

ORIGINAL ARTICLE

# Platelet-Rich Plasma (PRP) Utilized To Promote Greater Graft Volume Retention in Autologous Fat Grafting

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**Objectives:** Autologous fat theoretically provides one of the most ideal mediums for soft-tissue augmentation and reconstruction, although its clinical applications have been marked with skepticism because of its documented unreliable survival. Over the years, numerous unsuccessful efforts have set forth to elucidate modifications in the application process of autologous fat grafts to allow the medium greater clinical predictability. This study aims to investigate the effects of platelet-rich plasma (PRP) on autologous fat grafts when used in conjunction with each other in soft tissue augmentation and reconstruction.

**Study Design:** Retrospective review, over a 30-month period, of consecutive patients with results greater than 6 months in duration.

**Methods:** This study is based on clinical experiences representing 2033 grafts in 448 consecutive patients using PRP additives and in the previous 132 patients who had syringe harvest without use of PRP. All PRP isolates were harvested via the Smart Prep system. Harvest and augmentation techniques are discussed and representative results are presented.

**Results:** Results were based on clinical observations and patient satisfaction. Of the 580 patients in the experimental group, essentially all showed greater graft volume retention over extended time intervals compared with control subjects (nongraft areas). Patients in the PRP-added experimental group displayed less postoperative ecchymosis and edema, which also led to greater patient satisfaction in this group.

**Conclusion:** Adding PRP to autologous fat aids in graft

volume retention and survival when used clinically for soft-tissue augmentation and reconstruction.

The selection of autologous graft materials is widely accepted as one of the most fundamental mediums for use in most soft-tissue augmentation and reconstruction dilemmas. It provides a very versatile augmentation medium for cosmetic and reconstructive surgeons. Adipose tissue provides a readily available, autologous graft medium for which use in human autotransplantation has been documented for more than a century.<sup>1,2</sup> Autologous fat affords a medium that is soft, pliable, and readily available in abundant stores; can be harvested with minimal morbidity; has low antigenicity; and lacks risk of disease transmission.<sup>2,3-5</sup> In light of the aforementioned benefits, the use of autologous fat as a graft medium has been fraught with skepticism by the cosmetic surgery community. This skepticism lies in the relatively inconsistent and unpredictable survival rates of autologous fat grafts to date. These results frequently necessitate the need for overcorrection of soft-tissue volume defects and increase the possibility of multiple procedures to achieve the desired volume of augmentation and symmetry. Because of these unpredictable outcomes, many studies have focused on modifying various parts of this procedure to achieve greater graft survival rates.<sup>6,7</sup> Several studies have sought to modify and standardize the harvest procedures,