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Subfascial Endoscopic Transaxillary Augmentation Mammaplasty

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Abstract. Video endoscopy for breast hypoplasia and glabellar frown lines has been used since 1996 at our private clinic. Breast augmentation with an S-shape incision for transaxillary access is utilized to introduce the implant, in a submuscular or subglandular and, recently (since October 1998), in a subfascial location. From August 1998 through January 1999, 62 patients underwent endoscopic surgeries; 49 were submuscular, 5 subglandular, and 8 subfascial. McGhan 410, anatomical biodimensional implants 155 to 235 g, were used. We observed three cases of complications, two of them malpositioning (rotation), needing reoperation, and one hematoma, treated with drainage. Patient satisfaction was high, especially regarding the axillary incision. There have been no capsular contractions to date.

Key words: Mastoplasty—Endoscopy—Mammary surgery

Transaxillary breast augmentation presents many advantages over other techniques [5,7,12]. Its mainstay is the absence of a scar on the breast. The rationale for placing the implant submuscularly, and recently subfascially, is to reduce the incidence of capsular contraction in the late postoperative period and to avoid areolar sensation disturbances [1,9,10,13,15].

The use of endoscopic magnifying lenses and video amplifies the images and gives a better visualization of tissues and planes, allowing more precise dissection and hemostasis while using only a small axillary incision [3,6,9]. This technique is not indicated for moderate and severe ptosis.

Breast endoscopic surgery was first described in, and has been used since, 1987, for internal capsulotomy and to evaluate mammary implants [2,4,8].

In 1993 Johnson and Christ [17] first described the video endoscopic approach in transumbelical breast augmentation, and in the same year Laurence Ho published his experience with transaxillary endoscopic augmentation [6]. In 1994 Price et al. reported endoscopic transaxillary subpectoral breast augmentation with good aesthetic results and no complications [11].

Materials and Methods

Sixty-two patients underwent transaxillary endoscopic breast augmentation, from August 1996 through January 1999; 49 were located in the subpectoral plane, 5 were subglandular, and 8 were subfascial. The ages varied from 15 to 48 years. Textured, biodimensional, high-cohesivity silicon gel, McGhan 410 implants, sizes 155 through 235 g, were used.

The inframammary sulcus was demarcated with the patient in the upright position, and 2 cm below the neosulcus line, parallel to the original sulcus, another line was placed. The area to be undermined was delineated. These procedures were done under general anesthesia, with the arms abducted to 90° and the dorsum elevated slightly. The incision was marked in the axillary cavus, with an "S"-shape, 3 cm long and 1 cm posterior to the major pectoralis muscle border. This allows direct access to the rectropectoral or prepectoral (subglandular) or subfascial plane. The dissection was performed utilizing video endoscopy electrocautery and high-frequency cautery, endoscopic scissors, hemostats, dissectors, and endoretractors.

When subglandular access was utilized [3], undermining went 1 cm below the original submammary sulcus and superiorly to the second intercostal space. When submuscular access [13,16] was chosen, the inferior and

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inferomedial insertion of the pectoralis muscle to the sternum and ribs was sectioned, respecting 1 cm of its osteous insertion to facilitate eventual bleeders' hemostasis. This undermining was performed until 2 cm below the original submammary sulcus, because muscular contraction may bring the implant upward. When we use the subfascial plane, the dissection should start at the lateral border of the pectoral muscle, accessing the subfascia, and, with gentle movements, proceed with undermining upward to the second intercostal space and inferiorly to the level of the fifth and sixth intercostal spaces, where the junction of the pectoral fascia and abdominus rectus and lateral oblique muscles is found. At this point the fascia is tender but resistant, and from this point inferiorly, undermining shifts to a suprafascial or subglandular plane until it reaches 1 or 2 cm below the original submammary sulcus. Once undermining is completed and a thorough hemostasis reviewed, the implant is inserted. An ink mark is made on the superolateral aspect of the implant, which can be seen under endoscopy to avoid rotation. Closed drainage is maintained for 24 h. Dressing with an elastic band in the upper thorax to maintain the implant in the correct position, avoiding upward dislocation, is used for 30 days. Physiotherapy on the breast is begun on the seventh postoperative day and the patient returns to regular activities also after the seventh postoperative day.

Results

Complications were infrequent. Of the 62 patients operated on during the 3-year period, only three complications were observed. They consisted of one case with hematoma, which was drained with ultrasonographic assistance, and two patients with implant malposition, who were reoperated on through the same access, endoscopically, repositioning the implant (Figs. 1–3). There was one patient with axillary muscle contraction that resolved with physiotherapy. Echymosis and edema subsided in a few weeks and patients returned to activities in 7 days.

