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# Techniques in Cosmetic Surgery

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## Subfascial Breast Implant: A New Procedure

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Breast augmentation techniques using the submuscular and subglandular planes to introduce the implant are well known and widely used procedures. The authors have been using the subfascial dissection plane, a new concept for breast augmentation. From October of 1998 to September of 2001, 263 patients underwent breast augmentation. In all cases, the implants were inserted into the subfascial plane. McGhan 410 anatomic biodimensional, cohesive gel implants (size, 155 to 310 g) were used. There are additional benefits using this technique; these include avoiding implant deformation or distortion (as seen in the retromuscular position), leaving additional soft tissue between the implant and the skin, and minimizing implant edge prominence (inherent to retroglandular placement). These technical details lead to fewer patient complaints. Morbidity is similar to that of other techniques. (*Plast. Reconstr. Surg.* 111: 904, 2003.)

Since the initial use of prostheses for breast augmentation, surgeons have been seeking the proper plane into which the implant might be placed.<sup>1-9</sup> The original site behind the gland resulted in implant edge visibility, especially in thin women, and was thought to result in a higher incidence of fibrous capsular contractions than the later retropectoral plane. Despite the advantage of concealing the implant border, some surgeons thought that implant distortion occurred with contraction of the muscle. Our use of the retrofascial plane seems to yield the benefits of both planes without the deficits.<sup>10</sup>

The purpose of the present study was to demonstrate a new pocket for the mammary implant (Figs. 1 and 2). The development of the subfascial technique brings a new concept in shaping the breast in an effort to create a more natural appearance.

### ANATOMY

The breast is essentially a skin appendage contained within layers of the superficial fascia. The superficial layer of this fascia is near the dermis and is not distinct from it. The deep layer of the superficial fascia is more distinct and is identifiable on the deep surface of the breast when the breast is elevated in a subglandular augmentation mammoplasty. There is loose areolar tissue between the deep layer of the superficial fascia and the fascia that covers the pectoralis major<sup>11</sup> that continues to cover the adjacent rectus abdominis, serratus anterior, and external oblique muscles. This fascia has its origin on the clavicle and sternum, extending toward the lateral border of the muscle to form the axillary fascia. It continues down to cover the latissimus dorsi muscle. The deep fascia covering the lower aspect of the pectoralis major muscle is well defined, as is the fascia of the serratus anterior muscle. This deep fascia is continuous with the fascia of the external oblique and rectus abdominis muscles. The upper portions of the external oblique and rectus abdominis muscles and their overlying fascia are beneath the lower portion of the breast. The digitations of origin of the external oblique muscle are associated with the lateral inferior fibers of the pectoralis major muscle and laterally with the serratus anterior muscular digitations.

### PATIENTS AND METHODS

Since 1998, 263 patients with hypomastia have undergone aesthetic breast augmentation in which both inframammary incisions were placed below the sulcus and transaxillary endo-

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FIG. 1. Anatomy of the breast, comprising adipose tissue, superficial pectoral fascia, and pectoral muscle.

scopic approaches were used. In patients with postpartum breast atrophy with skin flaccidity, a periareolar incision was used to remove skin excess.

The inframammary sulcus is marked with the patient in the upright position, and a neosulcus line parallel to the sulcus is drawn 2 cm below it. The area to be undermined is delineated. Epidural block associated with sedation is the preferred option for anesthesia; the arms are abducted 90 degrees, and the dorsum is slightly elevated. The dissection area is infiltrated with epinephrine (1:500,000), using an average of 100 cc in each side.

#### *Axillary Approach*

The axillary incisions are placed in a natural crease, or S shape, 1 cm posterior to the pectoralis major muscle border and are 4 cm in length. Careful dissection exposes the lateral border of the pectoralis muscle, where the fascia is incised and the plane between the pectoralis muscle and the superficial pectoralis fascia is undermined by blunt dissection. Then

by videoendoscopy, the subfascial pocket is created. In the cephalic portion, the fascia is more defined and resistant. Its inferior portion is thinner and more friable. This undermining should be done very carefully to avoid fascia rupture and to try to keep fascia in the roof and muscle below. If there is doubt about the plane, some muscle fibers may be left attached to the fascia. The limits for blunt dissection are the third intercostal space superiorly, 1.5 cm from the midline medially, 7 cm below the areola, the original inframammary fold or 1.5 cm below it inferiorly, and the anterior axillary line laterally (Fig. 3). Once the dissection is completed, a careful evaluation for bleeding is performed, and the implant is placed.

