Does Concomitant Breast Surgery Add Morbidity to Abdominoplasty?

Russell B. Stokes, MD; and Sara Williams

Background: Patients undergoing abdominoplasty often have breast concerns, as well as abdominal concerns, because pregnancy is often the etiologic factor in both. Although concerns about combination procedures have been raised recently, the specific issue of combining abdominoplasty and breast surgery has been scarcely addressed.

Objective: This study was designed to evaluate the morbidity of abdominoplasty alone versus that associated with abdominoplasty combined with breast surgery.

Methods: A retrospective review of 92 consecutive cases performed by a single surgeon in an outpatient setting was performed. Two groups of patients were identified, those who had abdominoplasty alone, and those who had abdominoplasty with associated breast surgery. Breast surgery included augmentation, mastopexy, augmentation/mastopexy, implant removal/exchange, and breast reduction. The groups were compared with respect to morbidity rates, and, additionally, operative time, body mass index, volume of liposate removed (all patients underwent some lipoplasty), and age were evaluated as potential contributing factors in morbidity.

Results: No significant difference in morbidity was seen between patients undergoing abdominoplasty alone and patients undergoing abdominoplasty with combined breast surgery. There were no deaths or hospital admissions with either group of patients.

Conclusions: This study provides additional evidence that abdominoplasty and breast surgery can be combined safely. (Aesthetic Surg J 2007;27:612–615.)
Methods

A retrospective chart review was performed for all abdominoplasties done by the senior author (RBS) between March 2002 and March 2006. Of those, only abdominoplasties that were performed alone (discounting the lipoplasty that is performed in all our abdominoplasties) or those combined with only breast surgery were analyzed. Ninety-two cases were suitable for comparison. Forty-eight patients had abdominoplasty alone, and 44 had concomitant breast surgery. The breast surgery group included augmentation mammoplasty (n = 18), augmentation/mastopexy (n = 6), mastopexy alone (n = 16), implant removal or exchange (n = 2), and breast reduction (n = 2).

The two groups were compared with respect to minor and major complications. Minor complications were considered as seromas requiring less than 200 mL of aspiration (an arbitrary number chosen to separate small seromas from those requiring many serial aspirations or replacement of indwelling drains, which we signify as major complications), small wound breakdowns (5 cm or less), or superficial infections not requiring operative treatment or intravenous antibiotics. Major complications were considered as pulmonary embolism, deep venous thrombosis, large wound breakdowns (more than 5 cm), seroma of greater than 200 mL of aspirate, myocardial infarction, or need for transfusion. There were no deaths in either treatment group.

All surgeries were performed with the patients under general anesthesia. Patients had antiembolic stockings and sequential pneumatic stockings placed before induction of general anesthesia in all cases. Additionally, every patient received 30 mg or 60 mg (depending on body mass index [BMI]) of enoxaparin sodium (Lovenox, Aventis Pharmaceuticals Inc., Bridgewater, NJ) subcutaneously approximately 45 minutes before induction. All patients underwent lipoplasty of the abdomen and flanks performed as an adjunct to the abdominoplasty. Many patients underwent succioning of the upper flap, even the central portion beneath the area to be undermined. The fact that the abdominoplasty can be safely combined with additional procedures. Specifically, combining breast surgery with full abdominoplasty alone tends to have this complication more frequently and lipoplasty volume was significantly discordant between the two groups. Combined procedures took an average of an additional 57 minutes (Table 3) compared to abdominoplasty only patients. Lipoplasty volume averaged 1752 mL in group 1 and 1094 in group 2. Surgical time ranged from 111 minutes to 315 minutes, with an average surgical time of 195 minutes for group 1 and 252 minutes for group 2.

Results

Forty-eight patients undergoing abdominoplasty alone were compared against 44 patients who underwent abdominoplasty with concomitant breast surgery. There were 5 major complications in the abdominoplasty alone group (group 1), and 1 major complication in the combined group (group 2). The major complications are summarized in Table 1. No significant difference was found between the 2 groups with respect to major complication frequency ($\chi^2 = 3.03; P = .08$, NS). Minor complications were also compared for the 2 groups, with no significant difference being found between the two (Table 2).

An attempt was made to discern additional variables that may have contributed to differences in morbidity between the two groups. The groups were compared with respect to BMI, average surgical time, age, and average lipoplasty volume. Of these variables, only surgical time and lipoplasty volume were significantly discordant between the two groups. Combined procedures took an average of an additional 57 minutes (Table 3) compared to abdominoplasty only patients. Lipoplasty volume averaged 1752 mL in group 1 and 1094 in group 2. Surgical time ranged from 111 minutes to 315 minutes, with an average surgical time of 195 minutes for group 1 and 252 minutes for group 2.

Discussion

This retrospective review of 92 abdominoplasty procedures performed by a single surgeon using similar technique for every patient adds to the growing body of evidence that abdominoplasty can be safely combined with additional procedures. Specifically, combining breast surgery with full abdominoplasty does not appear to add significant morbidity when compared with full abdominoplasty alone.

Although major complications were few in this study, minor complications continue to be fairly frequent (18/92, or 19.6%). The dominant complication is seroma and may be explained by the fact that aggressive mobilization was encouraged in this patient base. Additionally, Lovenox usage may lead to more postoperative bleeding and a prolonged inflammatory state in the undermined areas. The fact that the abdominoplasty-only group tended to have this complication more frequently could be explained by the fact that this group had a larger volume of lipoplasty on average and had a higher preoperative BMI on average. No differences existed in terms of drain management or requirements for drain removal in the two groups. The use of tissue sealants is currently being evaluated in an attempt to diminish this nagging problem.

