GUIDELINES

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Letters

Induced Restrictive Lung Disease Secondary to Tissue Expansion in Ischiopagus Conjoined Twins (Invited Discussion)

The following communication is an invited discussion of the article "Induced Restrictive Lung Disease Secondary to Tissue Expansion in Ischiopagus Conjoined Twins" (Plast Reconstr Surg. 2009;123:1378–1383) but by mistake it was not published in the April issue. Our apologies to Dr. Amirlak and Dr. Gosain.

Sir:

Conjoined ischiopagus twinning (fusion at the hip) is a rare congenital malformation. A successful separation in which both twins survive and each has a good quality of life requires judicial and meticulous preoperative planning.[1,2] Despite favorable internal anatomy, soft-tissue coverage after surgical separation is one of the challenges faced by plastic surgeons, and their ingenuity in constructing a preoperative plan is paramount to the separation. Dr. Losee and his team are to be commended for considerable planning and effort in such a difficult case and for their early recognition of the resultant pulmonary complications and the subsequent steps taken to reverse the damage. The authors are also to be commended for their self-criticism of their management of the case, which will certainly be of benefit to future teams faced with the separation of ischiopagus twins.

Tissue expansion has been utilized successfully in a number of cases of ischiopagus twins, greatly facilitating the process of separation.[1–5] However, as the present case has demonstrated, various body structures and the underlying organ systems may react differently to expanders. Complications of pediatric tissue expansion in different regions of the body are well documented when expanders are placed to resurface giant congenital nevi, trauma, or secondary burn deformities.[6] However, there have not been enough cases in which expanders have been placed in different regions in ischiopagus twins to provide sufficient data for a systematic outcome analysis. Restrictive lung disease when using these expanders on the chest wall is sufficiently rare; it is to the authors' credit that they are reporting this complication so as to benefit those of us who may one day encounter this problem. Tissue expanders placed over other body cavities may also have sequelae. The more common use of pediatric tissue expanders is over the skull for scalp resurfacing. Although there is inevitably secondary deformity of the skull when the expanders are removed, this has not been reported to affect the function of the underlying brain. However, other organs, such as the lungs, may compensate for the pressure of the overlying expanders by altering the dynamics of respiration and oxygen exchange. This could be further complicated when normal physiology is altered, such as in ischiopagus twins. The plethora of stressful stimuli, such as general anesthesia and surgery, may in fact cause the demise of one or both of the twins.

Dr. Losee and colleagues report a challenging task of preoperative preparation and tissue expansion, in anticipation of final separation and soft-tissue coverage in 7-month-old ischiopagic twins. Two expanders were placed anteriorly overlying a portion of the chest and abdomen, and another two were placed on the posterior trunk of each twin. After expansion, the course was complicated by presumed iatrogenic restrictive lung disease, and the expanders had to be removed to allow the twins to recover from resultant pulmonary complications. Whereas the initial pulmonary complications were successfully overcome by deflating the expanders, the residual restrictive lung disease persisted even after expander removal. The effects of tissue expansion on restriction of pulmonary function in this case appear to be two-fold. First, the lung function improved significantly after deflation of the expanders, indicating that the problem was induced by restriction of the soft-tissue envelope. Therefore, to allow sufficient time for the skin and soft-tissue envelope to adequately stretch, one may consider a very slow expansion regimen, in contrast to expansion over a period of 6 to 8 weeks as has been done in similar cases.[2] Second, after removal of

the expanders, the existence of some residual restrictive lung disease may be attributed to atelectasis, but the deformational chest wall restriction seen on the computed tomography scan (see the authors' Fig. 3) might have also contributed. Whether slow expansion would prevent such chest wall changes is not known. Placement of a larger expander as proposed by the authors may also help to alleviate this problem. Alternate sites of expander placement should also be considered. If one were to place the expander away from the midline and the costochondral area, such as on the back, there might be less pliability of the chest wall, but there would also be less soft tissue available for final transfer. Placement of the expander on the abdomen and even intra-abdominal tissue expansion are other options, and they were used by Zuker et al.[3] in a case of ischiopagus conjoined twins with no significant harmful sequelae. Intraperitoneal air insufflations are at times used in adults when abdominal expansion would be necessary for repair of large hernias.[7] Use of this technique has also been reported for separation of ischiopagus conjoined twins.[8]