#### *Submammary Approach*

A 4-cm incision is made in the proposed inframammary fold, laterally from the medial breast line, and the skin and subcutaneous tissue are incised. When the thin fascia is visualized, it is incised, and the subfascial pocket is undermined as described above.

#### *Periareolar Approach*

In patients with slight ptosis or with downward displacement of the nipple-areola com-

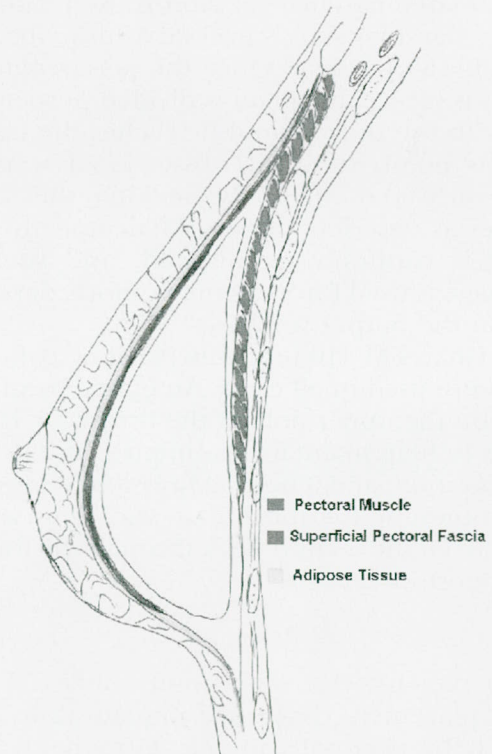


FIG. 2. Anatomical position of the subfascial implant, below the adipose tissue and the superficial pectoral fascia and above the pectoral muscle.



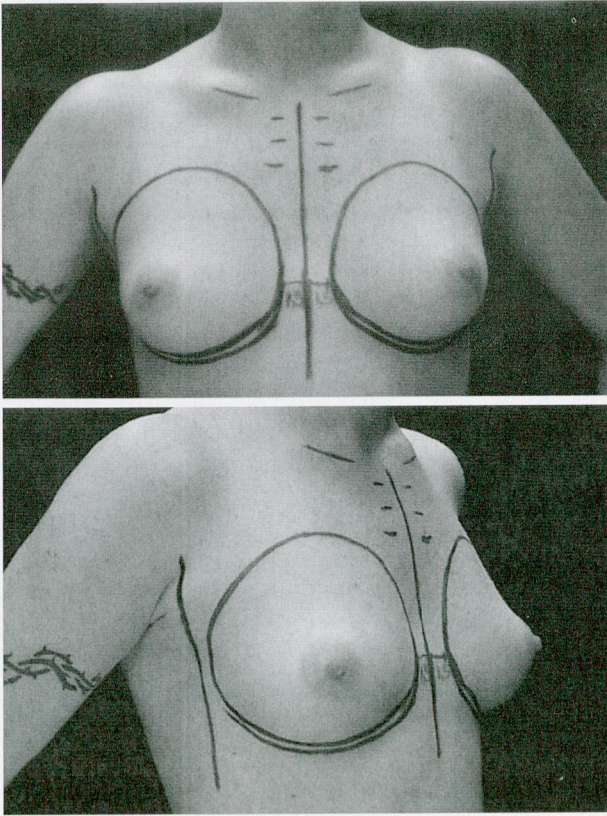


FIG. 3. Limits of the subfascial pocket.

plex, a circumareolar incision is used, and excess periareolar skin is excised as described by Benelli<sup>12</sup> and Goes.<sup>13</sup> Once the periareolar incision is made, the gland is divided perpendicularly to the thorax until it reaches the fascia. At this point, subfascial dissection is carried superiorly and inferiorly, making the same pocket as described above. Meticulous hemostasis is routinely maintained, and suction drainage is used for 24 hours or more, depending on the output volume.

McGhan FM 410 implants (silicone cohesive gel) were used in all cases. An elastic band was used on the upper pole of the breast for 1 or 2 weeks to help maintain the implant in the correct position, and a normal brassiere was worn. Physiotherapy for the breast and arms is applied from the second week through the fourth week postoperatively.

#### RESULTS

No patient who underwent subfascial implant placement developed implant distortion caused by pectoralis muscle movement. The implant edges were not noticeable, even in the larger implants (310 g).

