

**John B. Tebbetts, M.D.**

2801 Lemmon Avenue W., Suite 300  
Dallas, Texas 75204-2356  
jbt@jbtserv.net

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### Prediction of Postoperative Seroma after Latissimus Dorsi Breast Reconstruction

Sir:

**W**e read with interest the article by Randolph and colleagues entitled “Prediction of Postoperative Seroma after Latissimus Dorsi Breast Reconstruction.”<sup>1</sup> Since the Breast Reconstruction Group was created in 1999, we have long developed and stressed the importance of the risk factors in breast reconstruction. In our previous conservative breast surgery reconstruction experience,<sup>2</sup> we demonstrated that the majority of latissimus dorsi complications occur in the initial postoperative period and that the rate of donor-site complications was considerably higher than the rate of flap complications. Despite the fact that the dorsal skin and subcutaneous tissue were closed in layers and double closed suction drains were used routinely in all patients, seroma was observed in 20 percent of patients and represented 50 percent of all complications. Concerning the potential risk factors, Randolph and colleagues did not mention the influence of obesity in seroma formation and we have some questions about this topic. In our study, the adjusted probability of a dorsal seroma was 0.44 (95 percent confidence interval, 0.24 to 0.67) for obese patients and 0.13 (95 percent confidence interval, 0.05 to 0.30) for nonobese patients. Similarly, Chang et al.,<sup>3</sup> in 75 extended latissimus dorsi flaps, observed that obesity was associated with a 2.15-fold increase in the odds of developing dorsal seroma. Did the authors have the same experience? Concerning axillary lymph node dissection, we would like to congratulate Dr. Randolph and colleagues for having confirmed the theory that total axillary lymphadenectomy is associated with seroma. We believe that disruption of the lymphatic channels associated with the linkage of the wide dead space of the axillary region to the major undermining in the latissimus donor site is the main reason for the increase in the incidence of seroma.

Despite this fact, in our study, the incidence of seroma formation was similar in patients who underwent total axillary dissection and in those who had sentinel lymph node biopsy ( $p = 1.000$ ).

We agree that a combination of identifiable risk factors, careful technique, and postoperative compressive garments may help to prevent this common postoperative complication. In addition, the use of scalpel dissection and the quilting stitches with resorbable sutures may be helpful in reducing dorsal seroma formation. Despite the high incidence of seroma, this complication can be treated on an outpatient basis. We believe that the latissimus dorsi flap is a consistent technique and has its place in the plastic surgeon’s armamentarium. The success of the procedure depends on patient selection, careful intraoperative management, and adequate postoperative care.

We have to congratulate the authors for sharing their experience with us.

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**Alexandre Mendonça Munhoz, M.D.**

**Cláudia M. Aldrighi, M.D.**

Breast Reconstruction Group  
University of São Paulo  
São Paulo, Brazil

Correspondence to Dr. Munhoz  
Division of Plastic Surgery

University of São Paulo School of Medicine  
Rua Oscar Freire 1702 ap. 78  
São Paulo 05409-011, Brazil  
munhozalex@uol.com.br

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### Postoperative Pain after Lipoplasty: An Underestimated Entity or a Misdiagnosed Complication?

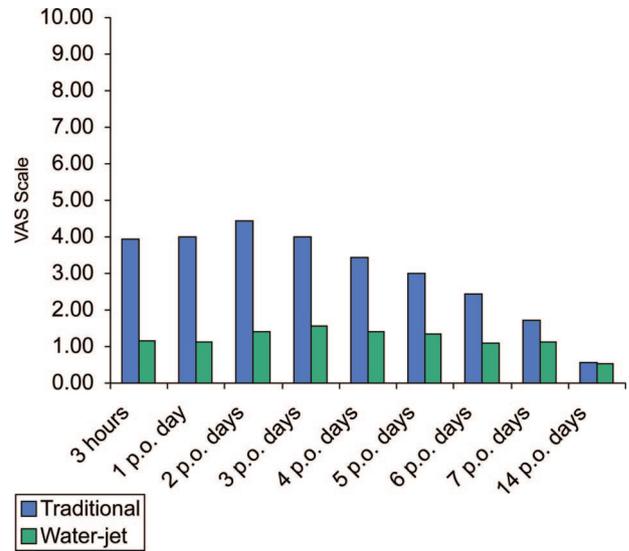
Sir:

**I**n their recent article, Dr. Manassa and coworkers focused on an important issue of aesthetic surgery.<sup>1</sup> In the past, when surgeons were asked to perform lipoplasty, whether ultrasound-assisted, power-assisted, or classic, the aesthetic results were always the primary endpoint determining the choice of the procedure to be used, while postoperative pain played little role in that process. Recently, researchers have been focusing more and more on the existence and the amount of pain after lipoplasty. The large retrospective study by

