



Adipocyte grafting: Clinicals, technicals and psychiatric aspects

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ABSTRACT

Adipocyte or autologous transplantation of adipose tissue is a filling means the use for aesthetic purposes dates back several decades. Since the 19th Century, the technique of adipocyte graft has taken several steps, and its indications have ceased to grow. Currently, it is an indispensable tool applied to all areas of cosmetic surgery. The authors propose a review of the history, technique and indications. The apparent simplicity of the technique must never forget the rigor in the indication, technique and the interest of clear and complete information to patients.

Keywords : Adipocyte-fat graft-filling

INTRODUCTION

Adipocyte graft or autologous adipose tissue has been practiced for a hundred years. Since then, multiple denominations and techniques have emerged to meet increasingly growing demands of management of facial aging, its physical and psychological consequences. The description of the liposculpture SR Coleman is currently the benchmark grafting technique fat and recovery volumes of the face. It is an essential tool applied to all areas of plastic surgery. We offer a review of the history, techniques and indications of adipocyte graft.

History:

The evolution of ideas on adipocyte fatty tissue transplantation can be divided into three periods (1):

- The open pit period before liposuction:

Neuber in 1853 used adipose tissue beads to a loss of the face material. This technique was rediscovered by Elenbogen in 1986.

Eric Lexer Peer in 1922 and in 1950 have demonstrated the survival of fat tissue graft at one year (2).

- The unpurified said period using the gross levy liposuction as a filler and practiced in the early eighties by YGillouz then by stone Fournier (2). The latter named his lipostructure or filling technique.

- The third period corresponds to the description of SRColeman in 1991 of its said technical lipostructure where atraumatic purification is carried out before transfer of adipose tissue.

Cytology and Histology:

Cytologic studies of the fat before and after centrifugation showed it has excellent morphological preservation with a majority of adipocytes and limited conjunctiva frame.

They suggest the survival of cells of the tissue centrifuged in their recipient site after reinjection (2). Currently two theories support the vitality of adipose tissue (3):

- Substitution Theory: histiocytes host recover lipid material and replace fatty tissue.
- Cell survival theory: part of the grafted tissue survives and undergoes another inflammatory reaction.

Factors influencing the survival were studied by several authors (4).

MATERIALS AND METHODS

Sampling:

The first step is the infiltration of sampling site chosen in consultation with the patient. It is made xylocaine adrenaline through a cannula, preferably foam to avoid trauma inherent in the needle (fig.1A).

The syringe plunger is slowly withdrawn and then blocked by the operator's fingers allowing a gradual depression. The amount to be taken depends on the volume of the recipient area.

A rigorous technique allows sampling to collect greasy fragments intact. The suction should be soft avoiding excessive depression which can damage the fatty cylinders (fig.1B).

Centrifugation:

After unscrewing the sampling nozzle, the syringe is closed by a cap and placed in a sterile cup of the centrifuge (Fig.1C). The latter is started (at 7000 rev / min) for 04 min.

At the end of centrifugation, the sample is separated into three layers (Fig.1d):

- Superficial: yellow oily corresponding to destroyed adipose fragments.
- Deep red haematic, made of blood, serum and infiltration of product.
- Middle: a dense layer made of fat cylinders that will be injected into the recipient site.

Is removed both oily layers and sero-hematic, fatty cylinders will be transferred into syringes January-March ml avoiding positive pressure (fig.1E).

The investment in the recipient site:

This is placing fat grafts in their nutritional beds. Ideally, the deposit must be linear with maximum contact between the graft and the recipient bed to prevent necrosis, resorption and calcifications of the injected fat. Avoid pushing the syringe.

The investment plan shall, as appropriate, subcutaneous, plus fascial or even in contact with the muscle or periosteum.

The amount to be injected depends on the volume to be restored. On a correction of 10 to 15% is generally recommended.

It should be noted that there are some varieties of fat grafting techniques with especially injection at 20 day intervals of fatty tissue stored at - 30 ° C.

Indications:

The fat graft is a great way for the restoration of volumes.

We can represent the signs:

- Indications for aesthetic purposes:
 - Ageing: the fat graft is a good complement in the head and neck facelifts to restore the outlines, fill nasolabial folds and glabellar region.
 - Congenital facial asymmetries or posttraumatic. This is the case Pany-Romberg Barraquer-Simmons syndrome.
 - The after-effects of acne with atrophic scars.
 - Increasing the volume of lips.
- Other information:

- The hand surgery: especially in paralysis with atrophy of the medial ulnar thénariennes lodges and hypo-thenariennes.
- Breast reconstruction: some authors have proposed the use of the technique Coleman to reconstruct the mammary gland (5).
- In Urology: to increase the volume of the penis.

