

# Synmastia after Breast Augmentation

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**Background:** Synmastia after breast augmentation is a condition of aberrant communication of the breasts caused by violation of the chest midline by medial migration of one or both implants. This condition, though rare, has been seen with increasing frequency in the authors' practice.

**Methods:** The records of 20 women with synmastia were reviewed. Data collection for these women included their preoperative repair history, implant sizes, and breast to chest wall proportions.

**Results:** All of the previous augmentations were subpectoral. Ten of the patients had undergone multiple augmentation operations. Twelve patients had implants that appeared excessively wide for their chest.

**Conclusions:** Synmastia is a difficult surgical complication to address. Patients with multiple breast operations, excessively large implants, and overaggressive medial dissection are susceptible to developing synmastia. Understanding these potential risk factors leading to synmastia should help prevent its occurrence. (*Plast. Reconstr. Surg.* 118 (Suppl.): 168S, 2006.)

Synmastia is a serious but rare complication that can occur after augmentation mammoplasty. Its infrequency is evidenced by the paucity of reports regarding its prevention, occurrence, or correction.<sup>1-11</sup> Similarly, it is not specifically reported in either Inamed Corporation's or Mentor Corporation's premarket approval studies for silicone gel or saline-filled implants.<sup>12</sup> Although developmental synmastia can occur without prior surgery in patients who have breast hypertrophy and an aberrant soft-tissue connection across the midline, this report will focus only on synmastia after breast augmentation.

For the purposes of this review, we include in the definition of synmastia any situation in which the breast implant crosses the midline, even if it is only on one side. Our first publication on this subject appeared in 1988 in this *Journal*.<sup>3</sup> In that report, synmastia was included with other types of implant malposition, including lateral and inferior displacement. As of that writing, synmastia was certainly the rarest of those conditions described, with lateral or inferior malposition being far more common.

Attesting to the relative infrequency of this condition, the few publications dealing with this

problem have involved relatively small numbers of patients, such as the report from Becker et al. describing five cases operated on by three different surgeons.<sup>8</sup> Based on comments from women who have come to us seeking repair of their synmastia, many plastic surgeons are unfamiliar with both the diagnosis and treatment of synmastia. Thus, many patients have been told that they do not have synmastia when in fact they do have it. Many of those who are correctly diagnosed are told by their diagnosing surgeon that he or she is unable to repair the problem or the patient is advised to have her implants removed, with the option of reinserting them at a distant later date.

For many years, we had encountered women with synmastia only occasionally. That was until recently. With the arrival of the Internet, women with rare conditions such as synmastia who, heretofore, were somewhat isolated can now communicate easily with one another. As a result, because of our earlier publication on managing implant malposition, we began to see a substantial increase in the number of women who were concerned that they might have synmastia.

This increased experience has allowed us the unique opportunity to evaluate a fairly large number of women who believed that they had this condition, thus allowing us to look at and compare their clinical histories and physical findings, consider a classification, evaluate different methods of repair, and perform an overall review of the topic. It is hoped that by performing this review, analyzing the data, and focusing

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on this topic, we might better understand this condition, reduce its frequency, and ultimately improve on the method of repair.

