

## Volume 142, Number 4 • Letters

Correspondence to Dr. Rohrich  
Dallas Plastic Surgery Institute  
9101 North Central Expressway, Suite 600  
Dallas, Texas 75231  
rod.rohrich@dpsi.org

**DISCLOSURE**

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**Staying Safe during Gluteal Fat Transplantation**

**Sir:**

The safety of gluteal fat grafting is a debated topic.<sup>1</sup> Gluteal lipoinjection is an effective means of buttock augmentation; however, the procedure is not without risks.<sup>2,3</sup> Adipose tissue is prothrombotic, and some patients are at risk of thrombosis because of genetics or other diseases such as venous insufficiency.<sup>4</sup> Furthermore, fat tissue injection in the gluteal region is associated with mortality caused by macroscopic and microscopic fat embolism.<sup>5</sup>

We read with great interest the article from Villanueva et al. entitled “Staying Safe during Gluteal Fat Transplantation.”<sup>1</sup> The authors identify important aspects for safely performing gluteal fat transplantation: proper patient selection, favorable instrumentation, patient positioning, proper technique, and knowledge of anatomy. The authors believe that the most dangerous part of this procedure is inadvertent injection into the deep medial gluteal region. They identify a danger triangle in buttock augmentation: the superior point is the posterior superior iliac spine, the lateral point is the greater trochanter, and the inferior point is the ischial tuberosity. Deep injection within this area increases the risk of vascular or sciatic injury.

Therefore, this procedure should be performed very carefully, avoiding gluteal vessel damage caused by injections into deep muscle planes.<sup>3,5</sup> Staying on a superficial plane (subcutaneous plane, if possible) is safer.

Ramos-Gallardo et al. recently published an article on the same subject, entitled “Prevention of Fat Embolism in Fat Injection for Gluteal Augmentation, Anatomic Study in Fresh Cadavers.”<sup>4</sup> Ten dissections were performed in five fresh cadavers, and each buttock was divided into four quadrants. They focused on the location where the gluteal vessels enter the muscle and the diameter of the vessels. They evaluated the relation between colorant injected at different angles (30 and 45 degrees) and the main vessels. They concluded that a 30-degree angle of injection can decrease the chances of damage to the vessels. A 45-degree angle of injection, to better approach the muscle, can create contact with the vessels and the sciatic nerve. An angle of injection of more than 45 degrees can create contact between the fat and the sciatic nerve and represents a potential risk of damaging major vessels. Furthermore, risk areas of fat embolism during fat injection were medial quadrants of each buttock, where superior gluteal vessels and the inferior gluteal vessels are located.<sup>4</sup> In our opinion, this finding is in accordance with the dangerous triangle highlighted by Villanueva et al., and one should consider this during gluteal augmentation with fat graft.

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**Andrea Sisti, M.D.**

**Edoardo Pica Alfieri, M.D.**

**Giuseppe Nisi, M.D.**

Division of Plastic and Reconstructive Surgery  
Department of Medicine, Surgery and Neuroscience  
University Hospital “Santa Maria alle Scotte”  
University of Siena  
Siena, Italy

Correspondence to Dr. Pica Alfieri  
Division of Plastic and Reconstructive Surgery  
Department of Medicine, Surgery and Neuroscience  
University Hospital “Santa Maria alle Scotte”  
University of Siena  
Viale Bracci 16  
Siena 53100, Italy  
edoardo.picaalfieri@gmail.com

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## Reply: Staying Safe during Gluteal Fat Transplantation

Sir:

We thank Dr. Sisti and colleagues for their interest and Letter to the Editor regarding our article “Staying Safe during Gluteal Fat Transplantation.”<sup>1</sup> We agree that their findings and those in the study by Ramos-Gallardo et al. are in accordance with the safety triangle we have highlighted as the zone of greatest potential danger, where the major gluteal vessels and sciatic nerve are found.<sup>2</sup> Within the safety triangle, it is imperative that fat transplantation occurs in the subcutaneous plane. However, our recommendation is to remain superficial within the subcutaneous plane throughout the gluteal augmentation procedure. Therefore, the angle of approach to the gluteal muscle is not pertinent because the angle should be selected to completely avoid injection into the gluteal muscle. Gluteal fat transplantation into the subcutaneous plane only may improve the safety profile of this procedure, as there is no opportunity for damage to intragluteal vessels. Furthermore, Dr. Del Vecchio recently presented at the 52nd Annual Baker Gordon Symposium and will soon publish our findings in a cadaveric study demonstrating 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.<sup>3</sup> Deep intramuscular migration therefore increases the danger profile of any intramuscular injection regardless of angle and should therefore be avoided.

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**Nathaniel L. Villanueva, M.D.**

Department of Plastic Surgery  
University of Texas Southwestern Medical Center  
Dallas, Texas

**Daniel A. Del Vecchio, M.D.**

Back Bay Plastic Surgery  
Boston, Mass.

**Paul N. Afrooz, M.D.**

**Rod J. Rohrich, M.D.**  
Dallas Plastic Surgery Institute  
Dallas, Texas

Correspondence to Dr. Rohrich  
Dallas Plastic Surgery Institute  
9101 North Central Expressway, Suite 600  
Dallas, Texas 75231  
rod.rohrich@dpsi.org

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## Lower Body Lift in the Massive Weight Loss Patient: A New Classification and Algorithm for Gluteal Augmentation

Sir:

**W**e read with great interest the article entitled “Lower Body Lift in the Massive Weight Loss Patient: A New Classification and Algorithm for Gluteal Augmentation” by Schmitt et al.<sup>1</sup> We congratulate the authors for their excellent work, as few research teams have characterized subgroups of patients who could benefit from appropriate buttocks augmentation. Their work describes a surgical algorithm that will be useful for our daily practice; our team previously tried to subcategorize patients<sup>2</sup> with massive weight loss, but our classification proved inaccurate for the buttocks. In our classification, gluteal augmentation may be performed for type I patients, corresponding to types I to III according to Schmitt et al.

We would like to discuss some issues that were not addressed by Schmitt et al. First, for gluteal augmentation, we use a simple and fast technique for achieving moderate augmentation without using flaps, implants, or lipofilling. We increase buttock projection by moving the central buttock tissues in an outer to inner direction, on both sides, by means of suturing the inferior edge of the scar at a point 4 to 5 cm from the upper edge.<sup>3</sup> This could be applied to patient types I to III under the classification of Schmitt et al., but especially