Complications:

- The postoperative edema: it is the most common complication (8%). (6)

It is traumatic when graft placement, hence the importance of a rigorous technique. Its presence can distort and alter the contours immediate results.

Patients should be informed.

- The bruises and hematomas may occur thus promoting the absorption of the fat graft.
- The defect correction are always as recoverable by another fat grafting session.
- The hypercorrections: given the inevitable reversal of a portion of the fat grafting, most authors advise overcorrection of 10 to 15%. Beyond the aesthetic result may deteriorate and treatment of such over-correction is difficult.

Other complications have been described with the conventional techniques before the development of Coleman's technique.

This is in particular the possibility of fat embolism with fatty moiety injection blindness in facial vessels or the superficial temporal arteries.

CONCLUSION

Basal cell carcinoma is a common tumor in our skies; the involvement of the face is a poor prognostic factor for recurrence, exposed to heavy aesthetic and functional damages. The improved results through:

- the prevention (anti-sun protection, public information)
- dépistage early lesions (collaboration GPs) providing the patient with greater chances of cure with minimal sequelae.
- the development of technical platforms of pathology centers.
- the creation of consultative committees bringing together multi -disciplinaire: -chirurgiens dermatologists plastic surgeons, pathologists and oncologists for loads with difficult cases.

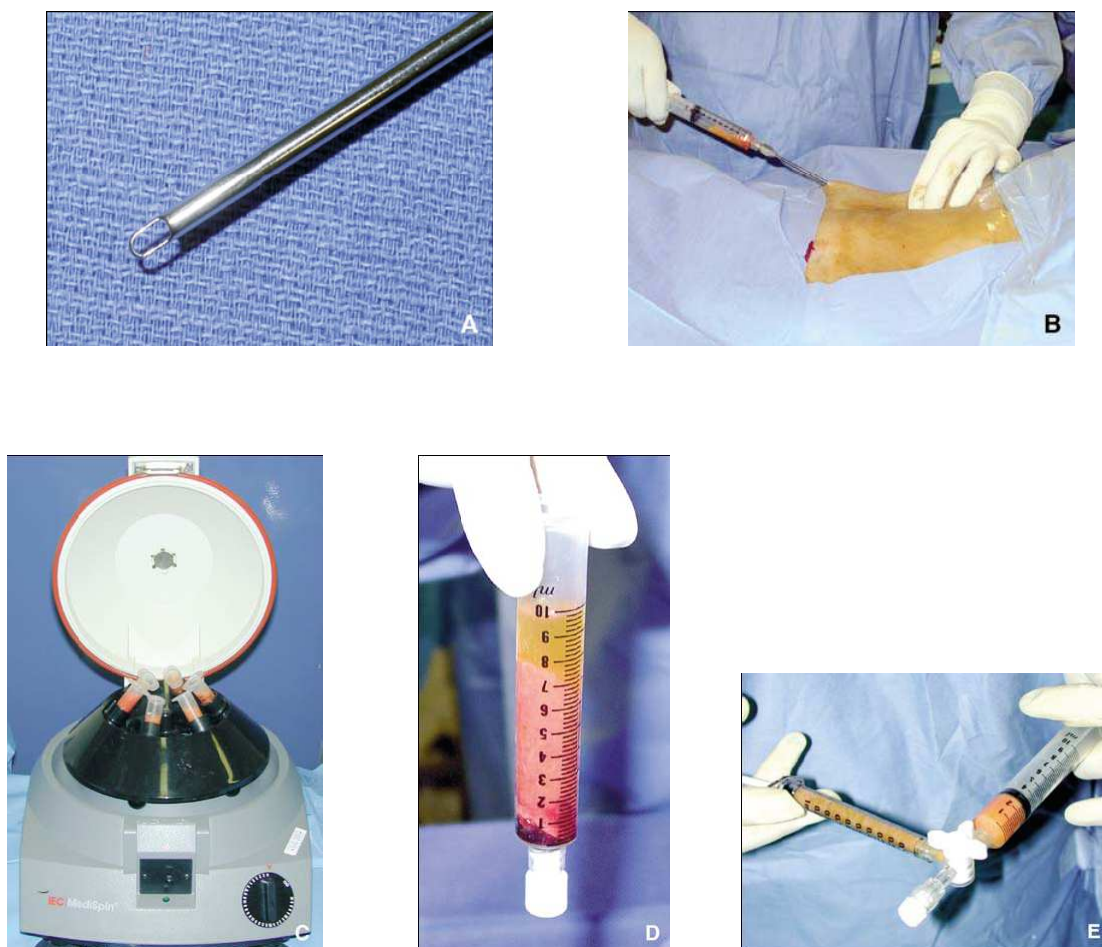


Figure 1 (Photo Mojallal (5)): Material use in adipocyte grafting technique

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