



Reproductive Function Abnormalities and Bariatric Surgery: Is a Matter of Time?

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A growing interest has raised the role of bariatric surgery in obesity-related reproductive function abnormalities. Considering the high prevalence of these disturbances in subjects suffering from obesity [1], efforts in this research area may present a relevant clinical impact. To this regard, we have read with great interest the study of Christ and Falcone recently published [2]. The authors described the impact of bariatric surgery on reproductive and metabolic features in female patients with polycystic ovary syndrome (PCOS). In their cohort of patients, they observed a high prevalence of clinical parameters of PCOS, such as polycystic ovary morphology, hyperandrogenism, and irregular menses, which was reduced, except for ovary volume, after surgery. They also observed postoperatively a concomitant improvement of some cardio-metabolic risk factors, irrespective of baseline BMI but potentially predicted by ovary volume and free testosterone levels. However, these effects were shown not to be universal in those patients, and the authors hypothesized the existence of unifying mechanisms to explain the lack of overall benefits.

These results are consistent with other evidence showing occasionally a limited efficacy, or a loss of efficacy over time, of bariatric surgery in restoring reproductive abnormalities and improving metabolic profile in similar patients [3, 4]. To this regard, we would point out that, as already suggested for diabetes [5], a possible predictor for the remission after surgery of associated sexual and metabolic complications may be represented, more than by the severity, by the duration of reproductive dysfunction. In

fact, a complex interaction seems to link adipose tissue, gonadal function and metabolic homeostasis, and male and female reproductive system alterations, in most cases resulting from abnormal androgen levels which are of opposite sense between two sexes (hyperandrogenism in women, low testosterone in men), are strictly associated with the development of insulin resistance and the risk of metabolic diseases. It is possible that a longer duration of these conditions may be responsible for deeper abnormalities of the reproductive system and even metabolism, and it may account for the limited effect of surgery sometimes observed in these patients. The most of available studies about the argument do not consider the time from diagnosis of reproductive function abnormalities. Future works could take it into consideration, pointing to define if an early diagnosis of these disturbances in subjects at risk, and then an early indication to surgery for these patients, may be associated with higher rates of remission. In addition, further reports should be collected to better explain the bidirectional correlation between sexual dysfunctions, obesity, and metabolic diseases, and to identify mechanisms responsible for their association as future therapeutic targets.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no competing interests.

Human and Animal Rights and Informed Consent This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent Informed consent does not apply to the submission.

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