Early Benefits From Weight-Loss Surgery

The carefully conducted study by the Oxford group (1) reports beneficial effects of weight loss after 2 nonpharmacological interventions, diet or bariatric surgery. In case of the latter, we have made similar observations except at a much earlier time point (2). Three months after bariatric surgery for clinically severe obesity (body mass index 47 kg/m²), visceral fat mass (but not subcutaneous fat), glucose homeostasis, and left ventricular diastolic function had already normalized (2). More importantly, there was a dramatic decline in serum leptin levels, a decrease in muscle fat, and a massive decrease in transcript levels of enzymes in the pathway of muscle lipid partitioning (3). Our observations, together with those of Rider et al. (1), suggest that the effects of weight-loss surgery on cardiac function and systemic metabolism are either hormonally or centrally regulated.

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Reply

We are pleased that Dr. Taegtmeyer and colleagues found our report of interest (1). We recognize that the beneficial changes in cardiovascular function and metabolism that were seen to follow bariatric surgery in the study conducted by the Texas group were similar to those seen in our study, and they occurred at an earlier time point. The changes in our study occurred in the absence of significant cardiovascular risk factors, including insulin resistance, whereas the Texas group study enrolled consecutive patients undergoing bariatric surgery (2). Both studies underscore the potential importance of leptin in the regulation of cardiovascular function and cardiac hypertrophy. Clearly, the concept proposed in the letter (i.e., that the effects of weight loss surgery on cardiac function and systemic metabolism are either hormonally or centrally regulated) is an interesting one that merits further evaluation. Although the Texas group have shown very early changes, we are currently seeking to gain further insight into the long-term regulation of the cardiovascular system by examining the changes in cardiovascular function after a more prolonged weight loss of several years and the effects of weight re-gain in individuals unable to keep their body mass index low.

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