

CHAPTER 60

Submalar Augmentation: An Alternative Method for Facial Rejuvenation

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Throughout history, mankind has had a desire for permanent beauty and youth. Although there are no standard measurements to define the essence of beauty, almost all definitions have emphasized a "youthful" appearance.¹

One of the strongest characteristics of youth is a fullness of the cheeks, indicating the presence of healthy midfacial soft tissue. The subcutaneous tissue of an infant contains the greatest amount of adipose tissue, which maintains the skin at maximum distention.² In an adult, progressive loss of the quantity and character of this intervening buffer of subcutaneous fat causes a decrease in thickness and a loss of elasticity in the skin, facilitating the wrinkling process.³ Atrophy of the buccal fat pad and relaxation of the skin also deepen the nasolabial folds and thin the vermilion border of the lip. The inferior migration and redistribution of cheek fat contribute to the characteristic midfacial signs of aging, forming jowls and depressions that can result in a gaunt appearance.⁴

The majority of patients requesting aesthetic surgery simply desire to look younger. Patients (ages 35 to 50 years) with premature degenerative soft tissue changes or deficient bone structure in the midthird of the face are characterized by a sunken or flattened appearance to the face. These patients often describe their appearance as haggard or depressed. It has also been described as the "gestalt of sadness."⁵ This flattened facial appearance often motivates a relatively young patient to seek early consultation for facial rejuvenation surgery (Fig. 60-1). Many of these patients assume that face-lift procedures are their primary rejuvenation option. For patients in this age group, rhytidectomy may not remedy midfacial pathology, and might, in fact, result in more exaggerated deficiencies.

Although the newer superficial muscular aponeurotic system (SMAS) and platysmal methods of rhytidectomy have made substantial progress in reducing jowls and submental pathology, they have had minimal success in reversing the

degenerative signs of aging found in the mid-third of the face. With rhytidectomy, any significant underlying skeletal deficiency, particularly in the older age group, makes draping of the soft tissue difficult, resulting in recurrence of skin folds. A patient's poor skeletal structure and inelastic skin can negate the efforts of a perfectly performed face-lift procedure, yielding a less than desirable result.

Thus, in improving facial form, emphasis should be placed on supplementing the midfacial area as well as smoothing out folds and tightening sagging skin. It therefore becomes important to correctly assess how augmenting deficient bone structure with an appropriate implant will affect the overlying soft tissue and inelastic skin to provide the basis for a more successful face-lift result.

Submalar augmentation is a more effective and less costly alternative to face-lift surgery. It can restore a youthful appearance by adequately padding the skin at healthy levels of distention and elasticity. The procedure is relatively simple and can be performed quickly as compared to traditional surgical methods of facial rejuvenation.

In submalar augmentation, anatomically designed Silastic implants are positioned over the midface through intraoral insertion. This has proven successful in three specific applications: as an alternative to "face-lift" surgery in the 35 to 50 age group, as an adjunct to enhance the results of rhytidectomy, and to create a more natural "high cheekbone" effect.

MATERIALS AND METHODS

The procedure is begun by making a small incision, approximately 1 to 1.5 cm, on the inner surface of the lip, at the buccal-gingival sulcus over the canine fossa. The periosteum is incised and elevated superiorly off the anterior surface of the maxilla and the infraorbital nerve is identified.

Using a periosteal elevator, a pocket is created, providing total exposure from the anterior surface of the maxilla to the lateral malar-zygomatic areas of the facial skeleton (see

