guideline 189 (NICE, 2014) published late last year reiterates much of the common-sense approach of the 2006 guidelines, with the main additional recommendations being the indications for bariatric surgery and long-term post-operative care.

## Bariatric surgery recommendations

The new guidance on bariatric surgery for people with type 2 diabetes suggests offering an “expedited” assessment for surgery for people with recent-onset type 2 diabetes and a BMI of greater than or equal to 35 kg/m<sup>2</sup>\* (section 1.11.1). This is essentially a minor amendment to existing guidance and is supported by the observation that people with diabetes who respond best to bariatric surgery, in terms of glycaemic response or being free of treatment, are those with diabetes of more recent onset (Schauer et al, 2003).

It may be reasonable, therefore, to consider bariatric surgery earlier into the course of diabetes. Although, that is certainly not to say that individuals with longer duration diabetes cannot also benefit very substantially, particularly from risk reduction or insulin withdrawal, even if “glycaemic remission” is not achieved.

There may also be debate about the interpretation of “expedited”, because experience suggests that it is best if neither patients nor doctors cut corners in the surgical assessment, which could lead to bariatric surgery for individuals who are ill-suited or unprepared for this treatment. It may be that people who struggle with type 2 diabetes because of poor adherence to

\*as long as they are also receiving or will soon receive assessment in a tier 3 service (or equivalent).

diet, medications and follow-up, may be the very same people who would also struggle after bariatric surgery, suffering from weight relapse or micro-nutrient deficiency. Therefore, it seems right that bariatric surgery is considered as a more routine treatment option for people with diabetes who are recently diagnosed, with the continued proviso that individuals continue to be carefully assessed and well prepared.

The most significant additional recommendation to the NICE guidelines is that for the first time an assessment for bariatric surgery should be considered in individuals with a BMI below 35 kg/m<sup>2</sup>, usually in the range of 30–34.9 kg/m<sup>2</sup>\* (section 1.11.2). The final addition in the updated bariatric surgery section of the guidelines goes on to suggest that an assessment for bariatric surgery might also be contemplated at a lower BMI\* in individuals of Asian ethnicity compared with other populations (section 1.11.3).

While these guidelines reflect the International Diabetes Federation consensus statement (Dixon et al, 2011) and are supported by recent findings (Schauer et al, 2014), there are some reservations to be expressed with this position. As the guidance itself acknowledges, there are significant gaps in the evidence base because well-designed, long-term studies of bariatric surgery in the treatment of diabetes still have not been conducted. The median BMI of people with type 2 diabetes in many countries is greater than 30 kg/m<sup>2</sup>, and so it follows from the updated NICE guideline that many more people with diabetes should be invited to consider bariatric surgery.

## Implications in the clinic

The implications of these additions to the NICE guidelines for clinical practice in the diabetes clinic remain to be seen. Primary care and diabetes healthcare professionals will need to substantially improve their knowledge and ability to discuss the pros and cons of bariatric surgery as a treatment option for diabetes. Perhaps bariatric surgery might be an appropriate treatment choice for some people with a BMI under 35 kg/m<sup>2</sup>, but it is uncertain whether this is superior to a pharmacological treatment approach to diabetes,

if considered from the perspectives of people with diabetes and the health service. Appropriate quality of life and patient satisfaction measures specific to diabetes as opposed to obesity have not been reported. The limited evidence available suggests that there is currently not likely to be a high demand for bariatric surgery in people with type 2 diabetes and a BMI of less than 35 kg/m<sup>2</sup> (Sarwer et al, 2013).

### Follow-up care recommendations

Stronger guidance on long-term follow-up care after bariatric surgery has also been included in the updated guidelines, and it is extremely welcome. Section 1.12.1 of the new guidance emphasises the need for long-term follow-up for a minimum of 2 years after bariatric surgery and, thereafter, annual monitoring and appropriate follow up in a shared care arrangement with primary care (section 1.12.2).

While this model probably makes sense, much work remains to be done to up-skill primary care practitioners to share this role. Therefore, commissioners should give more attention to the development of the knowledge, skills and infrastructure needed for safer long-term follow-up after bariatric surgery. In most healthcare systems, there remain significant reservations about the adequacy and safety of long-term follow-up arrangements. A future of uncertainty is not an appropriate follow-up environment for people undergoing treatment for diabetes.

