UDPS

UP DATE IN PLASTIC SURGERY

EDITOR in CHIEF
Ruben Oddenino

THE FABULOUS 6
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The Syrian Association for Aesthetic Reconstructive & Burn Surgery
SSPRASC Southern Society of Plastic Reconstructive Aesthetic Surgery and Cosmetology
CPSU Club of Plastic Surgeons of Ukraine
ESPRS The Egyptian Society of Plastic and Reconstructive Surgeons

ASSECE EUROPEAN ASSOCIATION OF AESTHETIC SURGERY

SCRIPTA MANENT EDIZIONI

UPDATE IN PLASTIC SURGERY

Editorial

Caro Socio,
in questo ultimo numero del 2016 sono fiero di dare l'annuncio che la nostra rivista, nel 2017, diventerà trimestrale (un numero in più rispetto al passato).
Invito tutti voi a inviarci i vostri lavori scientifici e i vostri case report per rendere sempre più attuale e completa la nostra rivista.

In questo numero è presente una piccola selezione di lavori pubblicati in passato.
La dimostrazione della qualità e la cura professionale che i nostri soci mettono con passione nel loro lavoro quotidiano.
Voglio ringraziare tutti i soci per l'impegno profuso in questi anni e rinnovo il mio impegno per darvi sempre una rivista moderna, precisa che rappresenti un punto fermo per l'informazione e la crescita della nostra professione.

Dear Member,
in this last number of 2016 I am proud to announce that in 2017, our magazine, will become quarterly (one issue more than before).
I invite all of you to send us your scientific papers and your case reports to make our magazine more and more current and complete.
In this issue there is a brief selection of papers published in the past. It is the demonstration of the quality and professional care that our members put in their daily work.
I want to thank all members for their efforts in these years, and I renew my commitment to always give you a modern magazine, that represents a milestone for the information and the growth of our profession.

L'Editor
Ruben Oddenino

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2008

Lipofilling to treat periprosthesic capsular contraction after augmentation mammaplasty.

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Summary

Lipofilling to treat periprosthesic capsular contraction after augmentation mammaplasty.

Over the last few years, autologous adipose tissue transfers have been widely used to treat breast defects over the last few years as means of restoring volume after mastectomy or lumpectomy, or correcting breast hypoplasia and asymmetry.
Since 2005, we have used purified adipose tissue together with partial capsulectomy to treat capsular contraction in patients experiencing severe capsular contraction (Baker grade III-IV) and rippling after breast augmentation with moderate to severe breast firmness and/or distortion, and/or implant displacement and discomfort (more frequent after revision than after primary augmentation).
In this study authors explain the surgical technique with purified adipose tissue, partial capsulectomy and breast implant replacement that was used to treat capsular contraction in 14 patients.
Considerable improvement was observed after a follow-up of one year, which shows that this simple, efficient and reproducible technique leads to good results and prevents or diminishes the risk of severe capsular contraction, particularly after reoperation.

Key words: *Periprosthesic capsular contraction, Breast augmentation, Lipostructure, Capsulectomy, breast implant replacement.*

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INTRODUCTION

Breast augmentation procedures have a number of delayed complications, of which the five most frequent are capsular contracture, implant rupture, implant malpositioning, infection, and implant rippling. The problems associated with the first and most common complication is directly due to the form and surface of the implant: the first- and second-generation breast implants (particular the smooth types) led to very high rates of capsular contraction, which decreased after the market introduction of texturised implants. The latest-generation implants have improved surface porosity and uniformity, which are critical factors in the development of contracture[1].
The induction of periprosthetic tissue reaction is constant and due to the natural foreign body reaction; however, when the reaction is too aggressive, it leads to increased thickness and firmness.
The best known clinical classification system of capsular contracture in breast augmentation is that of Baker, who divided the anomalies into four grades of firmness and evolution[2]:

Grade I: The breast in normally smooth and looks natural. No palpable capsule

Grade II: The breast is a little firm but appears natural. The breast is less soft, and the implant may be palpable but not visible

Grade III: The breast is firm and beginning to appear distorted in shape; the implant can be palpated easily

Grade IV: The breast is hard, painful, tender, cool, and looks abnormal.

Histologically, capsular contracture normally shows hypertrophic circumferential linear fibrosis with myofibroblast involvement.

The precise etiology of capsular contracture remains unknown, but some causes have been suggested[3-4]:

- *Hematoma and/or seroma*. In order to prevent these complication, it is important to control any bleeding that occurs during surgical dissection and wash the pocket with cold irrigation saline to remove blood stains from sub-tissues.
- *Silicon gel bleed*. This is less likely with the latest generation of breast implants because the gel is more cohesive.
- *Infection*. Immediately adjacent to the implant shell, it is possible to observe a chronic subclinical infection within a microscopic biofilm that is inaccessible to cellular and humoral immune function[5]. The risk of bacterial contamination of breast implants can be reduced by correctly handling them, and by using broad-spectrum prophylactic antibiotic treatments during and after surgery.
- *Glove powder on the implant shell*. In order to to avoid this problem, the gloves should be washed with sterile saline solution before touching the implants.
- *Other foreign bodies* such as lint or dust and, particularly, povidone-iodine particles.