In the combined surgery group, there was a tendency to perform smaller volumes of lipoplasty. This was not
intentional and perhaps is explained by the fact that the average BMI of the combined group is less than that of the abdominoplasty-only group (25.59 vs 27.90).

The fact that the patients in the combined group were slightly younger (mean age 38 vs 45) was not selection bias and simply represented the desires of the patients at various stages of their lives. Each patient was evaluated on their own merit, taking into consideration their desire to have breast improvement, and older patients were certainly not counseled to avoid breast surgery.

I have long shared the concern expressed by Hughes in his commentary on the recent article by Stevens et al. The thought that increased surgical time could be correlated with increased operative complications has been expressed by others as well. This study did show a statistical difference in surgical time between the 2 groups. Interestingly, the average was less than 1 hour, even though many of the breast cases performed were mastopexies or reductions. One explanation is that the BMI of the patients undergoing combined procedures tended to be lower than that of the patients undergoing abdominoplasty alone (25.6 vs 27.9). Another factor is the length of time spent on lipoplasty. The patients in group 1 had significantly more lipoplasty volume compared with group 2, which may account for additional time spent on these patients. However you explain the difference, the time spent on the two different patient groups differed by less than 60 minutes on average, and all operations were completed within 5 hours and 15 minutes. This may seem lengthy when compared with Stevens et al, but no surgical assistant was used in any of our cases. I concur with Hughes, who believed that an average of 148 minutes operating time for abdominoplasty combined with augmentation/mastopexy was not representative of most practices where surgeons are operating alone. Our operative experience is more likely representative of a private practitioner, operating alone in an outpatient surgicenter.

The single patient who had a pulmonary embolus (PE) is worthy of additional discussion. She was a healthy, 42-year-old mother of two with no previous abdominal surgery history. She had a BMI of 24.2 and underwent 850 cc of lipoplasty in addition to her abdominoplasty and breast augmentation. Her surgery was uneventful, as was her recovery, until postoperative day 14 when she called with shortness of breath, which

### Table 1. Major complications after abdominoplasty

<table>
<thead>
<tr>
<th>Group</th>
<th>Seroma &gt;200 mL</th>
<th>Hematoma</th>
<th>Wound breakdown &gt;5 cm</th>
<th>PE</th>
<th>Infection</th>
<th>Total</th>
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<tr>
<td>1 (n = 48)</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2 (n = 44)</td>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
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</table>

### Table 2. Minor complications after abdominoplasty

<table>
<thead>
<tr>
<th>Group</th>
<th>Seroma &lt;200 mL</th>
<th>Umbilical stenosis</th>
<th>Wound breakdown &lt;5 cm</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (n = 48)</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>2 (n = 44)</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

### Table 3. Comparison table

<table>
<thead>
<tr>
<th>Variable</th>
<th>Major complications</th>
<th>Group 1</th>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average surgical time (min)</td>
<td>203.6</td>
<td>194.72</td>
<td>251.77</td>
</tr>
<tr>
<td>Average lipoplasty volume (mL)</td>
<td>1725</td>
<td>1751.979</td>
<td>1094.09</td>
</tr>
<tr>
<td>Average BMI*</td>
<td>27.38</td>
<td>27.9</td>
<td>25.59</td>
</tr>
<tr>
<td>Average age (y)</td>
<td>51.5</td>
<td>45.2</td>
<td>38.2</td>
</tr>
</tbody>
</table>

*BMI calculator from [www.cdc.gov](http://www.cdc.gov)
was acute in onset. She was referred urgently to the emergency department where chest computed tomography scanning revealed “multiple subsegmental pulmonary emboli.” She received anticoagulants for 6 months and ultimately made a full recovery.

This patient is of concern because she had no preoperative risk factors, other than a remote (over 15 years ago) history of smoking. She was not obese, was not on birth control or any other type of medication, and had no known hypercoagulable state. Additionally, she was treated with Lovenox, 30 mg administered subcutaneously before surgery, as well as wearing antiembolic stockings and sequential compression devices during surgery. She ambulated the evening of surgery and was seen in the office the next morning and was noted to be ambulating well at that time. Her hematologic work-up after the PE did not reveal any hypercoagulable condition.

Her event suggests to me that there are some things that are partially out of the surgeon’s control. The combination of third spacing of fluids, increased intraabdominal pressure, and tight external compression garments, as well as the relatively flexed position in the immediate postoperative period, are all capable of inducing venous stasis. I suggest that the risk of deep venous thrombosis and PE will always be higher than we would like after abdominoplasty and that vigorous preventative measures should always be undertaken when performing this procedure. In spite of these precautions, there will always be a small risk that is inherent in this procedure.

The issue of combined surgery will certainly continue to be important in the coming years with the recent increases in bariatric surgery. A future publication is planned to address the safety of abdominoplasty with additional excisional procedures in patients who undergo bariatric procedures.

**Conclusion**

The results of this study add to a mounting body of evidence that supports the safety of combining abdominoplasty with additional procedures. Although the number of patients treated in this study is smaller than in some previous studies, the fact that they were all completed in the same facility, by the same surgeon, removes some of the variables associated with other studies.

Abdominoplasty and breast surgery can be safely performed in an outpatient setting. In the town where this study was performed, there are no recovery facilities, and there is only one hospital chain. There is no option for overnight care without extravagant fees to the patient. This fact makes it imperative that patient and procedure selection be made in a conservative fashion. When this is the case, larger, longer cases can be safely performed without the need for transfusion, intravenous access after surgery, or monitored overnight stays.

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**References**


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