There were six patients (2.3 percent) with

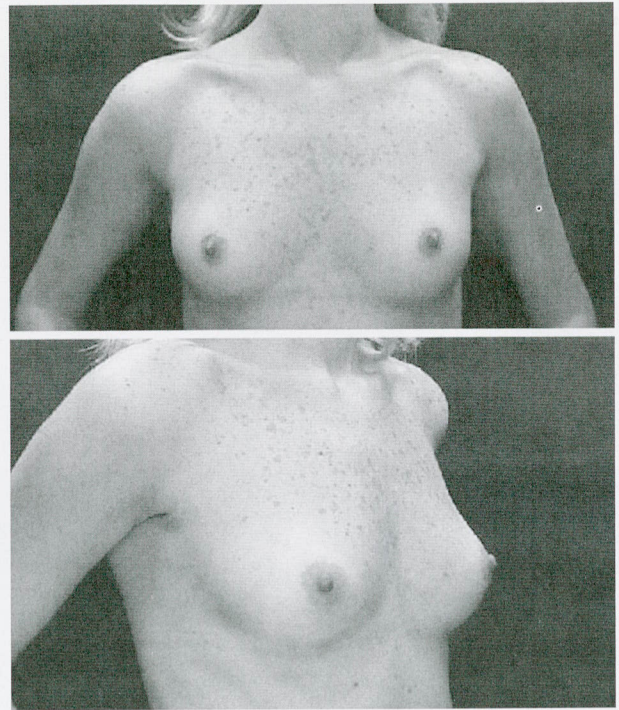


FIG. 4. A 23-year-old patient with mammary hypoplasia.

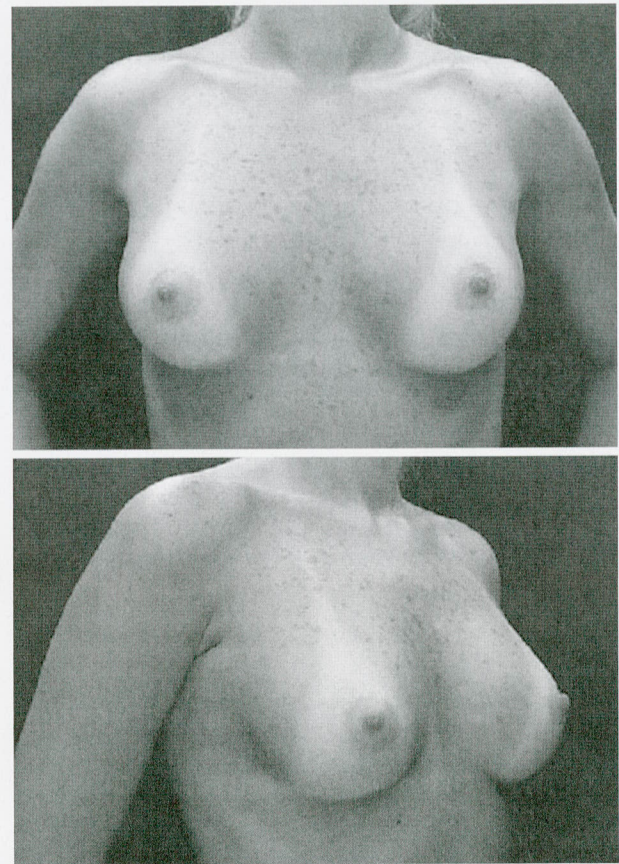


FIG. 5. Same patient as in Figure 4, 2 years after use of the transaxillary incision and subfascial implant.



