Obesity

Benefits of Bariatric Surgery Prior to SARS-CoV-2 Infection in Modulating the Response to COVID-19

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As of October 2020, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), responsible for coronavirus disease 2019 (COVID-19), has infected more than 39 million individuals and killed more than 1 million people worldwide. (https://coronavirus.jhu.edu/map.html, accessed October 1, 2020). Obesity and its complications are linked to severe forms of COVID-19, favoring an increased hospitalization and mortality rate (1). Despite being the gold standard for the treatment of selected individuals with severe obesity, there is scarce information on whether bariatric surgery modifies the prognosis of people living with obesity in the current COVID-19 pandemic. Bel Lassen and colleagues (2) have carried out the first study with a high number of patients in their sample, bringing light into this area of uncertainty. The authors provide evidence of the importance of diabetes itself as a risk factor for severe COVID-19.

The study describes the prevalence of symptom-based likelihood of COVID-19 (CL group) with a retrospective comparison of the characteristics at baseline and at 1 year post procedure in a survey-based analysis of 738 patients who had bariatric surgery prior to the pandemic. Symptoms suggesting COVID-19 occurred in 62 (8.4%) patients while, at the time of the survey, a global estimation reported an estimated prevalence of COVID-19 cases of 9.9% (3). Four among the sixty-two patients (6.4%) had severe COVID-19 requiring hospitalization, and one of them (1.6%) died, which means that even with a similar symptomatic infection rate, mortality was significantly below that observed in patients with obesity not treated with surgery (4). The mechanisms potentially underlying this effect are unknown but may be multifactorial.

Interestingly, the COVID-19–likely (CL) group exhibited two major differences with the group of patients who experienced no symptoms suggesting SARS-CoV-2 infection. On the one hand, the CL group had a higher proportion of persistent type 2 diabetes at the last follow-up. On the other hand, the CL group presented a lower BMI at the time of lockdown, with a higher percentage of weight loss since surgery. Severe forms of COVID-19 requiring hospitalization were associated with persistent type 2 diabetes at the last follow-up visit. This fact may add argument to the independent risk factor relevance of diabetes itself in association with COVID-19 severity. A second factor was the lower BMI observed in the CL group, which seems counterintuitive. Although no experimental evidence has been gathered in this line, patients with functional malnutrition post surgery may be at higher risk for severe COVID-19. Functional malnutrition is most frequently observed in patients who are lost to follow-up, thereby stressing the importance of long-term care following bariatric surgery.

Prospective studies are difficult to design and perform; thus, in the absence of class 1A evidence, this retrospective study supports that having undergone bariatric surgery prior to COVID-19 and the subsequent improved glycemic control seem to protect people living with obesity from more severe COVID-19. In this context, additional factors will need to be investigated as plausible beneficial effects of bariatric surgery, including direct or indirect postoperative immunomodulatory actions that might counteract the immunological derangements observed in severe obesity (5) and the crucial role of nutritional follow-up after surgery.

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