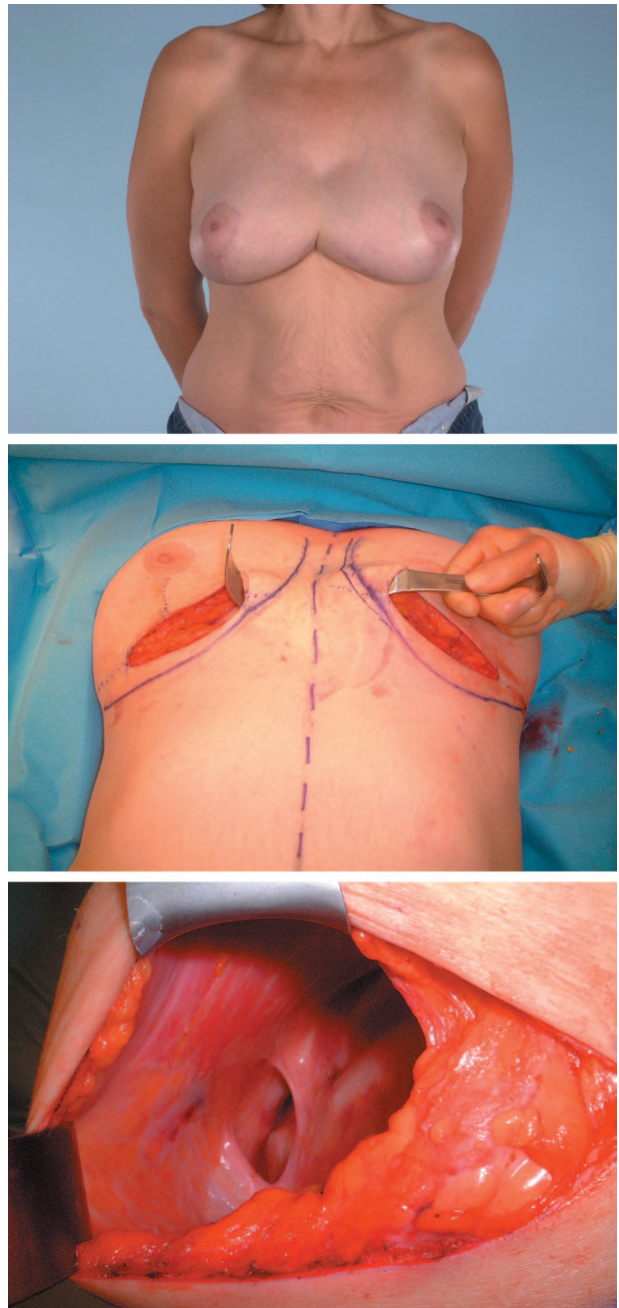
### PATIENTS AND METHODS

The records of women seen by us and diagnosed with postaugmentation synmastia between January of 1995 and December of 2005 were reviewed. The review included size of last previous implant, number of previous implant operations, anatomical location of the implants, previous attempts at repair, coincidental breast or chest wall deformities, and description of the synmastia. As we performed this review, we also became interested in the relationship between the offending implant's apparent size and the space available on the chest wall. We also looked at our technique of synmastia repair, the outcome of our repair, and the choice of new implant size with our repair, all of which are the subject for a future companion article.

All patients were carefully examined preoperatively. This examination included, whenever possible, measurements of breast base dimension, intermammary separation at rest, and potential for the breast implants to reach or cross the midline at rest or with compression, as well as the presence of other breast or chest wall deformities. Whenever possible, old records, preoperative photographs, and operative and office notes were also reviewed, including references to surgical technique, implantation site, and implant size. Patients and photographs were also evaluated with the patient in the upright position, to compare apparent breast diameter to the diameter of the hemithorax (Fig. 1).

### RESULTS

Twenty patients who satisfied the diagnosis of synmastia were identified (Table 1). Of the 20 patients, the previous complete surgical history was known for 18, but for two patients it was unavailable. For those 18 patients whose records were available, all the presenting implants were subpectoral. None were subglandular. Five of the 18 patients had undergone a failed attempt at correction, while 13 patients had had no previous attempts. Eight of the 18 patients had undergone only one previous operation, while 10 had undergone more than one, including four patients who had two operations, three patients who had three operations, two patients who had four operations, and one patient who had five operations. Based on observation, 12 of the 20 patients (60 percent) had implants that appeared to us to be excessively large



**Fig. 1.** (Above) Preoperative view of a 46-year-old patient with obvious synmastia after augmentation mastopexy with 325-cc silicone implants. (Center) Demonstration of communication between the implant pockets. (Below) View of the communication subpectorally.

or too wide for their hemithorax (Fig. 2), while eight patients (40 percent) had implants that were narrower than the hemithorax and proportionate to the available chest wall.

Previous implant sizes ranged from 195 to 800 cc, with a mean volume of 448 cc. Eight of 17 patients whose implant sizes were known had im-

**Table 1. Patient Data\***

Patient	No. of Operations	Breast to Chest Comparison	Preop Implant Volume (cc)	Type of Repair†	New Implant Volume (cc)	New Implants Larger or Smaller	Follow-Up (months)
1	3	Smaller	550 R, 440 L	A, C	430 B	Smaller	15
2	2	Smaller	350 B	C	480 B	Larger	7
3	3	Larger	650 B	C	500 B	Smaller	4
4	1	Smaller	300 B	C	300 B	Same	4
5	2	Larger	280 R, 440 L	C	375 R, 485 L	Larger	5
6	1	Larger	325 B	C	325 B	Same	1
7	1	Larger	390 B	C	270 B	Smaller	1
8	1	Smaller	325 B	C	325 B	Same	18
9	1	Larger	215 R, 195 L	C	330 R, 195 L	Larger R, same L	4
10	4	Larger	800 B	S	600 R, 550 L	Smaller	12
11	3	Smaller	360 R, 320 L	C	425 R, 320 L	Larger R, same L	5
12	2	Larger	550 B	CF	450 B	Smaller	2
13	2	Larger	630 B	C	550 B	Smaller	3
14	1	Smaller	300 B	S	350 B	Larger	0.5
15‡	1	Larger	550 B	1) C 2) S	1) 550 B 2) Smaller	1) Same 2) Smaller	1) 5 2) 2
16	5	Larger	700 B	N/A	N/A	N/A	N/A
17	1	Smaller	350 B	N/A	N/A	N/A	N/A
18	N/A	Smaller	N/A	N/A	N/A	N/A	N/A
19	N/A	Larger	N/A	N/A	N/A	N/A	N/A
20	5	Larger	N/A	N/A	N/A	N/A	N/A

R, right; L, left; B, bilateral; N/A, not applicable.

