



Subcutaneous and Intradermal Cellular Adipofilling of The Face and Neck: Our Technique of Preparation, Transfer, and Preservation of Fat

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INTRODUCTION

To reduce the size of the lipoaspirate, microcannulas, filters, centrifugation, etc. are used. These techniques are slow and damage the adipocytes, which are important to the success of volumetric and regenerative procedures. We designed and tested a technique called Adipofilling. This enables us to create a suspension of lobular fragments in a few seconds (**Figure 1**) and, in less than 30 seconds, to produce a suspension of living adipose and stromal cells (**Figure 2**). The quality and quantity of these suspensions meet the needs of our aesthetic and reconstructive procedures.

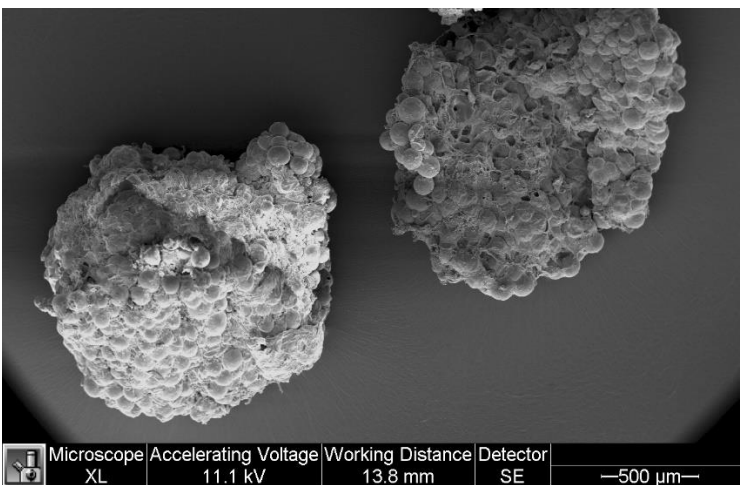


Figure 1 Scanning Electron Microscopy (SEM) lobular fragments, created by the suction vortex in six seconds.

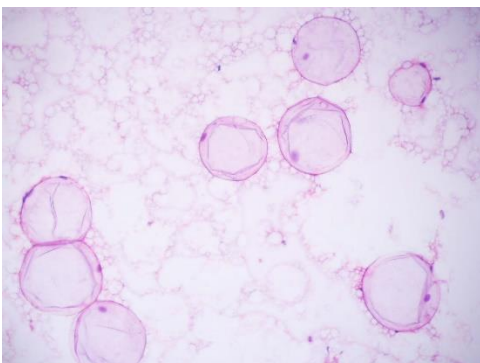


Figure 2: Smear of the cellular suspension created by the suction vortex in 30 seconds.

SURGICAL TECHNIQUE

The aspirated fat is separated by a suction vortex by an economical, disposable, battery-driven device (Adipopimer, Korpo SRL) (**Figure 3**). The particle size varies from small lobular fragments to single cells. These suspensions are used for subcutaneous volumetric enhancement and intradermal regeneration and will not freeze at storage temperatures (-30°C/-81°C).

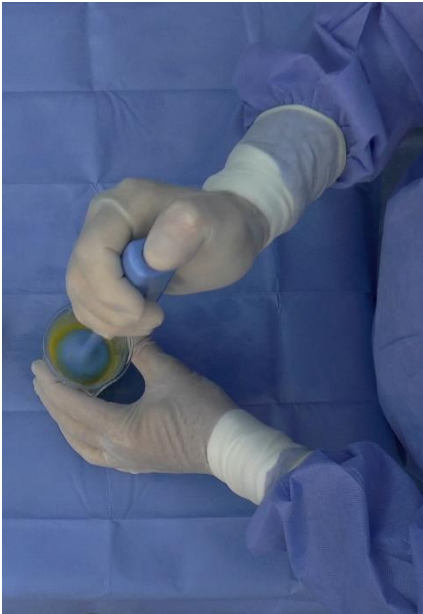


Figure 3: The suction vortex of Adipopimer separates the aspirated fat into small lobular fragments or adipose and stromal cells.

Local anesthesia

The tumescent local anesthetic is a modified Klein solution of Mepivacaine.

Liposuction

Liposuction is carried out through a 4 mm diameter cannula. Large-calibre cannulas with large holes minimize the damage to the cells that is caused by friction and maintain the integrity of the lobules.

Washing lipoaspirate in a flask with a tap

Washing must continue until the liquid becomes clear and transparent. This method of washing is economical and quick.

Preparation for lobular fragmentation and cell separation

The lipoaspirate is poured into a beaker. A volume of lactate ringer or saline solution three times greater than that of the fat must also be poured into the beaker. For the suction vortex to work properly, the biological material must have enough space to separate without being damaged. The cathelicidin of adipocytes prevents any infection.

Separation of the lipoaspirate with the Adipopimer

The Adipopimer is equipped with a stabilized ceramic (Y-TZP) blade of 1/3 mm thickness, which rotates at 133.3 revolutions per second.

RESULTS

The volumetric results of Adipofilling are clearly visible even after a single treatment (**Figures 4-7**). The cell suspension injected into the dermis rapidly regenerates aged and scarred skin.

CONCLUSION

Adipofilling enables defects, volume deficits, and aged skin of the face and neck to be efficaciously corrected. The procedure is rapid. When used in combination with other minimally invasive techniques (Elastic Lifting), it helps to achieve rejuvenation that meets biological criteria.



Figure 4: Subcutaneous Adipofilling of a rare bilateral facial atrophy. The result five years after completion of three Adipofilling sessions.



Figure 5: Upper lip wrinkles. Intradermal cellular Adipofilling. Stable result after one year.



Figure 6: Neck wrinkles and skin elastosis. Intradermal cellular Adipofilling. Stable result.



Figure 7: Outcome of facial acne scars. After a single session of subcutaneous and intradermal cellular Adipofilling.

Footnotes:

1. Adipofilling Methods Video Journals, <https://www.crpublishing.com/adipofilling.html>