An alternative to the use of local and regional expanded flaps is the use of distant tissue. This could be done using an expanded full-thickness skin graft from a distant site and free tissue transfer with the possibility of pretransfer expansion to increase the available tissue for coverage. Tissue expansion over the back in the scapular regions should have minimal effect on the chest wall dynamics, and therefore harvest of expanded scapular and parascapular free flaps could be considered.[9] The use of free tissue transfer has also been reported in cases of conjoined twin separation.[10]

Positioning and ventilation also affect the final outcome. Placing the twins in a Clinitron bed (Hill-Rom, Inc., Batesville, Ind.) to offload deformational effects from external pressure may be of value. One would need to assess whether positioning could avoid pushing the expanders onto the chest, further restricting respirations. Keeping the twins intubated and mechanically ventilated during the expansions, as proposed by the authors, is certainly an option, especially when separation is a medical urgency. However, mechanical ventilation when restrictive pressure is applied to the chest wall may increase peak airway pressure and result in other complications, such as alveolar damage or pneumothorax. In addition, mechanical ventilation for prolonged periods may increase the chances of ventilator-associated pneumonia.

Although the separation of conjoined twins before age 1 year has been reported,[2] in retrospect one might choose to wait until the twins are older, with better developed respiratory muscles and chest wall dynamics, before placing tissue expanders over the chest wall. Despite several case reports of successful twin separation using tissue expansion over the chest and abdomen, postoperative death in unsuccessful cases may have resulted from unrecognized respiratory compromise secondary to restrictive lung disease. When tissue expansion alters the hemodynamics of underlying organ systems to the point that either separation or the life of either twin is being jeopardized, as described in this article, one may consider alternative approaches, minimizing or avoiding the use of subsequent tissue expansion. Coverage of the sternal defects using polyethylene,[4] polypropylene,[11] and biological mesh[12] has been used successfully in cases of conjoined twin separation. Skin cover of these biomaterials has been achieved using a combination of meshed allogenic skin, homograft split skin, and autologous cultured keratinocytes.[13] In such complex cases, every effort needs to be made to save composite tissues that may later be used for reconstruction during or after separation.[8,10,14] The extra limb that was removed due to unanticipated pressure exertion on the skin over the back expander may have aided in soft-tissue coverage during separation or postseparation reconstruction.

In conclusion, if tissue expansion is chosen for soft-tissue coverage for separation of conjoined twins, and if these expanders are placed on the more pliable surface of the chest wall, vigilant monitoring, which may include frequent pulmonary testing or computed tomography scanning, is warranted. If evidence of restrictive pulmonary disease is encountered, other alternatives should be considered. These alternatives include slow expansion, alternate expander design and/or placement, and delaying expansion until the twins are older. Should these methods still result in evidence of pulmonary compromise, then alternative methods, such as the use of synthetic or biological soft-tissue coverage, should be considered. Once again, we congratulate Dr. Losee and his team for bringing these issues to the foreground and for their critical assessment of the outcomes.

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Aquamid: Where Is the Reality?

Sir:

Contura International was informed about an article published in this *Journal* by Fabio M. Abenavoli, M.D., Andrea Servili, M.D., and Roberto Corelli, M.S. (Aquamid: Where Is the Reality? *Plast Reconstr Surg.* 2008;122:32e–33e). The article referred to a patient who apparently was injected with the Contura injectable filler Aquamid. This patient developed a swelling at the injection site 3 years after treatment. When a preauricular incision was made, and the area drained of some pasty liquid material, the authors then describe the drained material as containing methacrylate together with the capsule lining.

I would like to highlight the inconsistency in the article. Aquamid consists of approximately 97.5 percent nonpyrogenic water and 2.5 percent cross-linked polyacrylamide. Aquamid is a homogenous hydrogel and is free of microparticles. Therefore, the material drained from the patient could not have been Aquamid, since there was methacrylate present according to the authors.[1]

Another key point to note is that Contura recommends that Aquamid be injected in a linear, fan-shaped manner to enable tissue integration and thereby reduce the risk of adverse events. This injection technique minimizes the risk of encapsulation.[2,3] In the article, the authors' Figure 2 shows some pasty liquid material being removed; this is inconsistent with the above-mentioned Aquamid injection technique.

