The Case for Breast Reconstruction
After Mastectomy

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We have previously reported our results in restoration of the female breast after mastectomy.1,2 Our personal series of 41 cases, reported in 1976, is still the largest number of cases reported, and we have now completed over 100 cases.

Advances in Breast Reconstruction

Much controversy has surrounded this procedure, but it is felt that this is mainly due to a general ignorance of the enormous advances made in its perfection in the last few years. Attempts at breast reconstruction are not new. The literature is replete with case and method reports extending back over 50 years.1,3,13 However, until seven years ago all of these attempts involved many-staged procedures, lasting months or years.1 Included were the manufacture and movement of pedicle tubes and flaps from abdomen, flank, arm and opposite breast, free grafting of buttock tissues, movement of the omentum and the like. These lengthy processes were expensive, fraught with mental and physical discomfort for the patient, often resulted in failure at late stages with total loss of all that had gone before and, in any event, produced results which usually could only be described as grotesque. It is no wonder, therefore, that many physicians, with the memory of these cases in mind, are reluctant to recommend breast reconstruction.

A New Era in Breast Reconstruction

However, in the last few years, restoration of the breast has been achieved routinely by an altogether new method, although it must be admitted that the old methods have not been entirely abandoned.14,21 Snyderman,1 in 1971, reported his success in placing prosthetic implants under the remaining skin and subcutaneous tissue of the mastectomy site. Once freed from its scar attachments to the deeper tissues, this skin-subcutaneous complex was found to be far looser and more supple than had been thought. Equally as important, its blood supply was discovered to be sufficient in most cases to withstand not only wide undermining, with separation from direct underlying vessels, but also to withstand the compromising effects of strong pressure by the tightly compressed prosthesis. At the time, Snyderman's report passed with surprisingly little comment, but it had inaugurated the new era in breast reconstruction.

The lack of immediately favorable response was due to the poor shape of the prostheses then in use. The only prostheses available were designed for cosmetic augmentation of the breast—amorphous silicone bags containing either normal

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saline or silicone gel. When covered by even small amounts of normal breast tissue, these provided an acceptable shape for the combined volume. When covered

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only by tight, thin, postmastectomy tissue, these shapeless implants either resembled pancakes or, if a tight, constricting capsule formed around the implants,22 as it often did, resembled tennis balls (Fig. 1).

Shortly after Snyderman’s publication, we discovered that the use of a shaped implant, developed in 1970 by Ashley and Markham,16 but largely abandoned for cosmetic use due to its firmness, produced far superior results. Because of its construction with firmer silicone gel and its definite, molded shape buttressed by internal compartmentalization, this implant is able to defend its shape against the deforming pressures of the tight, overlying tissues. The difference in appearance between an amorphous cosmetic implant and the Ashley implant is dramatic (Fig. 2). Some of the cases in our 1976 report were done using cosmetic implants. These were all subsequently changed to Ashley implants, and our last 100 cases have all had the Ashleys.
Procedure

A transverse incision is made in what will become the inframammary fold of the reconstructed breast and corresponds in level to the inframammary fold of the normal side (Fig. 3). Through this incision, the skin and subcutaneous fat of the chest wall are undermined, separating them from the deeper ribs and/or pectoral muscle. The implant is placed in this pocket, a hemovac drain is brought in from the lateral side, and the wound is closed.

Three months later, if the patient elects, a nipple-areola complex may be reconstructed using a full-thickness graft of labia majora for the areola and transplanting part of the opposite nipple. 2, 14, 19, 21

Each of these procedures requires only a two-day hospitalization. Examples of results are shown in Figs. 4-7. There is very little discomfort involved. The procedures are reliable and simple. We have had only

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one complete failure in our last 100 cases, and even this might have been avoided with the knowledge we have today. Of the last 164 patients we have seen regarding the possibility of this operation (which corresponds in time to the last 100 operations) only 11 have been judged ineligible. Ineligibility results from large skin grafts, excessive radiation and skin that is too tight or thin. Such determinations must be made by the reconstructive surgeon. Half of our operated cases were told by a physician beforehand that the procedure could not possibly work for them.

The matter of masking a chest wall recurrence has been discussed frequently. The total number of such recurrences at Memorial Sloan-Kettering Cancer Center is five percent of total recurrences, and it is not known how many of these would have been deep to an implant in the region.