Subfascial implants offer better contouring of the breast with a more natural appearance. Personal satisfaction in all cases was excellent. The reasons for this are the absence of breast scars combined with almost-imperceptible axillar scars and the much better shape of the breast in the late postoperative period (Figs. 4 and 5).

Comments

The submuscular space, which minimizes capsular contracture, has been our choice for 17 years (Figs. 6 and 7). Muscular movements during activities maintain a constant massage to the implant and give a more natural look and texture to the breast. Neverthless, there was a 3% capsular contracture rate. Four years ago we began using high-cohesivity breast implants and there was a striking reduction of the contracture rate to zero. In one patient who was reoperated all in the sixth postoperative month for repositioning of the implant, the capsule was sent for analysis and no silicone infiltration or leakage was revealed. This suggests that silicone leakage may be a reason for capsular contracture.

Based on these data plus the observation that in some patients submuscular implants might flatten the inferior pole of the breast during physical activity, we began to use the subfascial implant. In the area from the second to the fifth and sixth intercostal spaces, the undermining is carried to just above the muscle fibers and just below the pectoral fascia. Inferiorly to these points the undermining moves to subglandular until 1 to 2 cm below the submammary sulcus. The subfascial implant gives a more natural look to the breast, avoiding flattening or change in the shape of the breast as occurs with submuscular implants. Another point is that the implant edge is not marked on the breast as may occur with the subglandular location (Figs. 8 and 9), as in severe breast hypoplasia. This last option is maintained for those patients with enough breast tissue to hide the implant borders.

Conclusion

Video endoscopic transaxillary mammaplasty seems to be a safe alternative to breast augmentation and gives better and more natural results, improving patient satisfaction, as far as scar, shape, and low complication rate are concerned. Recently subfascial access has been our choice for breast augmentation. The main reasons for this are that at the upper pole the implant looks like a submuscular implant, without sharp demarcations, while at the lower pole the breast looks like a subglandular implant, without shape flattening as occurs in submuscular implants. The end result is a more natural breast shape with the subfascial implant (Figs. 10 to 16).