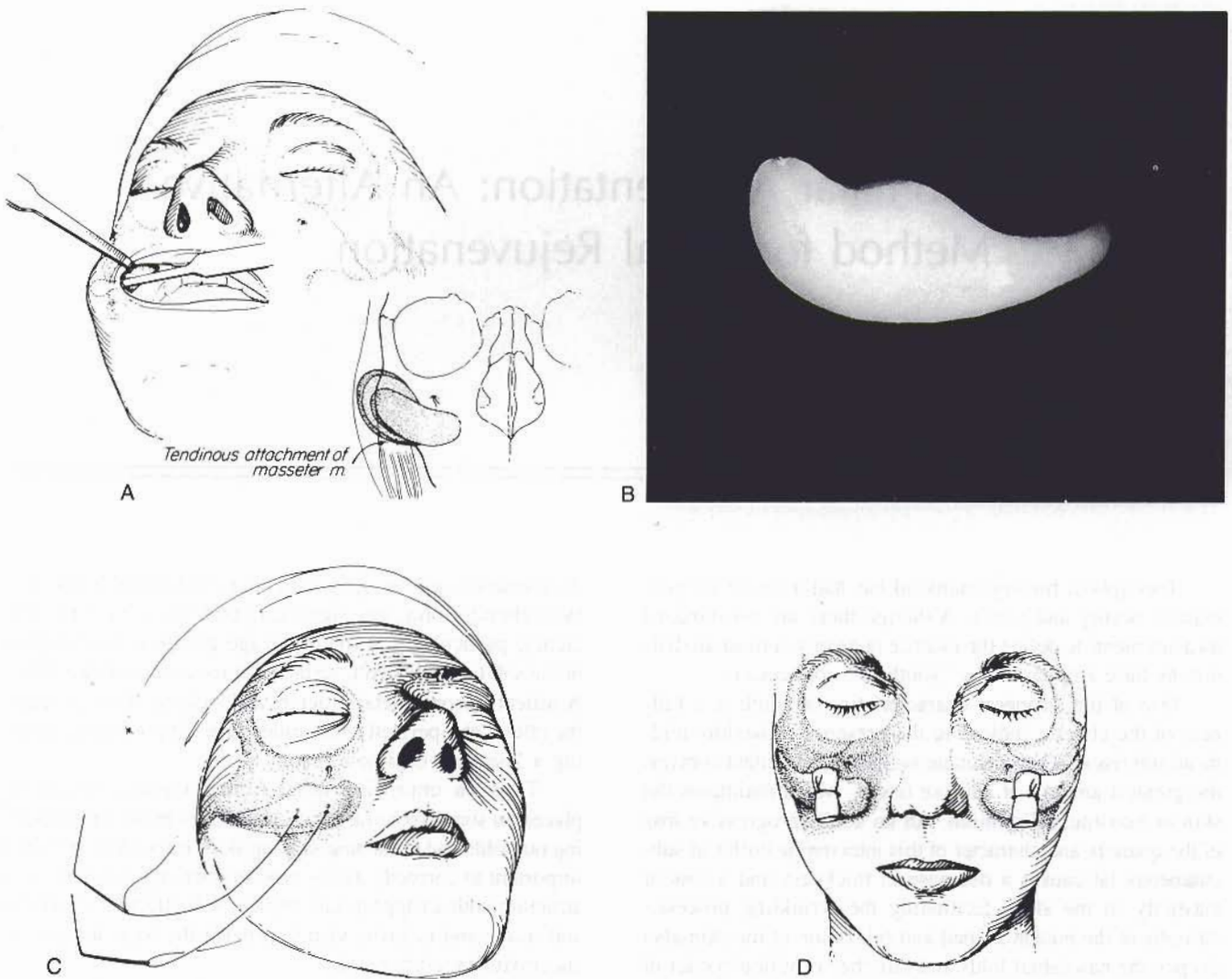


Figure 60-1. A, Through the intraoral approach, the infraorbital nerve is identified and dissection is continued laterally around the zygoma. The pocket is made large enough so that there is no encroachment of soft tissue on any part of the implant. B, The submalar implant is specifically designed to deal with the "three-dimensional" problems encountered in midfacial structure. C, The submalar implant is positioned over the anterior surface of the maxilla and over the superior tendinous insertions of the masseter muscle. A double-armed 00 silk suture passes around the posterior surface, through the implant fenestrations. From inside the pocket, the needles are passed *directly perpendicular* to the skin, exiting at the external markings, corresponding in position to the implant fenestrations. D, The implant is stabilized by tying the suture directly over an external bolster. (From Binder WJ. Submalar augmentation: An enhancement to rhytidectomy. *Ann Plast Surg* 1990; 24(3):200-212.)

Fig. 60-1A). The pocket is also continued along the inferior surface of the zygoma and extended inferiorly over the tendinous insertions of the masseter muscle. The anatomic configuration is identified by direct vision and sizers are used to choose the appropriate submalar implant (see Fig. 60-1B). The bulk of the implant is placed over the anterior surface of the maxilla and/or zygoma and the tapered, posterior-lateral extension wraps around the zygomatic arch and/or rests on the superior tendinous attachments of the masseter muscle. If a high cheekbone effect is desired, the implant is placed in a more superolateral location.

The implant is first placed on the anterior skin surface and outlined in the desired position. Then it is inserted in the pocket and adjusted in position until the desired facial contour is achieved. The implant is lined up so that the two medial fenestrations of the implant correspond to the external markings on the skin.

The implant is then removed, and a double-armed 00 or 000 silk suture on tapered needles is looped around the undersurface and through the fenestrations of the implant. The needles are advanced through the pocket and then passed perpendicularly through the skin, exiting at the external mark-

ings (see Fig. 60-1C). The implant, following the needles, is placed into the pocket in the desired anatomic position. It is stabilized by tying the sutures externally over a bolster (using one or two dental rolls) (see Fig. 60-1D). The incision is then closed in two layers. By the third postoperative day the sutures are cut and the bolsters are removed.