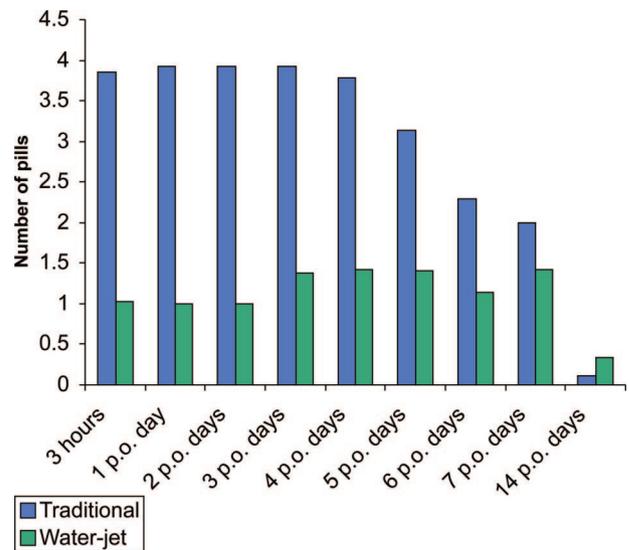
Manassa et al. describes only a small number of patients with this complication, and when it was present, pain was kept well under control with mild analgesics in the majority of cases. However, retrospective studies, even if they are based on a large number of patients, can hardly be used to determine the real incidence of a phenomenon. We believe, on the basis of our experience, that postoperative pain is often, if not always, present and is sometimes even debilitating. For this reason, we routinely screen new operative procedures for this parameter.

Last July, we began using, on an experimental basis, a new model of water jet-assisted liposuction (Bodyjet; Human Med, Schwerin, Germany). Briefly, this liposuction device uses a high-flow pressurized jet of water. The pressurized jet divides tissues more gently and in a more anatomic way than traditional lipoplasty, possibly maintaining blood vessels and nerves and leading to improvements in pain receptor stimulation. We obtained positive results from the first 10 patients in terms of postoperative pain, without sacrificing the aesthetic results. This led us to conduct a randomized prospective trial comparing water jet-assisted with traditional liposuction. We recruited 30 homogeneous patients for age, body weight, and body mass index and randomly assigned 15 of them to traditional lipoplasty and 15 to water jet-assisted liposuction. We recorded, as primary outcome measures, the operating time, postoperative pain, and final aesthetic results. Postoperative pain was recorded on a visual analog scale by asking to patients to give a value from 0 to 10 to the degree of pain perceived and by recording the numbers of analgesics used. Both these parameters were recorded at 3 hours after the operation, during every day for the first postoperative week, and finally after 14 days. Aesthetic results were evaluated by the two surgeons after 1 month.

We found that postoperative pain after traditional lipoplasty was present throughout the first postoperative week (Fig. 1). It reached its maximum during the second postoperative day (average, 4.43; SD,  $\pm 1.4$ ; range, 1 to 6), and subsequently decreased until the fourteenth postoperative day (average, 0.56; SD,  $\pm 0.53$ ; range, 0 to 1) (Fig. 1). Similar results were obtained with postoperative analgesic requirements (Fig. 2). Almost all patients (93 percent) referred pain at the sixth postoperative day, even if the average values were lower than those of the previous days (average, 2.43; SD,  $\pm 1.09$ ; range, 0 to 3). Forty-four percent of patients were free of pain after 2 weeks, and the remaining referred only a value of 1 (Fig. 3). Comparing these results with those obtained after water jet-assisted liposuction, we found a dramatic decrease in postoperative pain (on both the visual analog scale and analgesic pill requirements) with no difference in the final aesthetic results (Figs. 1 through 3). These different results were all statistically significant ( $p < 0.05$ , Student *t* test). Pain reached its maximum at 3 hours after the operation (average, 1.73; SD,  $\pm 0.83$ ; range, 0 to 3) and was almost inconsistent from the second postoperative day (Fig. 1). Similar results were obtained with postoperative



**Fig. 1.** Postoperative pain: visual analog scale. Green columns, water jet-assisted liposuction; blue columns, traditional lipoplasty.

