Gastric bypass in adolescents: should they have priority?

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Title Five-year outcomes of gastric bypass in adolescents as compared with adults

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Summary

Twelve authors from 10 centres (nine US and one Australian) contributed patients to a study that evaluated outcomes and health effects of Roux-en-Y gastric bypass surgery for obesity at 5 years, comparing 161 adolescents with 396 adults.[1] Both groups lost around 25% of body weight, but the adolescents were significantly more likely (86%) to have remission of type 2 diabetes than were the adults (53%). Hypertension was also lower (68%) after surgery in the younger group than in adults (41%) (Inge et al. Figure 2[1]). Mortality over 5 years in both groups was just under 2%, although it must generate some concern that two of the three deaths in the adolescent group were related to polysubstance abuse. Abdominal re-operations were higher in the adolescent group, with nearly twice the rate per 500 person years (19.5) as in the adult group (10.3) (Inge et al. Table 1[1]). Ferritin levels were significantly lower and abdominal re-operation significantly higher in the adolescent group. Adults were recruited to the comparative group if between 25 and 50 years of age, and the adolescent group were recruited aged 19 years or less.

The low ferritin in the adolescent group was thought to be due to a combination of greater menstrual blood loss in adolescents (nearly 80% in both groups were female) and better adherence to mineral supplement regimens in adults. In discussion, the authors suggest that the higher rate of diabetes remission in adolescents may, in part, stem from an increased ability to recover islet cell secretory capacity. Evidence from previous studies quoted to support this was that, when type 2 diabetics are challenged by oral or intravenous glucose load, the resulting response of increased insulin secretion is greater in adolescents than in adults with recently diagnosed diabetes.[2]

The accompanying *New England Journal of Medicine* editorial draws attention to the fact that most obese adolescents remain obese in adulthood,[3] and that the medical outcomes for adult individuals who became obese in adolescence are worse than for those with adult-onset obesity.[4,5] The question is posed, therefore, as to whether bariatric surgery can wait until adulthood for this group of adolescents. Caution is exercised, however, in drawing a definitive conclusion for the long term.

Opinion

The findings of this study matter. In the USA, 6% of adolescents are severely obese.[6] Directly comparative figures are difficult to obtain, but in the UK, 4.2% of year 6 schoolchildren were defined as severely obese in 2017–18.[7] The only proven approach to sustained weight loss in severely obese adolescents is surgery. Quite apart from the impact of obesity on National Health Service costs, estimated at £5.1 billion in 2006–07,[8] the wider cost to society is estimated at £27 billion annually.[9]

Although the UK lags some 11% behind the USA in adult obesity prevalence,[10] UK prevalence rates are increasing at much the same rate, with similar associated morbidity,[11] therefore, extrapolation from the Inge et al.[1] study to the UK population does not seem unreasonable. Although laparoscopic adjustable gastric banding was the most popular procedure in the UK some 15 years ago (90% of all procedures 2002–06), 52% of procedures were accounted for by gastric bypass in 2014 and a further 26% underwent sleeve gastrectomy.[12] It is helpful to note that the surgical group undergoing sleeve gastrectomy are included in ongoing recruitment to the Teen-LABS study.

Bariatric surgery is now being performed in the UK in older patients, with greater body mass index and higher prevalence of diabetes.[13] It would be appropriate to consider the implications of this study on the most effective use of limited resource, particularly when considering long-term benefit. Not only should we implement effective interventions, from dietary

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education through advertising and commercial legislation to bariatric surgery, but we should focus on the right intervention for the right patient at the right time. This study lends weight to the argument that, for the severely obese adolescent who has developed diabetes and/or hypertension, there is now good evidence to offer early surgical intervention.

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