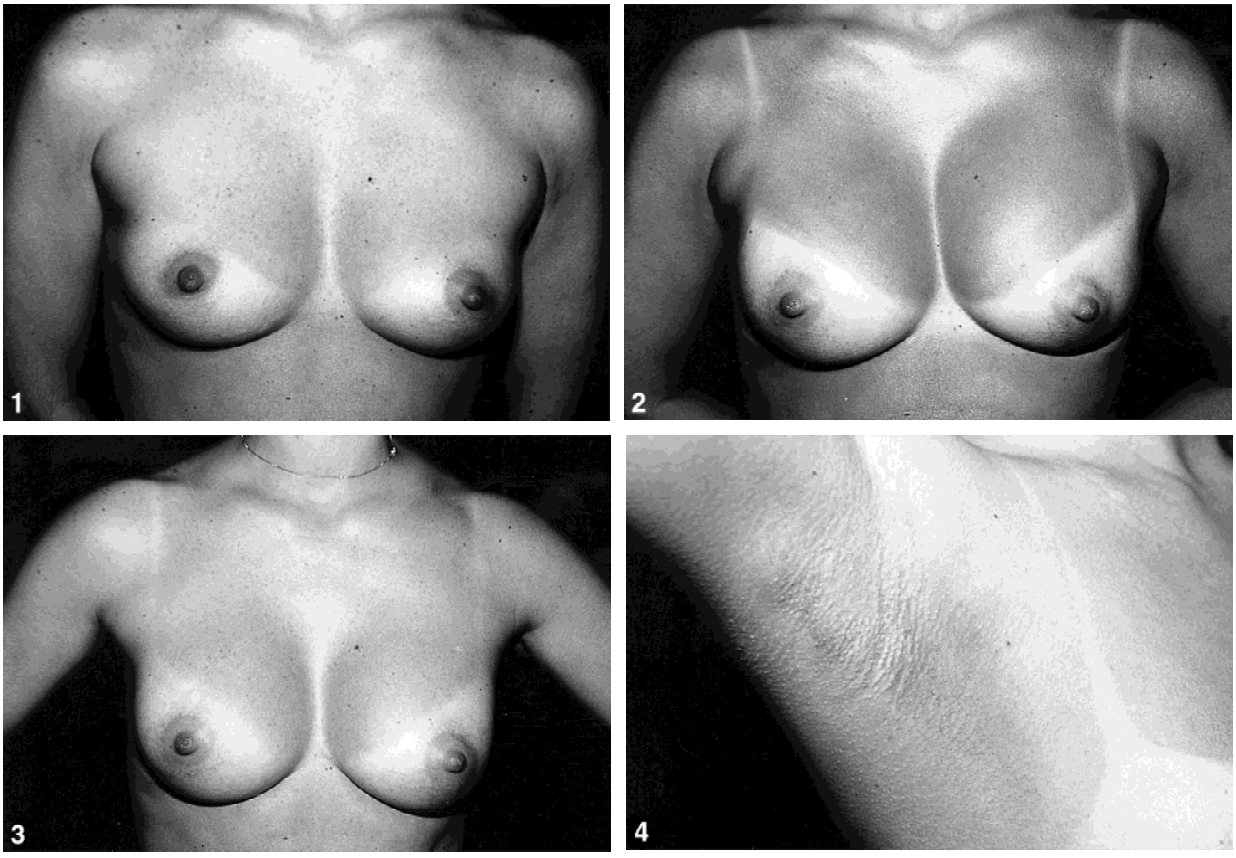


Fig. 1. A 31-year-old female patient with hypoplastic breasts.
Fig. 2. The same patient as in Fig. 1, 6 months after transaxillary video endoscopic breast implant, with asymmetry of the superior part of the left breast.
Fig. 3. The same patient as in Fig. 1, 6 months after transaxillary video endoscopic breast implant reoperation to improve the implant's rotation.
Fig. 4. Axillary scar 4 months after video endoscopic surgery.

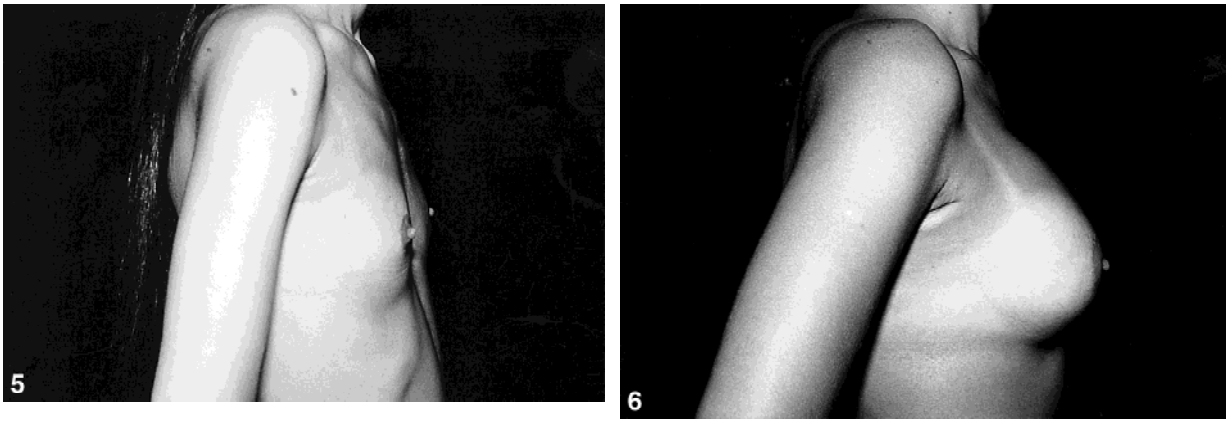


Fig. 5. A 26-year-old female patient with hypoplastic breasts.
Fig. 6. The same patient as in Fig. 5, 6 months after transaxillary video endoscopic submuscular mammaplasty.