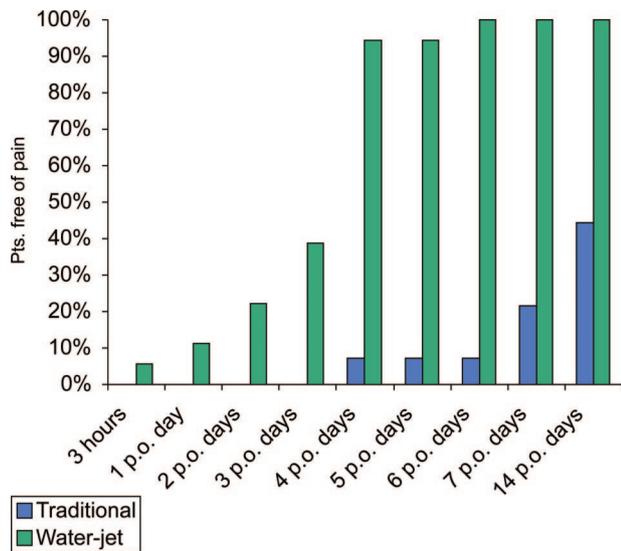


**Fig. 2.** Postoperative pain: number of analgesic pills required. Green columns, water jet-assisted liposuction; blue columns, traditional lipoplasty.

analgesic requirements (Fig. 2). Almost all patients (94 percent) were completely free of pain by postoperative day 4 (Fig. 3).

We believe that much is still to be discussed with regard to postlipoplasty pain, but we need to not underestimate this frequent clinical condition if we want to critically evaluate new techniques. We want to outline that the real incidence of pain after a particular procedure should be based on prospective and not retrospective trials, and to obtain validated results, these procedures should be compared with standard, traditional techniques.

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**Fig. 3.** Percentage of patients completely free of pain. *Green columns, water jet-assisted liposuction; blue columns, traditional lipoplasty.*

**Antonino Araco, M.D.**

Crown House Hospital  
Oldburi, Birmingham, United Kingdom

**Gianpiero Gravante, M.D.**

**Francesco Araco, M.D.**  
Department of Surgery  
University of Tor Vergata  
Rome, Italy

**Francesca Castrì, M.D.**

Crown House Hospital  
Oldburi, Birmingham, United Kingdom

**Daniela Delogu**

**Vincenzino Filingeri, M.D.**

**Valerio Cervelli, M.D.**  
Department of Surgery  
University of Tor Vergata  
Rome, Italy

Correspondence to Dr. Gravante  
via U. Maddalena 40/a  
00043 Ciampino, Rome, Italy  
ggravante@hotmail.com

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**Reply**

*Sir:*

I am thankful for the opportunity to respond to the letter by Dr. Araco et al. concerning the article entitled “Pain Management after Lipoplasty: A Study of 303 Cases” (*Plast. Reconstr. Surg.* 115: 1715, 2005).

We commend the doctors for their scientific approach to this study.

We would like to point out, however, that Dr. Gravante introduced a new liposuction technique (water jet-assisted liposuction) that he and his coworkers compare with conventional liposuction with regard to postoperative pain. To compare the two studies, it would be beneficial to know the mean volume that was suctioned in both groups and, moreover, which kind of analgesic pill (see Table 2 in our article) was given. For these reasons, I think it is difficult to compare the studies.

The study by Dr. Araco et al. proves that patients’ postoperative discomfort has reached the conscience of surgeons. We believe that more work needs to be done in this field.

We do agree that prospective studies are preferable to retrospective ones. Therefore, we conducted simultaneously a prospective study concerning the visual analog scale and pain after lipoplasty, which we will soon submit for publication.

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**Edouard H. Manassa, M.D.**

Kö-Klinik  
Clinic for Aesthetic Plastic Surgery  
Königsallee 60c  
40212 Duesseldorf, Germany  
dr.manassa@web.de

**Thinning of the Anterolateral Thigh Flap: Unpredictable Results**

*Sir:*

**W**e are writing in reference to the article entitled “Defining Vascular Supply and Territory of Thinned Perforator Flaps: Part I. Anterolateral Thigh Perforator Flap” by Nojima et al.<sup>1</sup> We congratulate the authors on an excellent series that furthers our knowledge of the vascular anatomy of the anterolateral thigh flap.

Studies examining vascular territories in cadavers are fraught with technical difficulties, and many of these were amply discussed by the authors (i.e., nonstandardized filling pressures, variable choke vessel response, and injectate viscosity). However, we would like to point out some additional issues.

McCraw and Dibbell<sup>2,3</sup> first described the concept of dynamic (during life) and anatomic (after death) vascular territories. Although it is not possible to accurately predict the effect of tissue death on a vessel’s vascular territory, it has been postulated that it may actually *increase* due to the lack of filling pressures in adjacent angiosomes. Therefore, we believe that the authors’ statement that “it is reasonable to assume that some decrease in skin surface vascular territory may occur in cadavers” may be inaccurate.

The authors make a valid point regarding discrepancy in the percentage of flap thickness remaining after thinning in our studies<sup>4,5</sup> (~21 percent versus 46 percent in Kimura et al.’s study). However, the goal with thinning is to make the flap thin enough for