The safety and efficacy of Aquamid have been documented in several clinical trials involving more than 1000 patients. These clinical studies have been published in leading peer-reviewed journals.[4] To date, more than 300,000 injections have been performed, and the adverse events risk is at 1:1000, and is infection. These infections have resolved after treatment with antibiotics.

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Reply

Sir:

I read with great interest the letter by Dr. Ieva Ancorina-Stark, who proposes the analysis of the given topic from a perspective different from the one that I suggested in my article published in *Plastic and Reconstructive Surgery.*[1] Actually, I was contacted by the Danish maker of the product and I also recently spoke to their representatives, explaining to them that my article in and of itself is not to be considered an attack to their product but only as a warning to the several profiles of criticism to which their product can give rise.

Concerning the specific case of my patient, let me say that I only reported what happened: a lady came to me in the hospital asking to be helped out of the difficult situation she was living in and specifying that her problem was caused by an infiltration with Aquamid.

Anyway, in recent weeks, another, similar case has come to my attention. In this case, a 62-year-old patient had undergone an infiltration with polyacrylamide in the zygomatic area 1½ years earlier. She was sure about the product with which she had been infiltrated, as the doctor had given her the name of the product. The product moved into a lower position on the right side, so that the area presented itself as fluctuant and swollen

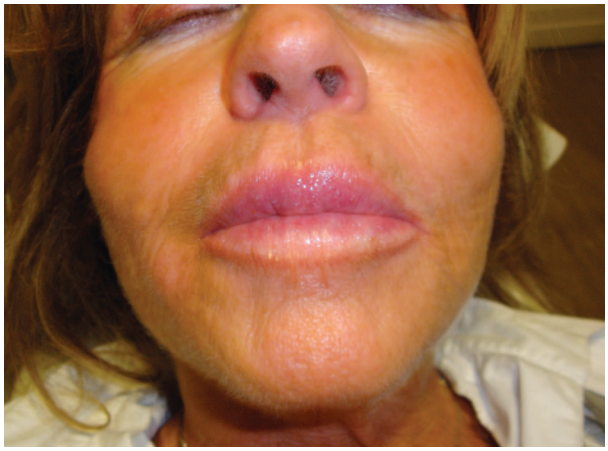

Fig. 1. A 62-year-old patient who had previously been infiltrated with polyacrylamide in the zygomatic area.

(Fig. 1). There was no infection. I started a treatment with corticoid, and I am following the evolution of the local situation.

There are a number of factors that can contribute to the insurgence of the described collateral effects. Among the several factors it is possible to enumerate, for example, is the incorrect use of the product or an exaggeration in the dose of it. What is certain, however, is that products such as Aquamid and Formacril (or similar products) must be used with great caution and patients must be advised of the chance of the occurrence of the above-mentioned collateral effects, even beyond the general warnings indicated and described by the pharmaceutical makers.

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Suspension of the Lower Lid in Paralytic Lagophthalmos

Sir:

I read with interest the article entitled "Minitendon Graft Transfer for Suspension of the Paralyzed Lower Lid" by Terzis and Kyere.[1] The aim of surgery in lagophthalmos is to find a balance between eye closure and resting lid positions so that the aesthetics and functional goals are achieved to a satisfactory level. I have some experience with paralytic lagophthalmos secondary to leprosy. For static procedures, I have been using a fascial sling for the lower lid and temporalis transfer for the dynamic procedure. I prefer the fascia lata because I do not want to lose an active muscle tendon unit, for obvious reasons. Whether to spare the palmaris longus, if present, is a difficult decision in leprosy. The nerve transfers, direct neurotization of the orbicularis oculi and free muscle transfers, are not considered because of uncertainty regarding the extent of damage to the facial nerve and also the potential possibility of a reversal reaction and further nerve damage. Gold plates are either not available or not affordable by the patient.

Several of my patients had associated facial lesions, with consequent atrophy of the skin and underlying tissues deep to the lesion during healing. Therefore, the tissue turgor is not present, even in younger patients with facial lesions.

The authors could reduce lid lag to 6 mm and scleral show to 0.25 mm in cases in which only minitendon graft suspension has been performed. What the procedure could achieve is reduced dryness of the cornea and improved function of the lacrimal pump. The number of operations performed in the eye spring and gold weight group suggests that a delicate balance is required, and that requires special skills that come with time.