One of the hypotheses is to control capsular contracture pharmacologically by means of immunomodulation as recent evidence indicates that the leukotriene receptor antagonists used to treat asthma, such as zafirlukast (*Accolate*) and montelukast (*Singulair*) may prevent and reverse its induction and formation[6].
It is also important to stress that capsular contracture is a risk factor for implant rupture, and the most frequent reason for repeat surgery.

RATE OF CAPSULAR CONTRACTION

A precise picture of the rate of capsular contracture can be obtained from two important ongoing studies by Inamed and Mentor, the two largest producers of breast implants for both aesthetic and reconstructive breast surgery. The Allergan Core Study (ACS) involved 715 patients (including 455 primary and 147 revision augmentation patients), and the *Mentor Core Study* (MCS) involved 1007 (including 551 primary and 146 revision augmentation patients). Both are 10-year studies designed to assess safety, effectiveness and revision in augmentation mammoplasty, with postoperative follow-up visits scheduled after four weeks, six, 12 and 24 months, and then annually for ten years.
The interim results are very interesting as they indicate that capsular contracture occurs more frequently after revision than after primary augmentation. Among the women receiving breast implants for the first time, the risk of severe capsular contracture (Baker grades III-IV) was 13.2% in ACS after four years, and 8% in MCS after three years, whereas the corresponding figures among the women undergoing a reoperation were respectively 17% and 19%. It is also important to underline the fact that 39/135 patients who underwent repeat surgery in ACS, and 40/109 in MCS, did so because of capsular contracture after their first operation.
We have therefore revised our own informed consent documents in such a way as to highlight the greater risk of capsular contraction in the case of secondary augmentation mammoplasty, which is important for legal purposes.

MATERIALS AND METHODS

Since 2005, we have used purified adipose tissue together with partial capsulectomy to treat capsular contraction in patients experiencing severe capsular contraction (Baker grade III-IV) after breast augmentation with moderate to severe breast firmness and/or distortion, and/or implant displacement and discomfort[7] (Figs. 1 and 2).
In 2005 and 2006, we performed breast augmentation procedures in 106 women, 12 of whom developed severe capsular contraction (Baker grade III-IV) and were candidates for implant replacement and purified adipose tissue to prevent capsular contraction. The exclusion criteria included the development of capsular contraction during the first eight postoperative months, prosthesis rupture and total capsulectomy, submuscular pocket,

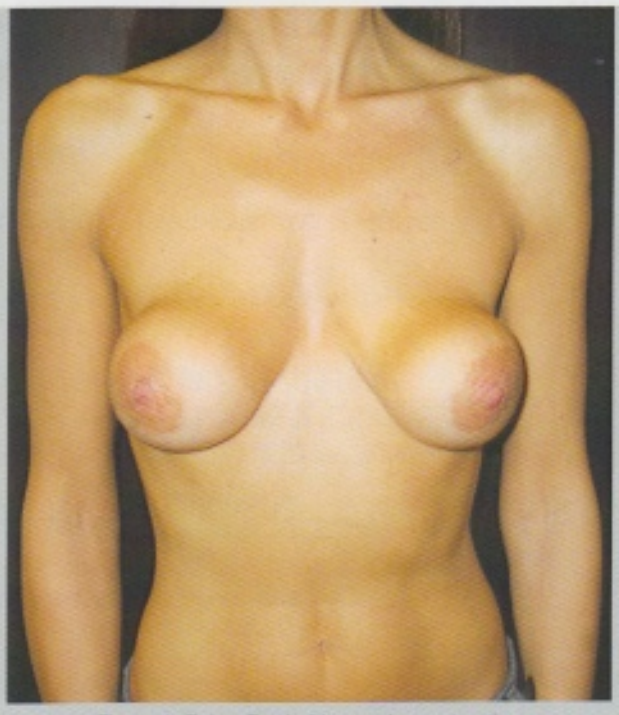

Figure 1. Baker Grade IV capsular contraction.

Figure 2. Periprosthetic capsule.

Figure 3. Partial capsulectomy.

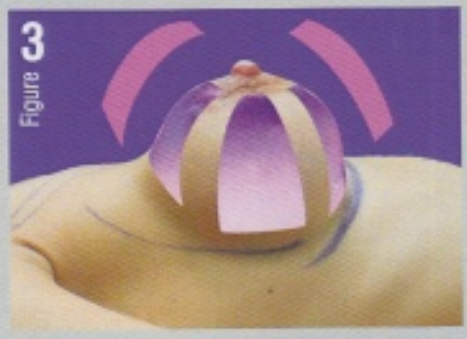

Figure 4.
Intact capsular flaps in which purified autologous adipose tissue is injected (between each capsular layer and the breast parenchyma).