

Surgical options in obesity

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Surgery is currently the only reliable method of achieving substantial and prolonged weight loss in patients with severe obesity. It can be accomplished with a high level of safety and there are few immediate or long-term complications. Of the procedures currently being employed, the gastric bypass remains the 'gold standard', achieving an average weight loss of 60-80% of excess weight over a 12-18 month period. Significant improvement and even resolution of associated co-morbidities is seen as a result. There is good reason to believe surgery should be more widely performed in severely obese individuals.

As the epidemic of obesity has grown, so too has an acceptance, albeit reluctant, of our inability to manage it with standard therapeutic approaches, which remain woefully ineffective in the long term. Surgery was first considered as an option for severe obesity in the late 1950s when the initial small intestinal bypass operations were performed. Although very effective at achieving substantial weight loss, these malabsorptive procedures were associated with a high rate of serious and even life-threatening metabolic and nutritional complications and their use has been discontinued. However, surgical procedures for severe obesity have continued to evolve over the ensuing 40 years to the point where highly effective and reasonably safe and acceptable options now exist. Unlike the original jejuno-ileal bypasses, which worked by producing malabsorption, the newer operations, generically referred to as restrictive procedures, function by restricting intake. Perhaps as a result of the considerable morbidity and even mortality associated with the early forms of these operations, coupled with a prevailing view that weight control should be within the grasp of the individual, surgery has not enjoyed favour with either health professionals or the public at large. However, with the presently available and practised procedures it is entirely appropriate that this rather negative attitude should be revisited and, possibly, modified.

Indications for surgery

Surgical procedures for the control of obesity were devised for use in those with so-called morbid obesity, which has usually been taken to indicate a weight of more than double ideal body weight. However, obesity is probably best defined by body mass index (BMI). Overweight is present with BMI over 27, obesity with BMI over 30 and morbid obesity with BMI over 40. As long ago as 1991, a consensus statement from the National Institutes of Health in the United States recorded that surgery (even as it was then performed) was an appropriate modality of treatment for those with BMI over 40 or over 35 in the presence of associated significant co-morbidities¹. This remains an appropriate statement today and suitably defines those individuals for whom surgery is indicated.

Surgical options

A variety of surgical procedures are currently performed for severe obesity. In general terms, the particular operation offered is dictated by the preference of the surgeon rather than by any agreed set of circumstances which make that procedure preferable. Each has its advantages and disadvantages, but each now has a long enough history of use for comparative comments to be made. Four generic procedures are in use today.

Rou-en-Y gastric bypass

This operation has been, and probably remains, the gold standard, although because of its technical difficulty, perceived or otherwise, and the morbidity associated with the early forms of the operation, many surgeons have sought simpler operations in answer to the same problem. Hence the impetus for the development of the newer operations discussed below. The prototype gastric bypass was developed in the mid-1960s and entailed creation of a small (30ml) gastric pouch based on the fundus of the stomach to which was anastomosed a Roux loop (dysfunctional) of jejunum (Fig. 1). This was a difficult operation to perform in the morbidly obese, for reasons related to poor access to the fundus of the stomach, but weight loss was excellent and invariable. However, late weight gain was not uncommon because of enlargement of the pouch or anastomosis, or both. Modifications were made to the procedure in the late 1980s and it is now a less difficult operation to perform (and therefore safer), and one with a more durable weight loss. This was achieved by constructing the small gastric pouch down the lesser curve of the stomach (which is much less susceptible to enlargement) and placing a silastic ring around the pouch to delay its emptying and fix the effective outlet size (Fig. 2). The principal remaining reason for a disappointing outcome following this operation relates to a technical failure with partial staple-line disruption, which may occur in 10-20% of individuals over time. This may be overcome by performing gastric transection between staple lines, (either at the initial operation or at the time of revision surgery), thus completely isolating the lesser curve pouch from the remainder of the stomach (Fig. 3). These