

PURPOSE: New information on adipocyte derived stem and regenerative cells as well as progress in the understanding of the effects of fat harvest, processing and delivery on cell viability have permitted simple standardization of conventional fat grafting. Moreover, the rationale for large volume enhancement in facial aesthetic surgery, it's indications and the simple steps of using the **Facial Component Analysis Scale** and **Zone Placement Technique** preserves a large vascularize surface area to enhance graft take.

MATERIALS AND METHODS: 50 consecutive patients undergoing modified SMAS facelift in conjunction with large volume fat transfer using either a lipodialysis processing technique for conventional fat transfer or a laboratory device capable of separating ADRC's to be combined with fat for cell enriched fat transfer (CEFT) were retrospectively reviewed (IRB protocol monitored by Sharp Healthcare, San Diego, CA) as a cohort to determine the average volume of fat injected, the frequency of adverse events, an estimate of fat retention up to one year follow up and a general assessment of aesthetic results and patient satisfaction.

RESULTS: The Facial Component Analysis Scale was applied in all cases. A placement zone concept was developed to permit maximum vascularized surface area to optimize fat graft survival. The average amount of fat injected was 45 ml (range 25-80 ml). Adverse events related to fat grafting included expected ecchymosis, prolonged edema and mild lumpiness in the eyelid cheek junction. There was one case of partial flap loss in the right post-auricular region and this healed uneventfully. There were no serious complications. A number of modifications in both the facelift technique and the points of entry for fat delivery were needed and will be reported. Patient satisfaction was generally good and the vast majority had nice aesthetic improvement. Fat loss ranged from 10% to 90%.

CONCLUSIONS: A simple standardized procedure for diagnostic treatment planning followed by harvest, processing and delivery of structural fat grafts is demonstrated. Preliminary results seem to favor improved survival for CEFT over conventional fat grafting, but a randomized prospective study is necessary. Older patients may not do as well in terms of fat survival. From our preliminary experience, prospective, randomized, evidenced based studies are being developed to determine any benefits of CEFT.