RESULTS

From May 1982 to May 1989, submalar augmentation was performed on 187 patients. The procedure was used as an alternative to rhytidectomy in younger patients (ages 35 to 50 years), and as an adjunctive procedure to improve the results of rhytidectomy. It was also used instead of conventional malarplasty to achieve a more natural high cheekbone effect. Additionally, it has been used for traumatic or post-ablative midfacial soft tissue defects as well as for reconstruction of depressed, unreduced zygomatic-complex fractures (Table 60-1).

Overall, the complications were minor and the incidence small. There were seven cases of postoperative facial asymmetry that genuinely required adjustment of the implant. Because the material is Silastic, there was no difficulty encountered in repositioning the implant.

Three patients were treated for postoperative infection, all resolving satisfactorily through the use of antibiotics, without having to remove the implant. Four patients experienced slightly reduced unilateral lip mobility, with complete return of function within 4 weeks. Six patients mentioned partial upper lip numbness, all with complete return of sensation within 3 months.

The majority of patients experienced very little postoperative discomfort and reported that they did not feel the implant and regarded it as a normal part of their facial structure. To date, no implant has been rejected.

DISCUSSION

By using the submalar implant to augment structure, it provides the appearance of enhanced soft tissue bulk, offering a wider, convex area to support the skin, which addresses many of the problems of hollowness and wrinkling present in the midface.

Silicone was chosen as the implant material for its advantages over all other available alloplastic materials.⁶⁷ The direct fixation technique allows placement of silicone implants in the region of the midface beneath thicker skin flaps. This procedure also provides a way to ensure symmetry and security.

Placing the submalar implant over the anterior surface of the maxilla supports and repositions the inferiorly displaced soft tissues, restoring natural contours to the face (Fig. 60-2A and B). Medial placement of the implant also raises the in-

Table 60-1. Submalar Augmentation Procedures Performed—May 1982–May 1989

Total number of patients	187
Performed as alternative to face-lift surgery	98
Performed as adjunct to face-lift surgery	61
Performed to produce "high cheekbone" effect	21
Performed to reconstruct depressed zygomatic complex fractures	4
Performed to correct posttraumatic ablative soft tissue defects	3

feriorly displaced lateral commissure, while externally advancing and rotating the vermilion.

By extending the submalar implant in a more superior-lateral position, projection is increased over the malar complex. This produces a natural "high cheekbone effect" (Fig. 60-3).

As a means of renewing youthful facial appearance, submalar augmentation provides an alternative to rhytidectomy, with particular advantage for those in whom a face-lift is not indicated, or who are not ready for a complete face-lift. The procedure also appeals to an entire segment of people who previously rejected the notion of having face-lift surgery.

Many patients with deficient facial skeletal structure and/or severe degenerative soft tissue changes are considered poor candidates for, and are sometimes denied the benefit of face-lift-surgery (Fig. 60-4). Similarly, the persistence of the nasolabial folds after rhytidectomy has prompted development of many primary as well as ancillary surgical procedures.^{8,9}

By using the submalar implant to enhance deficient midfacial bone structure, the skin is repositioned and draped over a larger, convex, rather than a smaller, concave structure. This provides the face-lift with an increased capacity to smooth wrinkles and reduce the depth of the anterior cheek folds, without applying excessive tension on the skin.

Therefore, when used in conjunction with traditional rhytidectomy in patients with deficient bone structure and/or severe atrophy of overlying soft tissue, submalar augmentation establishes the foundation for longer-lasting as well as enhanced results from rhytidectomy (Fig. 60-5A and B). This reduces the need for extended or multiple face-lift procedures, and avoids a stretched, "masklike" appearance. Submalar augmentation also provides the unique ability to change the status of a patient from that of a poor candidate to one who can benefit from the same face-lift procedure.

By emphasizing a restorative approach, submalar augmentation fills many voids in the present-day armamentarium of facial rejuvenation surgery.