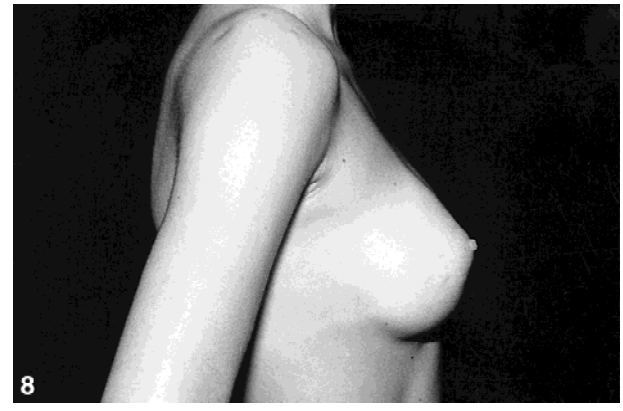
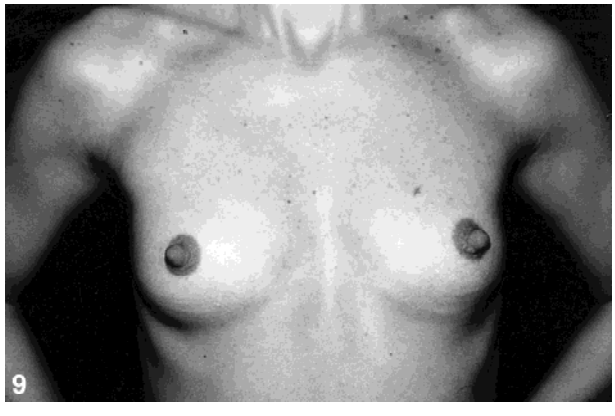
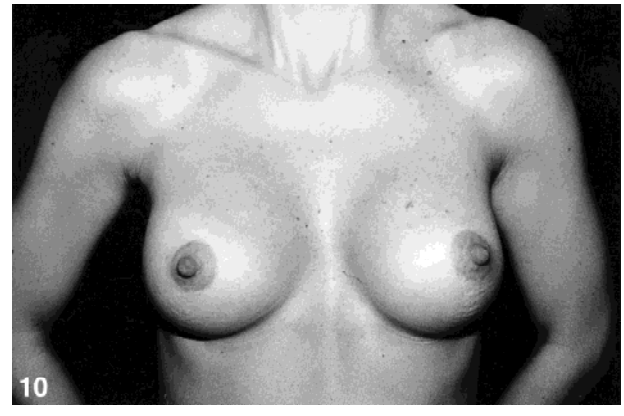


Fig. 7. A 29-year-old female patient with flaccidity and hypoplastic breasts.
Fig. 8. The same patient as in Fig. 7, 8 months after mastopexy and subglandular breast implant, with visible borders at the superior part of the breast.





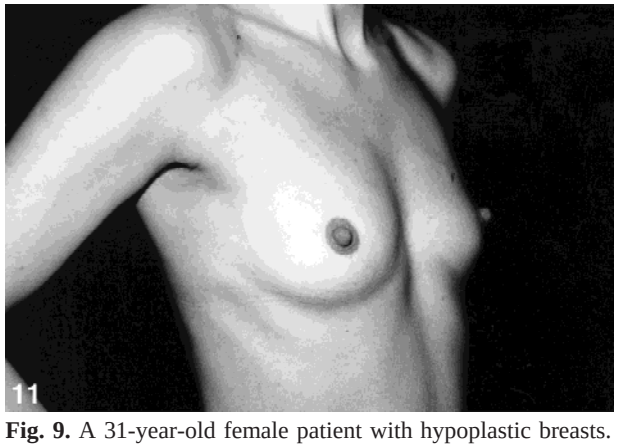


Fig. 9. A 31-year-old female patient with hypoplastic breasts.
Fig. 10. The same patient as in Fig. 9, 6 months after video endoscopic subfascial mammaplasty.
Fig. 11. The same patient as in Fig. 9; oblique view, before surgery.
Fig. 12. The same patient as in Fig. 9; oblique view, 6 months after surgery.

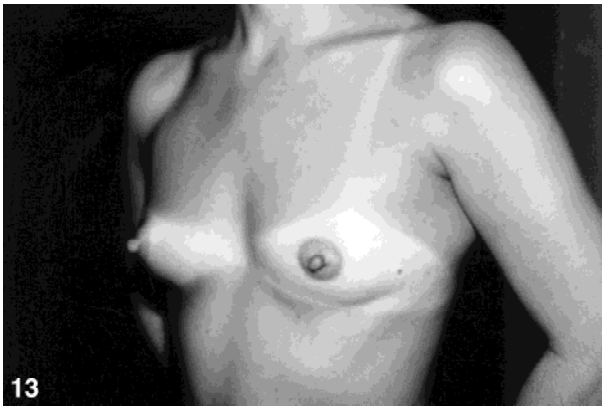


Fig. 13. A 27-year-old female patient with hypoplastic breasts.
Fig. 14. The same patient as in Fig. 13, 6 months after video endoscopic subfascial mammaplasty.
Fig. 15. The same patient as in Fig. 13; profile view, before surgery.
Fig. 16. The same patient as in Fig. 13; profile view, 6 months after surgery.

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