I am not surprised to note that that there was no "differential effect" and that scleral show was reduced postoperatively at equivalent rates. This was probably because of the better approximation of the lower lid to the globe, creating a depth in the lower conjunctival fornix. There appears to be a selection bias in their series, because the patients with more lag were chosen for an eye spring or gold plate along with a minitendon graft sling and those with a lesser degree of lag were given only the sling. The minitendon graft–alone group had younger patients. In older patients, there may not be much tissue turgor and, with subsequent atrophy of the orbicularis oculi fibers and subcutaneous tissues due to aging, the support provided by the sling may not be adequate to keep the lower lid well in contact with the eyeball and the lacrimal pump functioning properly. Even though the results tend to improve with time due to cicatrization in the graft track, the sling loses some of its tension in due course.

Eye closure while sleeping is also important. When the patient is standing or sitting, the effect of gravity helps in partial closure with lid-loading procedures. When the patient is sleeping, this benefit no longer prevails, and the eye is not fully closed. If the Bell phenomenon is not good, the lower cornea is at risk of becoming exposed. Even with temporalis transfers, the problem of residual lag persists, especially during sleep. Thus, all these patients are advised to cover their eyes with a cloth while sleeping, at least in those patients who live in a rural area, where the environment is dusty and storms occur. I am not quite sure whether a sling with

temporalis transfer will take care of the problems arising with the age of the patient.
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Reply

Sir:

I read the letter by Dr. Malaviya regarding the article "Minitendon Graft Transfer for Suspension of the Paralyzed Lower Eyelid: Our Experience" (*Plast Reconstr Surg.* 2008;121:1206-1216) and I have several comments.

First, harvesting the palmaris tendon from the nondominant upper extremity is an easy procedure that, other than the two or three tiny incisions in the distal forearm, carries nil morbidity, with zero functional sequelae to the hand.

Second, in 1981, I worked for several months on leprosy patients with Dr. Paul Brand in south India. This population of patients is quite different from the patients described in the article published in April of 2008. Working under relatively primitive conditions, our surgical treatment of leprosy patients was limited to nerve decompressions to minimize the effects of the leprosy sensory neuropathy. In contrast, nerve transfers, direct neurotization of the orbicularis oculi, pedicle, and free muscle transfers are "usual and customary" procedures in North America, and in experienced hands working under high magnification, further nerve damage is not seen; otherwise, we would not be able to perform these procedures on a routine basis.

Finally, there was no selection bias in the April of 2008 series. This was a retrospective study of all cases performed over a 20-year period. The charts of all cases were reviewed by the second author (S. A. Kyere), and behavioral grading was carried out by independent reviewers blinded to the patient demographics and type of treatment that each patient had. The final observations and evaluation of results were offered in detail to our readers.

It is reasonable that patients with a greater deformity (more lag) were found to have undergone more procedures as compared with patients with smaller degrees of lagophthalmos and scleral show. The decision making of what each patient needed was established preoperatively, and the fact that 40 percent of the cases in this series were of a developmental cause with smaller deformities (lesser lag) may explain why some of them needed lesser procedures (only minitendon graft suspension).

Finally, none of the treated patients in the series published in the *Journal* in April of 2008 had their symptoms aggravated by sleep. None of the patients needed to cover or tape their eyes while sleeping *after* the eye reanimation procedures, but many had to protect their eyes preoperatively from dryness and noxious stimuli and used lubrication therapy and eye ointment at night.

I have no personal experience with facial paralysis in leprosy cases, as this entity did not present itself in the patients to whom I was exposed in 1981, but I would be very interested to read the experience and unique problems associated with this entity.
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A Prospective, Randomized, Double-Blind, Controlled Trial of Continuous Local Anesthetic Infusion in Cosmetic Breast Augmentation: What Lies beyond Data?