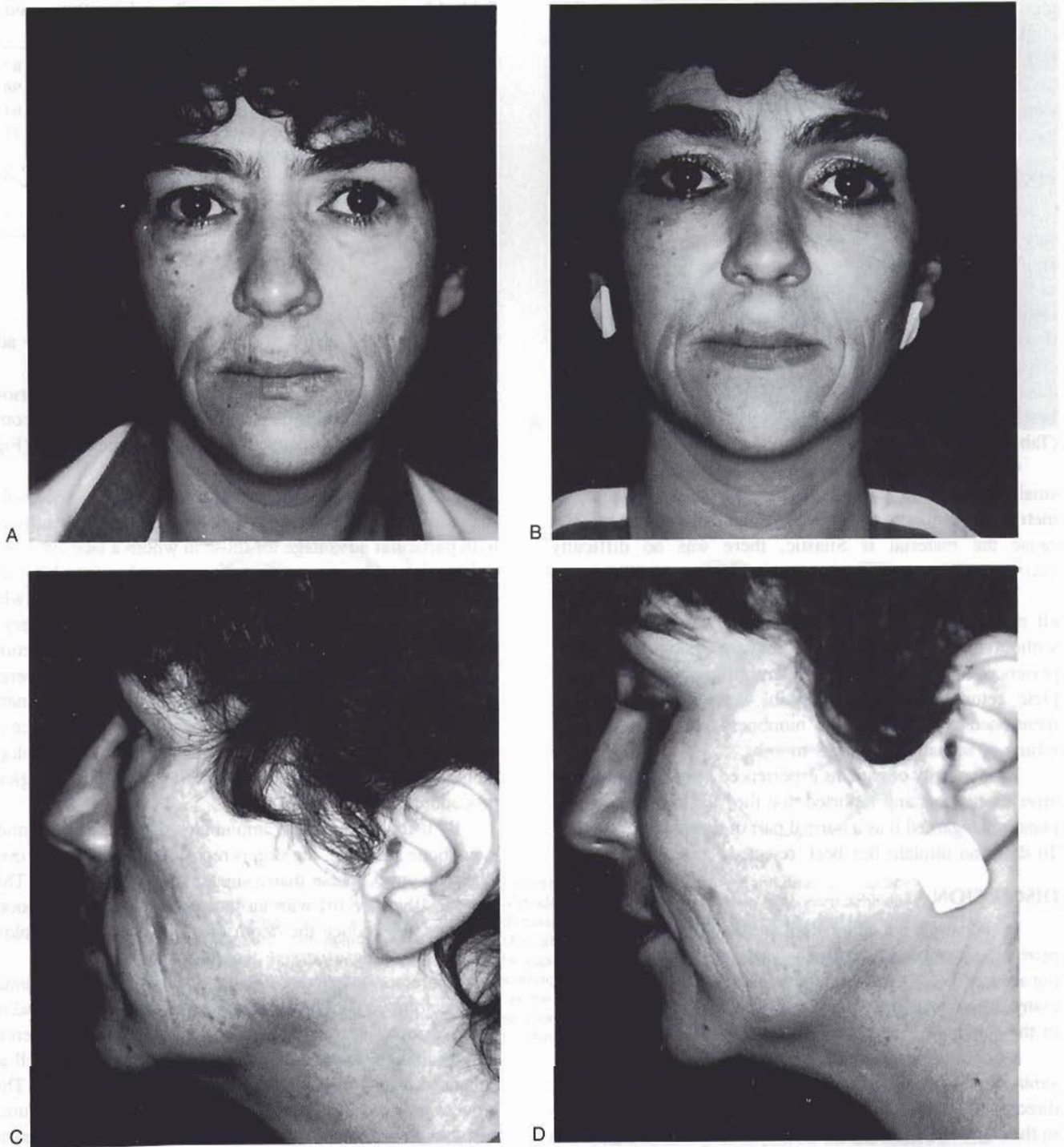


Figure 60-2. A and C, preoperative. Example of a patient with a flattened facial appearance (“gestalt of sadness”). This atrophy of midfacial soft tissue often motivates relatively young patients to seek early consultation for facial rejuvenation. B and D, 16 months postoperative. Submalar augmentation was used alone to provide the appearance of soft tissue enhancement and to restore the brightness and vibrancy to the mid-third of the face. (From Binder WJ. Submalar augmentation: An alternative to rhytidectomy. *Arch Otolaryngol* 1989; 115:797–801. Copyright 1989, American Medical Association.)



Figure 60-3. *A*, preoperative. Patient desiring high cheekbones. *B*, 16 months postoperative. Submalar augmentation was used to produce a more natural "high cheekbone" effect by placing the bulk of the implant below the prominence of the zygoma.



Figure 60-4. *A*, Preoperative. Insufficient facial skeletal structure, unable to support collapse of degenerative soft tissue and aging skin. The underlying bone structure must first be enhanced for even extensive face lift surgery to provide a satisfactory, long-lasting result. *B*, 2 years postoperative. The results of submalar augmentation and chin augmentation prior to planned face-lift surgery. The enhanced facial structure will now provide the support for a more successful face-lift surgery. (From Binder WJ. Submalar augmentation: An enhancement to rhytidectomy. *Ann Plast Surg* 1990; 24(3):200-212.)