\*Number of operations indicates the total number of breast operations before symmastia correction. Breast to chest comparison data indicate whether the augmented breasts were larger or smaller than the patient's hemithorax.

†Types of repair: A, AlloDerm; C, capsulorrhaphy; CF, capsular flap; S, site change via the new subpectoral pocket.

‡Patient 15 had two operations (1 = first operation and 2 = second operation).



**Fig. 2.** A 42-year-old patient with subpectoral 550-cc saline implants filled to 700-cc. Note the breast to hemithorax discrepancy.

plants larger than 400 cc. Six of 18 patients had previous mastopexies as well as augmentation. Three had some sort of chest wall deformity, such as thoracic hypoplasia or pectus excavatum. Several had complex malpositioning with not just symmastia but also superior or inferior dislocation often associated with either capsular contracture or bottoming out. Some patients presented with

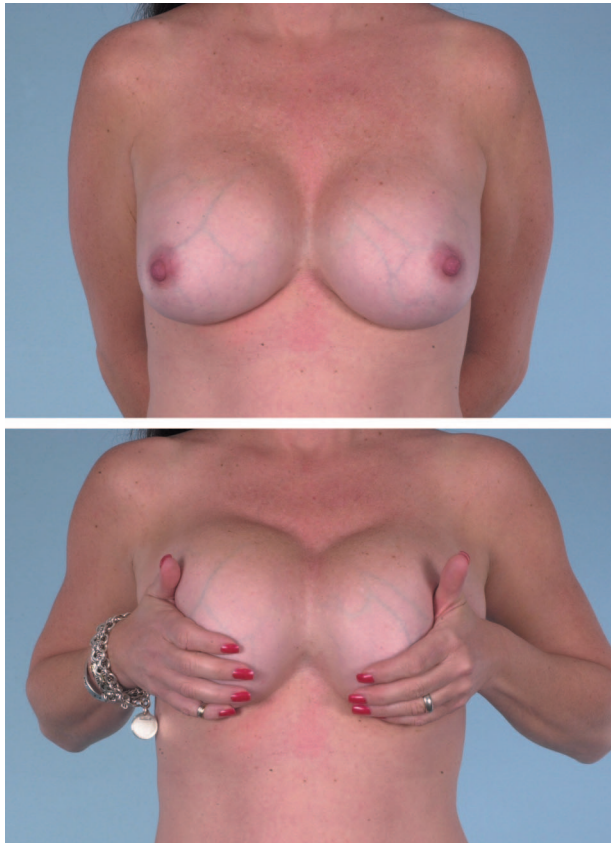
soft breasts, while others had symptomatic capsular contracture.

In some patients the diagnosis was obvious on first inspection, while in others it was more subtle. In the subtle cases, the breasts at first appeared to have an appropriate or at least acceptable intermammary space, but the implants could be shown to be dislocated medially by having the patient bend over or by manually pushing one of both breasts medially with the patient either sitting or supine (Fig. 3).

## DISCUSSION

Based on our experience with postaugmentation symmastia, a number of facts have emerged. All of the implants were subpectoral. The majority of these women had undergone more than one operation. Many of them had undergone successive operations to enlarge the size of their implants and breasts. Many of them had large implants, arbitrarily defined by us as greater than 400 cc or with a diameter of 14 cm or more. Several of the patients had associated chest wall skeletal deformities, and some had undergone simultaneous mastopexy at the time of their breast enlargement.

As elsewhere in medicine, for the management of postaugmentation symmastia, prevention is preferable to a successful repair. In light of the frequency of previous multiple operations (56 per-



**Fig. 3.** A 41-year-old patient with subpectoral 450-cc saline implants. (Above) There is no evidence of synmastia in repose. (Below) With compression medially, synmastia is obvious.

cent), large implants (60 percent), and submuscular positioning in our series of patients, we recommend careful dissection along all breast borders in primary subpectoral breast augmentation, particularly medially. Implants that are wider than the available hemithorax or that enlarge the pocket to accommodate large implants (>400 cc) may predispose the patient to developing synmastia. Although some surgeons recommend not transecting the pectoralis muscle fascia medially to avoid visible rippling, such technical steps alone would not necessarily be sufficient to prevent the development of synmastia. Synmastia can occur even if the fascia is kept intact, if the medial sternal attachments of the muscle itself are excessively detached. Whereas lateral, superior, or inferior implant malposition can occur over time, because

of capsular contracture or the weight of the implant causing tissue stretch, synmastia should be entirely avoidable, unless the pocket is specifically overdissected medially.

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#### DISCLOSURE

*Dr. Spear is a consultant to Lifecell, Ethicon, and Inamed corporations. Drs. Bogue and Thomassen have no financial incentives associated with this article.*

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