A new method for obtaining autologous dermal graft for tissue filler techniques

ABSTRACT
Several types of synthetic filler materials have been made available in recent years. However, autologous substances can still be considered more advantageous and secure. The author developed a collector that makes it easy to quickly obtain an autologous dermis already de-epithelized and he also describes the surgical instrument and details of its use.

INTRODUCTION
Tissue filler techniques have become very popular in the past few years and many types of substances are currently used to correct facial contour defects. The use of autologous dermal grafts to correct facial defects was first proposed in the beginning of the last century.1,2 Thereafter, many other studies have demonstrated the value of dermal grafts as tissue fillers.3,4,5,6 Most of the authors agree about the advantages of dermal grafts over synthetic, heterologous or allogenic tissues, including histocompatibility, long-term viability, resistance to infections and versatility. However, despite its efficacy, dermal grafts have yet to achieve widespread acceptance, mainly because of the scar that is produced at the donor site, the formation of an epithelial cyst, and also the relative difficulty in harvesting and implantation. In recent years, the most commonly used harvesting techniques have included the removal of an ellipse from the donor site followed by de-epithelization,7,11 in situ de-epithelization by dermabrasion,8,12 by a high-energy short-pulse laser,9 or by scalpel dissection,10 followed by dissection of the dermis with a scalpel. The most common donor sites used are the lower or suprapubic abdomen, the groin crease, the presacral region, the buttock, and the retroauricular region. In this paper, a method is described for harvesting an already de-epithelized dermis cylinder, through the use of a surgical instrument developed by the author.

Technique
The dermal collector developed by the author consists of a cylindrical surgical instrument, with a cutting edge at the free extremity, from which protrudes a ridge with 3 centimeters of length, ending at the other extremity in a piece of solid metal that functions as a handle (Figure 1). Para-vertebral areas from dorsal or lumbar regions were chosen as donor sites because the dermis is thick, there is a lack of coarse hair follicles in most cases, and there are no large caliber blood vessels. The patients were positioned in ventral decubitus, the procedure’s area was demarcated with a dermatographic pen and a solution consisting of 0.5% lidocaine with epinephrine (1:100.000) was injected. Then, a 3 mm incision was made using a n°
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11 blade in one of the extremities of the demarcated area, through which the dermal collector was introduced. With the skin pinched by the surgeon’s fingers, the dermal collector was progressed by semi-circular movements parallel to the skin, and subjacent to the epidermis, until it reached the other extremity of the demarcated area. At that point, another small no. 11 blade incision was made, yielding an already de-epithelialized cylindrical fragment of dermis (Figure 2). Finally, the dermal collector was pulled back, and the incisions were closed with only one or two no. 4.0 mononylon suture knots.

The dermal grafts can be used in filler techniques to augment nasolabial, mental and glabellar creases, lips, depressed surgical scars, areas of lipoatrophy, and other soft tissue defects. We have already successfully treated approximately 50 patients with this technique, including nasolabial augmentation (Figure 3), broad undulating acne scars, labiomental creases, lipoatrophy caused by lupus erythematosus, and depressed surgical scars following grafts. The harvesting of autologous dermal grafts through the use of the dermal collector developed by the author confers considerable speed to the technique, when compared to other methods published to date. For example, up to 30 dermal discs to be used in the filling of acne scars can be produced in just a few minutes. Besides, the scar produced at the donor site is minimum and acceptable, and the dermal tissue is already obtained with no epidermis, avoiding cyst formation in the receptor area.

**REFERENCES**