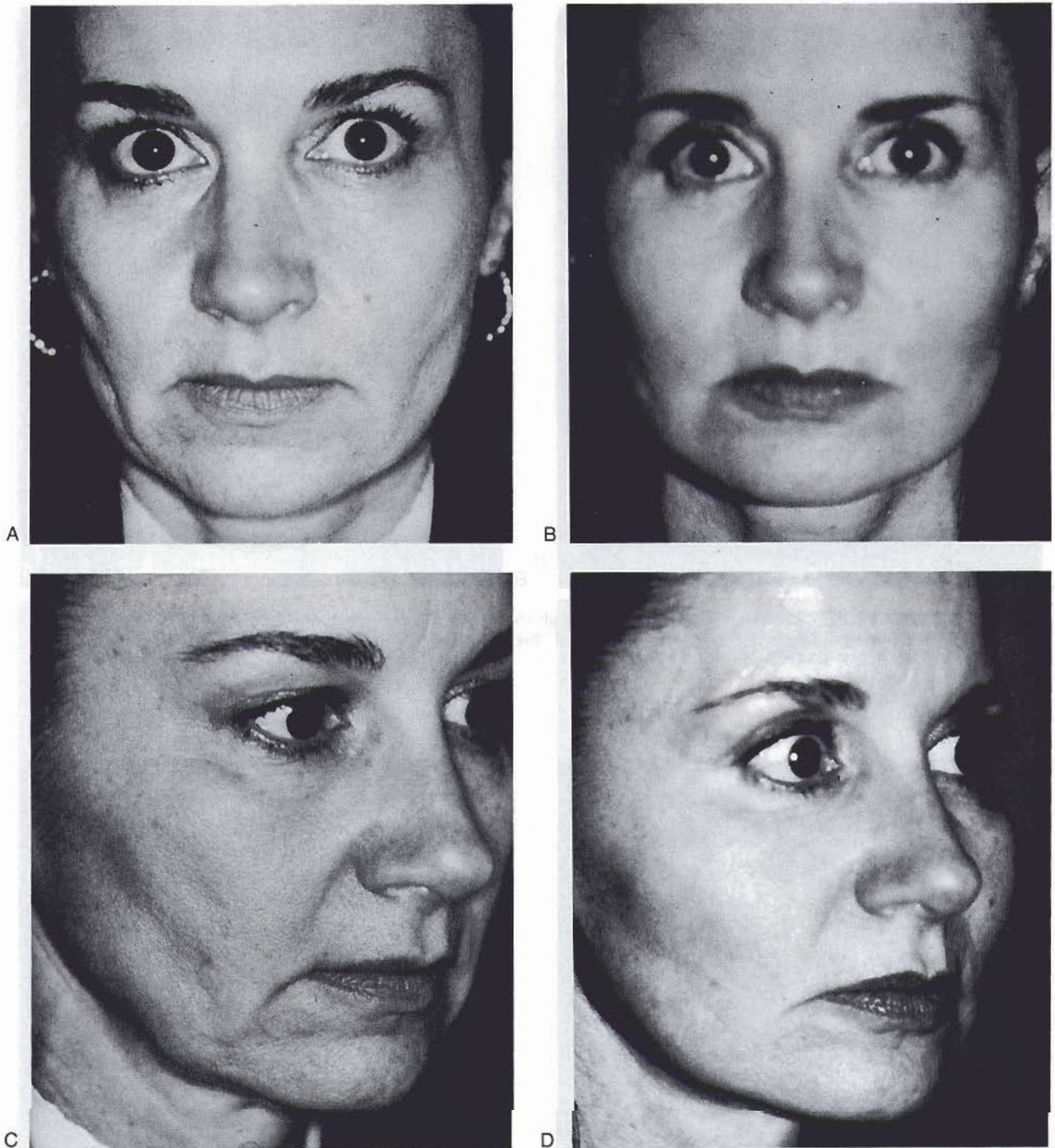


Figure 60-5. *A* and *C*, preoperative. *B* and *D*, 18 months postoperative, after submalar augmentation followed by face-lift surgery. By first enhancing midfacial bone structure to treat the cavity soft tissue changes of the midfacial region, the capacity for rhytidectomy to produce an enhanced and longer-lasting result is greatly improved. Notice the significant enhancement of the buccal area. (*C* and *D* from Binder WJ). Submalar augmentation: An enhancement to rhytidectomy. *Ann Plast Surg* 1990; 24(3):200-212.)

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