



Endoscopic sleeve gastropasty: is it time to prioritize minimally invasive interventions for the management of metabolic syndrome?

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Dear Editor,

Metabolic syndrome is a global health problem and a major public health priority^[1]. A recent burden of disease study estimated a prevalence of metabolic syndrome of 2.8% (~25.8 million) and 4.8% (~35.5 million) in children and adolescents, respectively. This prevalence was higher in low-income and middle-income countries in both groups, representing a serious problem for the medium-term and long-term cardiovascular health of future generations^[1]. In adults, another burden of disease study published in 2021 found that a population of 685,616 individuals globally had a prevalence of overweight, obesity, and diabetes mellitus of 27.2%, 21%, and 9.2%, respectively^[2]. Taking into account that diabetes and obesity are directly related to the development and complication of other cardiovascular risk factors, such as arterial hypertension and dyslipidemia, it can be deduced that the current prevalence of metabolic syndrome in adults is close to the percentage of its criteria and cardiovascular risk factors^[2]. Considering the advances in medical technologies and research in low-income and middle-income countries, and based on emerging evidence^[3,4], the use of bariatric surgery has been proposed as an option to resolve this condition^[5,6]. However, questions remain as to which technique offers the most benefit and is the safest, and specifically, in which subgroups?

Very recently, Abu Dayyeh *et al.*^[5] carried out a prospective multicenter controlled trial (MERIT trial), where they evaluated the efficacy and safety of endoscopic sleeve gastropasty for class 1 and 2 obesity, having as outcomes the percentage of excess

weight loss (defined as the extra weight, above the necessary to have a body mass index of 25 kg/m²) at week 52 postintervention. As secondary outcomes, the change in metabolic comorbidities was evaluated. Of 209 individuals studied [85 in the intervention group versus 124 in the control group (lifestyle modifications only)], an excess weight loss percentage of 49% versus 3.5% in the control group was evidenced ($P < 0.0001$), and an average total weight loss of 13.6% in the intervention group versus 0.8% in the control group ($P < 0.0001$). On the secondary outcome, it was found that 80% of the intervention group demonstrated an improvement in one or more of the metabolic risk factors versus 45% in the control group. At week 104, 68% of individuals in the intervention group maintained at least 25% of the excess weight loss. There were no deaths, no need for intervention, and only 3 patients presented adverse events. Thus, the authors concluded that endoscopic sleeve gastropasty proved to be a safe and effective intervention for the resolution or control of obesity and metabolic syndrome components^[5].

Supporting this hypothesis, in previous years, Khan *et al.*^[6] performed a meta-analysis of 12 studies with a total of 1149 individuals, where they compared the efficacy of endoscopic sleeve gastropasty, primary obesity surgery endolumenal, and AspireAssist. As outcomes, the percentage of excess weight loss and the percentage of total body weight loss were determined. It was found that at 6 and 12 months, the use of endoscopic sleeve gastropasty reduced to a greater extent both the percentage of excess weight loss (49.6 and 52.7%, respectively) and total body weight loss (16 and 17.4%, respectively), compared to primary obesity surgery endolumenal, where the excess weight loss at 6 and 12 months was 43.7 and 44.9%, respectively. However, the AspireAssist reduced 50.8% of excess weight at 12 months, being the intervention with the best performance at that cut-off point. This allowed the authors to conclude that both endoscopic sleeve gastropasty and AspireAssist have excellent performance at 6 and 12 months in terms of weight loss and weight maintenance^[6]. Thus, it can be seen that endoscopic sleeve gastropasty is effective and safe in the control of weight and risk factors for metabolic syndrome. Carr *et al.*^[7] conducted a study where they evaluated efficacy, safety and quality of life related to weight loss in endoscopic sleeve gastropasty ($n = 16$) versus laparoscopic sleeve gastropasty ($n = 45$), observing that at 12 months postintervention, laparoscopic gastropasty was superior in the reduction of excess body weight (79 versus 57%, $P < 0.001$) and in quality of life (48.1 versus 19.8%, $P < 0.05$). Both techniques significantly reduced some laboratory parameters, with endoscopic surgery having a greater impact on HbA1c (-0.5% , $P < 0.05$) and triglycerides (-0.6 mmol/l, $P < 0.05$). But between the two, laparoscopic surgery reduced fat-free mass more at 6 and

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12 months ($P < 0.05$). It should be noted that the difference in the frequency of adverse events between the two techniques was not significant (25% in endoscopic surgery versus 27% in laparoscopic surgery). Thus, it was concluded that both surgeries had excellent performance^[7]. Endoscopic surgery has even been evaluated in high-risk patients, contraindications for abdominal surgery and body mass index greater than 50 kg/m^2 , showing an effective performance in terms of BMI reduction, weight reduction, percentage of excessive and total weight loss, with a null rate of intraoperative complications and a very low frequency of moderate adverse events^[8].

Therefore, considering that it is increasingly feasible to replicate these techniques in countries with limited resources, a more resolute vision should be considered in terms of metabolic syndrome and cardiovascular risk, and surgery could be the first option, with complementary pharmacological therapy. In this way, it would be possible to reproduce endoscopic sleeve gastropasty, to achieve definitive results effectively, safely, and with a significant impact on the quality of life of patients. In order to achieve this, it is necessary to develop specialized surgical centers and a surgical research system that facilitates the follow-up and evaluation of outcomes in each social, clinical, and demographic context^[9]. Similarly, the training of surgeons and aspiring surgeons in these techniques should be encouraged^[10] to help control the obesity pandemic, which generates a greater burden of disease in third-world countries and is unsustainable for health systems today.

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