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LETTER TO THE EDITOR

Risk Factors for Postoperative Complications After Abdominal Panniculectomy and the Contribution of Plastic Surgeons on Reconstruction Following Massive Weight Loss

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We read with great interest the manuscript entitled "Advanced age is a risk factor for complications following abdominal panniculectomy" by Cammarata et al. [1]. We would like to congratulate the authors on their work, which, for a second time, offers results using a high level of evidence-based medicine (level II) from a large database, following the publication of results by Winocour et al. [2]. These two studies, which included 7030 and 25,478 patients, respectively, greatly improved our knowledge of the risk factors for complications following panniculectomy. The authors aimed to evaluate the impact of advanced age (65 years or older) on the occurrence of postoperative complications following body-contouring surgery.

We wish to discuss a few points related to this article and provide some insight based on our own experience in order to develop a future preoperative score that could guide the surgeon in making an operative decision. This study allows the risk factors for postoperative complications after abdominoplasty to be better identified. The authors demonstrated that advanced age is a risk factor for postoperative complications and confirmed the findings of Winocour et al., who investigated patients over the age of 55 years. Until the publication of these two important studies, advanced age was difficult to identify as a postoperative complication risk factor because of the lack of statistical power [3, 4]. However, selecting the best candidates for body-contouring surgery in those aged over 65 years will be one of the main challenges in the future, as will the management of obesity in the elderly. Very interesting results regarding functional status are reported, but we wonder whether the authors could have provided any information on the nutritional status of the older people in their study, as this could dramatically increase the postoperative risk of complications. Clinical tools to select the best candidates and identify frail patients—like those routinely used in geriatric oncology—are urgently needed with respect to the growing demand for reconstructive surgery in the elderly. As perfectly illustrated by this study, older patients are at an increased risk of diabetes, coronary disease, arterial hypertension, chronic obstructive pulmonary disease, and bleeding disorders and consequently require appropriate care.

Interestingly, diabetes has also been identified as an independent risk factor for postoperative complications. In body-contouring surgery, only a few reports have corroborated this result [5]. However, the largest report, from the Cosmet Assure database (25,478 patients), did not draw the same conclusions. In order to partially explain these results, it should be noted that only major complications requiring hospital readmission, reoperation, or emergency room visits were recorded in the database and all minor complications such as wound-healing problems, which represent the greatest number of complications during the course of abdominoplasty, were excluded. Obviously "diabetes degree" and "diabetes balance" could have led to bias when recognizing the risk factors. Consequently, diabetes should be carefully screened and rebalanced before any operative decision is made in order to optimize the postoperative outcome.

In our opinion, this axis of research must ultimately allow for the creation of an easy-to-perform score, such as the logistic EuroSCORE in cardiac surgery, in order to define the individual risk of complications for each patient based on the

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number of preoperative risk factors. This would assist the surgeon when making an operative decision. Moreover, these data may enable the tailoring of information offered to the patient during the consultation and reduce the medico-legal consequences in case of complications.

Another important point to emphasize is the specialty of the surgical team that carries out the reconstruction. In this study, the plastic surgery team performed most of the panniculectomies. Even specialized and well-trained teams were not identified as independent risk factors for postoperative complications or length of hospital stay. However, it would be interesting to know if there is any difference between plastic and general surgeons on these two parameters in univariate analysis. In this study, older patients mainly underwent surgery by a general surgeon (< 0.001) and this fact clearly illustrates the difficulties, depending on the establishment or country, in recruiting sufficient plastic surgeons to operate on this specific subpopulation. Unfortunately, in addition to older age, plastic surgeons in a number of centers adhere to a strict body mass index < 25 or < 30 kg/m^2 (often unrealistic goals) when performing abdominal lower-trunk contouring in the general population. However, this strict cut-off excludes a non-negligible number of patients and compels the bariatric surgeon to carry out postbariatric reconstruction. Moreover, plastic surgeons can lend their expertise to these complex patients, especially in terms of circumferential lower-trunk reconstruction and the use of a combined approach with liposuction. First, the lower-body lift seems more suitable than abdominoplasty for patients presenting with global excess skin. Indeed, abdominoplasty does not correct flanks or gluteal ptosis, which are often present after massive weight loss. Second, the use of liposuction in combination with body-contouring surgery should be taken into account. This technique avoids undermining by performing extensive liposuction and skin removal just under the dermis. Recently, we published encouraging results [6] for this method transposed to circumferential lower-trunk reconstruction. In fact, liposuction has the advantage of partially preserving the anatomy [7, 8] and probably the physiology of the remaining tissue if the connective tissue is preserved by skin resection just underneath the dermis.

In conclusion, we thank the authors for their contribution to postbariatric surgery reconstruction and for improving our knowledge of the predictive factors for postoperative complications. We believe that plastic surgeons must increase their contribution to the reconstruction of this complex subpopulation. The development of studies comparing combined procedures with classical reconstructions, which are probably safer than traditional undermining, could present a great opportunity. Another track would be the development of algorithms to provide a personalized technique adapted to the risk of postoperative complications in order to optimize outcomes.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflicts of interest.

Ethical Approval Statement Formal consent is not required for this type of study.

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