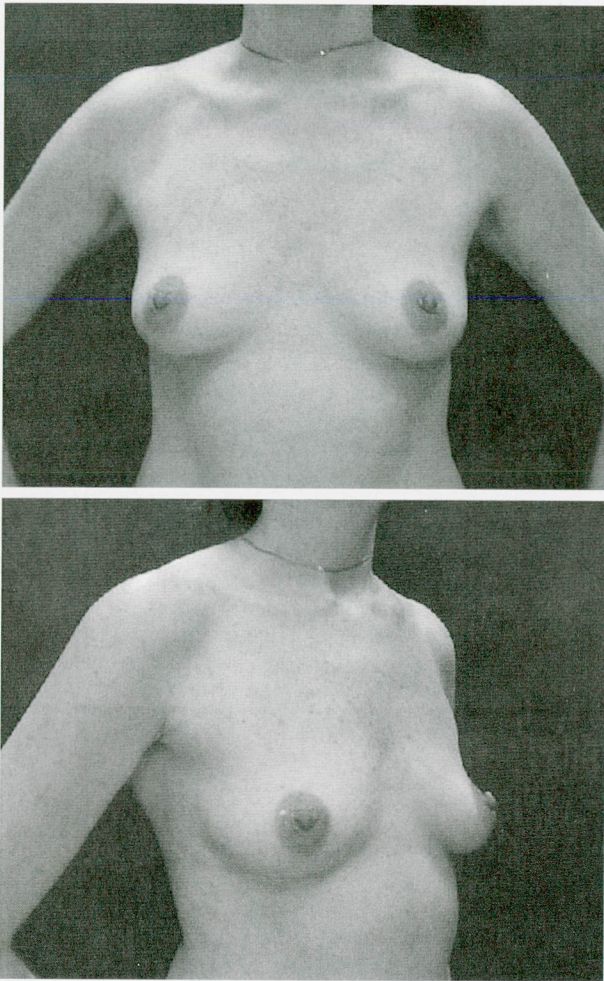


FIG. 6. A 36-year-old patient with breast flaccidity and hypotrophy.

class II capsular contracture (Baker); three patients (1.1 percent) had unilateral hematoma and required surgical intervention; and eight patients (3 percent) had unilateral implant malposition and demanded surgical intervention for repositioning. There were no infections. All patients returned to normal activities in 7 days.

The different approaches did not modify the final result, and we used transaxillary access in the majority of the cases.

#### DISCUSSION

Because the pectoralis muscle fascia is a well-defined structure and very consistent in the upper thorax, it can be used to minimize the appearance of the edges of the implant on the skin, making them less noticeable. In the subfascial location, shape distortion caused by muscular contraction does not occur, thus the consequences of displacement because of mus-

cular movement are avoided. There is additional soft tissue between the implant and skin, which also improved mammary glandular tissue resistance in the upper pole and led to a less noticeable implant edge. The incisions at the submammary fold and at the transaxillary cave maintain the integrity of the fascia, and with the periareolar approach, the longitudinal incision in the fascia does not weaken that structure.

Efforts were made to prevent all other complications common to augmentation mammoplasty. We found the subfascial pocket to be a desirable alternative in managing capsular contracture similar to that seen with submuscular implants.

#### CONCLUSIONS

The subfascial breast implant is a new alternative for augmentation mammoplasty. It provides a good shape and a natural result and improves patient satisfaction. The main reason for using the implant in the subfascial space is that allows soft-tissue coverage of the superior pole of the implant without the downside of raising the muscle (Fig. 4 through 7).

We have 17 years of experience with ret-

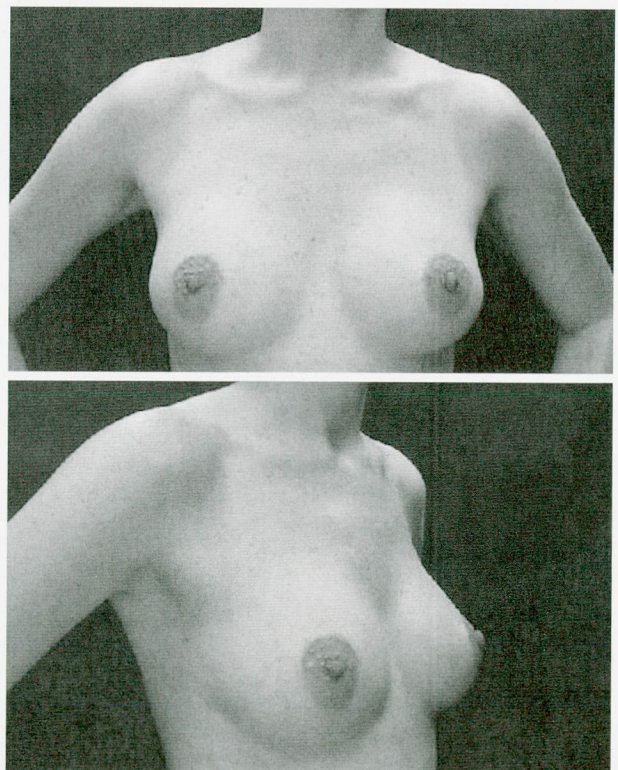


FIG. 7. Same patient as in Figure 6, 1 year after a superior periareolar incision.



roglandular and retropectoral placements, and we are pleased with the results of subfascial placement, which we have used for the last 3 years. Long-term evaluation will be necessary, but this new technique of implant placement seems to be an excellent option in the search for better results.

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