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Staying Safe during Gluteal Fat Transplantation

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DISCLOSURE

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Staying Safe during Gluteal Fat Transplantation

Sir:

We commend Dr. Villanueva and colleagues for their Cosmetic article “Staying Safe during Gluteal Fat Transplantation” published in the January of 2018 issue of the *Journal*.¹ This outstanding panel of leaders in plastic surgery recommended proper patient selection, favorable instrumentation, correct patient positioning, proper technique (i.e., continual motion and knowledge of cannula location at all times), and adequate knowledge of anatomy (i.e., superficial planes of injection and avoidance of excessively high recipient-site pressure) as ways of avoiding fat embolism in fat grafting gluteal augmentation.¹ The worldwide ever-increasing number of procedures performed, associated with the rate of fatalities related to fat embolism (which is the highest in the field of aesthetic surgery), demonstrate the tremendous relevance of this article.^{1–4} Indeed, as the authors observe in their article, surgeons with a large number of cases did not observe this complication, suggesting that faithful adherence to the above-mentioned key points is pivotal for guaranteeing safety.^{1,5}

In our recent comprehensive review of the literature, which included 52 studies of the international literature published from 1969 through 2015, we analyzed 7834 patients treated with five different techniques (i.e., gluteal augmentation with implants, autologous fat grafting, local flaps, local tissue rearrangement, and hyaluronic acid gel injections), 2609 of whom underwent fat transplantation.³ Fat embolism occurred in four cases (0.2 percent), and led to death in one of these (0.04 percent), in line with the data reported by the Aesthetic Surgery Education and Research Foundation Task Force, which estimated an annual mortality rate of one in 3448 cases (0.03 percent).^{2,3}

However, there are several very important advantages offered by autologous fat grafting gluteal augmentation. Indeed, very interestingly, it showed the overall lowest rate of complications (10.5 percent), considerably lower than the other two alternative most performed techniques, namely gluteal augmentation with implants (30.5 percent) and gluteal augmentation with local flap (22 percent).³

Moreover, the complications in case of gluteal augmentation with fat grafting were mainly minor and temporary, and included seroma of the donor site (3.1 percent), hyperemia/erythema (1.6 percent), liponecrosis (0.7 percent), major/minor irregularities (0.7 percent), cellulitis (0.5 percent), and asymmetry (0.4 percent), leading to reoperation for an unpleasing result in 0.9 percent of cases.³ Importantly, with reference to the need for

avoiding sciatic nerve injuries, we observed sciatic nerve symptoms in 14 of the 4781 patients treated with gluteal augmentation with implants equal to the 0.3 percent, whereas only one case of bilateral sciatic nerve axonotmesis was reported with fat grafting (0.04 percent).³

Finally, gluteal augmentation with fat grafting is the ideal technique for reshaping the gluteal region according to universal (waist-to-hip ratio) and ethnic-specific beauty ideals.^{3,6} This can be achieved with liposuction of the waist and lower back associated with augmentation of the lateral third of the buttock, which is impossible in case of implant-based gluteal augmentation.^{3,6} As a conclusion, if we will be able to minimize fat embolism by following the precious recommendations contained in the article by Villanueva et al., we will also be able to safely offer our patients a procedure that in many regards has proven to be ideal for gluteal augmentation in the hands of an experienced board-certified plastic surgeon.

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Reply: Staying Safe during Gluteal Fat Transplantation

Sir:

We thank Dr. Oranges and colleagues for their interest and Letter to the Editor regarding our article “Staying Safe during Gluteal Fat Transplantation.”¹ We commend them for their publication and agree with their findings.² There are various advantages when performing gluteal fat transplantation when compared to other gluteal augmentation procedures, but lowering the current mortality rate associated with this procedure is imperative. The majority of the complications associated with gluteal fat transplantation are minor and temporary when the procedure is performed correctly. Our recommendation is to remain superficial within the subcutaneous plane throughout the gluteal augmentation procedure. The sciatic nerve injuries that are related to this procedure are likely attributable to either direct injury with cannulas or secondary-compression, high-fat-graft pressures in the subgluteal compartment.³ Gluteal fat transplantation only into the subcutaneous plane may further improve the safety profile of this procedure, as there is no opportunity for damage to intragluteal vessels or the sciatic nerve, directly or indirectly from subgluteal compartment pressure. Dr. Del Vecchio recently presented at the 52nd Annual Baker Gordon Symposium and will soon publish our findings from a cadaveric study that has demonstrated that any injection below the muscular fascia can lead to deep intramuscular migration of the fat, which leads the transplanted fat to deposit directly over the gluteal vessels and sciatic nerve submuscularly.^{4,5} Deep intramuscular migration therefore increases the danger profile of any intramuscular injection and should be avoided.

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