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The implants are radiolucent so x-ray detection is still possible. The implant is of great benefit to those who de-
Fig. 5  Reconstruction of right breast
Fig. 6  Bilateral breast reconstruction
Fig. 7  Bilateral breast reconstruction
velop a recurrence in the overlying skin since its depth is defined and a rib resection is avoided. Whatever the chance of a deep recurrence remaining undetected as against the cure rates for those that are detected and undergo resection is not known. In any case, it is our conviction that patients should not be denied a chance for improved appearance on these grounds.

Summary
The new method of breast reconstruction using internal prostheses is discussed. The simplicity of the procedure, including the shortness of time required, minimal patient discomfort and low rate of complications, and the superior results that can be achieved warrant serious consideration being given to this procedure for all mastectomy patients.

References
1. Snyderman, R.K., and Guthrie, R.H., Jr.: Reconstruction of the female breast following radical mastectomy. Plast. Reconstr. Surg. 47: 565-567, 1971.
2. Guthrie, R.H., Jr.: Breast reconstruction after radical mastectomy. Plast. Reconstr. Surg. 57:14-22, 1976.
3. Alexander, J.E. and Block, L.L.: Breast reconstruction following radical mastectomy. Plast. Reconstr. Surg. 40:175-179, 1967.
4. Harris, H.L.: Automammaplasty. J. Int. Coll. Surg. 12:827-839, 1949.
5. Holdsworth, W.G.: A method of reconstructing the breast. Brit. J. Plast. Surg. 9:161-162, 1956.
6. Longacre, J.J.; deStefano, G.A., and Holmstrand, K.: Breast reconstruction with local derma and fat pedicle flaps. Plast. Reconstr. Surg. 24:563-576, 1959.
7. Mallinak, J.W.: Use of pedicle dermofat flap in mammaplasty. Plast. Reconstr. Surg. 12:110, 1953.
8. Oricsceha, M.: Use of the buttock to reconstruct the breast. Br. J. Plast. Surg. 26:304-309, 1973.
9. Tai, Y.; and Haegawa, H.: A transverse abdominal flap for reconstruction after radical surgical operations for recurrent breast cancer. Plast. Reconstr. Surg. 53:52-54, 1974.
10. Thorek, M.: Possibilities in reconstruction of the human form. New York J. Med. 116:572-575, 1922.
11. Thorek, M.: Plastic reconstruction of the female breast and abdomen. Am. J. Surg. 43: 268-278, 1939.
12. Thorek, M.: Twenty-five years experience with plastic reconstruction of the breast and transplantation of the nipple. Am. J. Surg. 67: 445-466, 1945.
13. Yannilos, H.G.: Use of composite tube pedicle in reconstruction of breast defect with subsequent cosmetic repair of donor breast. Plast. Reconstr. Surg. 6:396-399, 1950.
14. Adams, W.M.: Labial transplant for correction of loss of nipple. Plast. Reconstr. Surg. 4:295-298, 1949.
15. Arnold, P.G.; Hartrampf, C.R., and Jurkiewicz, M.I.: One-stage reconstruction of the breast, using the transposed greater omentum. Case Report. Plast. Reconstr. Surg. 57:520-522, 1976.
16. Ashley, F.L.: A new type of breast prosthesis. Preliminary Report. Plast. Reconstr. Surg. 45:421-424, 1970.
17. Cronin, T.D.; Upton, J., and McDonough, J.M.: Reconstruction of the breast after mastectomy. Plast. Reconstr. Surg. 59:1-14, 1977.
18. Fujino, T.; Harashina, T., and Enomoto, K.: Primary breast reconstruction after a standard radical mastectomy by a free flap transfer. Case Report. Plast. Reconstr. Surg. 58:371-374, 1976.
19. Guida, C.A.; Pichi, A., and Inzirillo, S.: Areola and nipple reconstruction. Plast. Reconstr. Surg. 56:454-455, 1975.
20. Millard, D.R., Jr: Breast reconstruction after a radical mastectomy. Plast. Reconstr. Surg. 58:283-291, 1976.
21. Wiemer, D.R., and Freeman, B.S.: Bilateral reconstruction of the nipple-areola complex. Plast. Reconstr. Surg. 58:310-313, 1976.
22. Imber, G.; Schwager, R.G.; Guthrie, R.H., Jr., and Gray, G.F.: Fibrous capsule formation after subcutaneous implantation of synthetic materials in experimental animals. Plast. Reconstr. Surg. 54:183-186, 1974.