Commentary on: Lipoabdominoplasty Without Drains or Progressive Tension Sutures: An Analysis of 100 Consecutive Patients

Todd A. Pollock, MD; and Harlan Pollock, MD

In general, abdominoplasty is a conceptually simple procedure with consistent aesthetic improvement of the abdomen from its preoperative appearance. However, until recently, abdominoplasty has been plagued with an unacceptably high complication rate, with seromas reported in a consistently high percentage of cases. This has been accepted because it was generally easy to treat, reasonably well tolerated by the patient, and had only uncommon long-term sequelae. Drains, compression, and immobilization were the mainstays of prevention. These techniques alone are clearly inadequate in seroma prevention, and there are significant negatives of the preventative measures themselves. Immobilization slows recovery and places the patient at risk of a far worse complication: venous thrombosis. Compression places the vulnerable flap at risk of vascular compromise and can be restrictive to patient mobility. Drains are uncomfortable, poorly tolerated, and dreaded by the patient.

More recently, several techniques for decreasing the incidence of seromas have been described, including quilting or progressive tension sutures, avoiding lymphatic disruption by altering the plane of dissection, and lipoabdominoplasty using discontinuous undermining through liposuction, as in this study. All have been shown to be successful at decreasing seroma rates and allowing drains to be safely eliminated. Regardless of which technique is used, inclusion of a seroma reduction technique should be included in the current-day abdominoplasty. The specific method selected by the individual surgeon to reduce seromas in their abdominoplasty really depends on two things: the surgeon’s understanding of the mechanism of seroma formation and their comfort with that particular surgical technique.

The mechanism of seroma formation in abdominoplasty is not certain, and several mechanisms have been suggested with varying amounts of supporting evidence. Some have suggested that seromas seen in abdominoplasty are a result of disruption of the lower abdominal lymphatics. If one believes this to be the primary mechanism, they may choose a technique that spares these lower abdominal lymphatic beds by leaving fat down or changing dissection planes to above Scarpà’s fascia.1,2 Certainly, this variation in technique is easy to adopt and adds no time. However, supportive evidence is limited. Analysis of seroma fluid speaks against this mechanism, as it has been shown to be an inflammatory exudate rather than lymphatic in nature.3

Surgeons who attribute seroma formation to the large area of dead space created with flap elevation continue to use drains. Others have begun to minimize direct undermining and add discontinuous undermining with liposuction, as in this study.4-8 Additionally, compressive dressings and limitation in post-operative motion are used with this technique to help prevent seroma formation in the absence of drains. The study demonstrates this to be an effective technique that seems relatively easy to reproduce, though there may be more of a learning curve than the author suggests.

It is our belief that the mechanism of seroma formation in abdominoplasty is the repeated disruption of the weak early healing between the flap and the abdominal wall related to abdominal motion. This results in inflammation and fluid production. This seems consistent with the inflammatory nature of seroma fluid9 and explains why more anatomically-mobile areas, such as the abdomen and upper back (as in latissimus flap donor sites), are so prone to this

Drs Pollock and Pollock are Clinical Instructors in the Department of Plastic Surgery, University of Texas Southwestern, Dallas, TX.

Corresponding Author:
Dr Todd A. Pollock, Department of Plastic Surgery, University of Texas Southwestern, 8305 Walnut Hill Lane, Suite 210, Dallas, TX 75231, USA.
E-mail: tap@drpollock.com
complication. It also explains why techniques that secure the flap to the deep tissue over multiple points of fixation, as with progressive tension sutures, are successful.\textsuperscript{9,11} This also eliminates reliance on compressive dressings and allows greater patient mobility.

A surgeon must feel comfortable with any surgical technique they plan to employ, and that technique should not add inordinate difficulty or time to a procedure. One must also be able to achieve the desired aesthetic goals. In this paper, the technique appears simple and repeatable. However, limiting the amount of undermining restricts the surgeon’s performance of what may be necessary to achieve an aesthetic result in favor of seroma prevention. In some patients, wide undermining is needed to achieve the aesthetic goals. This is commonly seen in the massive weight-loss patient who has multiple skin folds, which require redraping. Techniques that re-approximate and secure the tissues, like progressive tension sutures, do not limit the surgeon in achieving these goals. There is a small learning curve with progressive tension sutures (PTS), though it is minimal for a trained plastic surgeon and really amounts to becoming more efficient and fluid in suture placement.

In this study, complications in general were very low. However, two complications seen demonstrate another relative advantage of using a tissue approximation technique like PTS. Hematomas and abscesses, while never completely preventable, can be greatly limited in their degree by the compartmentalization created with PTS. In our practice, we have seen hematomas and abscesses limited to an area defined by four PTS, making them localized and more easily treated. In the lipoabdominoplasty technique described in this study, dead space is reduced. However, the entire space created is available for accumulation of blood or the spread of infection.

Finally, postoperative care and limitations must also be considered in comparing techniques. Today’s patients are anxious to return to work and resume their normal activities. Elimination of drains is an excellent first step. The technique described in this study still relies on extended compression and limitations in torso motion. This is in contrast to the tissue approximation technique, where there are minimal motion restrictions. Surgeon’s often do not fully appreciate today’s important patient goal of speeding both recovery and the return to normal activities.

As the old saying goes, “there’s a lot of ways to skin a cat.” There are several techniques that have been described that eliminate the use of drains, maintain low seroma rates, and improve patient experience. The author demonstrates, through a significantly large, consecutive series, an easy and reproducible technique for abdominoplasty that eliminates the need for drains while maintaining an acceptably low seroma rate. However, there are potential compromises that may be necessary when relying on any one method and no one technique is right for all patients. Aesthetic goals of creating an attractive and natural abdominal form must be considered a priority and not be limited by the seroma prevention technique used. The modern-day surgeon should be comfortable with a variety of techniques to call on as needed and remember that techniques can be combined. This study adds evidence to support lipoabdominoplasty without the use of drains as a viable alternative in drain-free abdominoplasty and offers one more option for our armamentarium.

Disclosures
The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

REFERENCES