

Response to “Comments on ‘A Simple Device for Syringe-to-Syringe Transfer During Lipofilling’”

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We thank you for allowing us to respond to the interesting comments by Dr Rauso¹ regarding our article “A Simple Device for Syringe-to-Syringe Transfer During Lipofilling.”² A number of techniques have been developed and tested to achieve the highest viability of adipocytes from lipoaspirate, and all authors agree about the need to perform the most “fat-friendly” and atraumatic procedures during manipulation and injection of the fat itself. Nevertheless, there is not level I evidence on the best harvesting and processing technique; the mechanism of fat-graft survival is not clear and multicenter trials and a database are needed to determine actual survival rates.³ After reviewing the literature, it is evident that there are many factors implicated in fat-graft survival, including harvesting technique, centrifugation, wash/treatments, fat processing, and graft injection. In recent years, many surgeons have adapted specialized strategies for each of these steps, but unfortunately, outcomes from fat grafting still remain unpredictable.⁴

In his letter, Dr Rauso states to have used a plastic stopcock for syringe-to-syringe fat transfer and has observed that the percentage of fat resorption was substantially higher for patients treated with the plastic device than with the traditional metal system. He mainly interprets this result as a consequence of the greater trauma induced by the passage of the fat through the device with a 90° angle. Adipocytes are relatively resistant to the forces of positive and negative pressure and even though quite susceptible to the effects of shear stress, special consideration should be made for the variety of factors that play a significant role in affecting shear stress and fat-grafting viability, such as viscosity, concentration, cannula length, diameter and fissures, flow rate, and certain additives.⁵

We believe no significant greater trauma occurs with the 3-way stopcock, because the fat is actually simultaneously

and gently transferred straight and laterally, without a need for higher positive injection pressure nor modification in flow rate or catheter size.

Traditional handheld syringe liposuction is performed by withdrawing approximately 1 to 2 mL of fat in a 10-mL syringe. This procedure is purported to be atraumatic as a result of low suction pressure, however even trying to respect all of the “fat friendly” criteria, fat grafting remains unpredictable because survival of transplanted fat can be highly variable.⁶ In any case, we think that the passage of adipocytes through a 90° angle cannot be advocated as the main reason for a higher cell resorption after autologous fat transplantation, especially considering that the most gentle aspiration through any cannula is actually always performed through an angle of 90°.

In our experience, there is no evidence of higher fat resorption when comparing the clinical outcomes obtained with the 2 systems. We truly think that an objective analysis would be useful to definitely assess the viability of transplanted fat cells between the 2 lipotransfer systems, but unfortunately even literature in this field is not clear and still replete of studies with subjective photographic analysis or anecdotal reports. Although a blinded, randomized, controlled clinical trial would be ideal, we believe results could still remain unpredictable due to the multiple ongoing variables. Therefore,

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due to the lack of objective analyses, we think that an exact comparison on the viability of transplanted fat cells between these 2 transfer systems was not possible, although desirable. Rather, we can only hypothesize how 1 device would affect long-term fat-graft survival by eventually evaluating the clinical outcome. Future improvements might be made to improve fat collection and refinement systems, to provide more control over flow, and to develop customized instruments to further reduce trauma.

Disclosures

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