### Final thoughts

The propositions that bariatric surgery should be a treatment option available for more people with type 2 diabetes, potentially offered sooner after diabetes-onset, and subject to more rigorous long-term follow-up are all to be welcomed. However, there needs to be a far wider debate about the implications of abandoning the current BMI threshold. In the words of the American Diabetes Association's standards of care (ADA, 2015), "Although small trials have shown glycemic benefit of bariatric surgery in patients with type 2 diabetes and BMI 30–35 kg/m<sup>2</sup>, there is currently insufficient evidence to generally recommend surgery in patients with BMI <35 kg/m<sup>2</sup>". The crux of the matter is that most people currently seek bariatric surgery primarily for weight loss, while very few at lower BMI levels appear to seek it specifically as a diabetes treatment.

The NICE guidance appears not to be a response to the voices of people with type 2 diabetes, and it remains

to be seen how the theory and logic of bariatric or "metabolic" surgery irrespective of BMI, which appeals to the experts, will appeal to patients and will translate into clinical practice. Finally, if BMI thresholds for bariatric surgery in the treatment of type 2 diabetes are to be abandoned, it is high time that NICE also removes the entirely inappropriate restriction of glucagon-like peptide-1 analogues to people with a BMI above or equal to 35 kg/m<sup>2</sup>, since the benefits of weight loss are not restricted to this group (NICE, 2010; 2012; 2013). To see such paradox in different pieces of NICE guidance shows that the entire therapy of type 2 diabetes needs reconsideration. The lack of long-term comparative studies of medical and surgical treatment for diabetes is once again highlighted. ■

ADA (2015) *Diabetes Care* **38**(Suppl 1): S41–S48

Dixon JB et al (2011) *Diabet Med* **28**: 628–42

NICE (2006) *Obesity: Guidance on the prevention of overweight and obesity in adults and children* (CG43). NICE, London

NICE (2010) *Liraglutide for the treatment of type 2 diabetes mellitus* (TA203). NICE, London

NICE (2012) *Exenatide prolonged-release suspension for injection in combination with oral antidiabetic therapy for the treatment of type 2 diabetes* (TA248). NICE, London

NICE (2013) *Type 2 diabetes: lixisenatide* (ESNM26). NICE, London.

NICE (2014) *Obesity: identification, assessment and management of overweight and obesity in children, young people and adults* (CG189). NICE, London

Sarwer DB et al (2013) *Surg Obes Relat Dis* **9**: 630–5

Schauer PR et al (2003) *Ann Surg* **238**: 467–84

Schauer PR et al (2014) *N Engl J Med* **370**: 2002–13

*"The NICE guidance appears not to be a response to the voices of people with diabetes, so it remains to be seen how the theory and logic of bariatric surgery will appeal to people with diabetes."*



Roger Ackroyd

Consultant Surgeon,  
President of BOMSS

### A surgeon's perspective

NICE guidance on obesity surgery was first published in 2002 (TA46) and was then revised in 2006 (CG43). The BMI threshold has always been 40 kg/m<sup>2</sup> or more (or 35 kg/m<sup>2</sup> or more with significant comorbidity). For the first time, in the recently published update to this guidance (NICE, 2014), it is now stated that surgery should be considered for a BMI as low as 30 kg/m<sup>2</sup> if the individual has type 2 diabetes.

I think that this is a welcome change and it offers an alternative for those with type 2 diabetes with a BMI between 30 and 35 kg/m<sup>2</sup>, but I agree with Professor Pinkney that the evidence for this is somewhat limited.

On the face of it, this change may lead to a massive increase in the number of individuals able to access surgery, but I think he makes a valid point that, in practice, it may not have such a great effect as the vast majority of people seeking bariatric surgery do so to lose weight and not to cure their diabetes. It remains to be seen what impact the change will have.

NICE (2002) *The clinical effectiveness and cost effectiveness of surgery for people with morbid obesity* (TA46). NICE, London

NICE (2006) *Obesity: Guidance on the prevention of overweight and obesity in adults and children* (CG43). NICE, London

NICE (2014) *Obesity: identification, assessment and management of overweight and obesity in children, young people and adults* (CG189). NICE, London