Sir:

We read with interest the article published by Dr. Kazmier and colleagues.[1] Although the authors are to be commended for their aim of conducting a prospective, randomized, double-blind trial in plastic surgery, there are several issues with both the design of the study and the statistical analysis that have not been pointed out by subsequent commentary.[2]

As for study design, the major issue is that this study is not adequately powered. In fact, for a particular finding to be claimed as significant (or not), the study must have enough power. In this particular case, the authors did not report any trial with bupivacaine 0.5%. However, if they had aimed at a reduction in visual analogue scale score similar to the first study they cited,[3] two groups of at least 30 patients each would have been required (considering the "standard" α error of 0.05 and a power of 0.8).

Another critical point is the statistical analysis. Despite its existence for many years, the importance of nonlinear mixed-effects modeling in pain studies has been recently reasserted.[4] Nowhere is the importance of a method that accounts for both interindividual variability (e.g., unique sensitivity to pain) and is able to characterize the time course of pain in different patients and intraindividual variability (various sources of "noise") as critical as in pain trials. This important study may probably benefit from such analysis.

Appropriate statistical analysis of data from trials is crucial to draw adequate conclusions, especially in this case, where postoperative pain and patient comfort (crucial topics in plastic surgery) are addressed. We hope our suggestions will be useful to other authors planning similar trials in plastic surgery.
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DISCLOSURES

None of the authors has a conflict or any financial interest with regard to the information discussed in this communication.

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Breast Lift and Reduction: How We Do It

Sir:

Recently, Ahmad and Lista evaluated the clinical results of 49 patients who underwent vertical scar reduction mammaplasty, analyzing the fate of the nipple-areola complex position. Compared with preoperative markings, they observed that the nipple-areola complex was located on average 1 cm higher at 4-year follow-up, and the average distance from the inframammary crease to the inferior border of the nipple-areola complex had decreased 0.4 cm.[1] We would like to report our clinical experience with more than 100 cases of customized lift and reduction mammaplasty by using a inferior dermal flap and either vertical scar[2] or round block[3] technique.

We obtained reduction measurements of nipple-areola complex displacement. We used a simple method: we consider the anatomical variability, achieving tissue removal calibrated on a single patient. Preoperative marking starts with the patient in the upright position; considering standard lines from the clavicle to the nipple, the new nipple position is marked at 18 to 22 cm, according to the patient's degree of ptosis. Then, with the patient lying down, we consider 10 to 11 cm of distance from the medial sternal to the projection of the new nipple on the mammary crease; also, the new fold is considered after marking of the future vertical scar (≤6 cm). Skin periareolar excess is evaluated by means of the pinch test in order of appropriate resection, drawing a rhomboidal area.

The operation starts with deepithelialization of this area and dermal flap harvesting from the inferior pole. Glandular resection is performed according to the traditional inverted V shape, saving the dermal flap that was previously deepithelialized. The medial and lateral edges of the inverted V are put back together, and the dermal flap is fixed with three interrupted resorbable stitches to the new mammary crease to hold the inferior pole of the new breast. This is to prevent the herniation of the lower pole that often occurs with vertical scar techniques. Thus, the dermal flap is anchored to a new crease, with a distance never more than 6 cm to the inferior border of the nipple-areola complex. It then makes a breast cone again. A round block is performed around the areola, followed by vertical scar closure.

This procedure offers many advantages and few complications.[4] Fifty-two women underwent our vertical scar reduction mammaplasty, which resulted in good reshaping of the mammary cone and ptosis resolution. A major advantage is that the cone projection is exceptional and long lasting. The patients had the following measurements taken of their right breast preoperatively and at postoperative follow-up at 4 years: the distance from the clavicle to the nipple, and the distance from the inframammary crease to the inferior border of the nipple-areola complex. We observed that the nipple-areola complex was located on average 0.6 cm higher at 4-year follow-up and that the average distance from the inframammary crease to the inferior border of the nipple-areola complex had decreased 0.2 cm. Therefore, we believe that a technique that combines the advantages of a supporting dermal flap and vertical scar and round block techniques appears to produce superior results. This technique offers the safety of the pedicle, affords immediate control over breast shape, limits the scar to the areola with a vertical to the inframammary fold (combining the advantages of the round block and vertical scar techniques), and is long lasting because of its supporting inferior dermal flap. This dermal flap further improves the projection and avoids herniation and flattening.

In addition, we analyzed skin and glandular resection during the preoperative evaluation. We attempted to remove most of the extra skin with the round block and to avoid breast flattening using the vertical scar, to give projection to the breast, and the dermal flap was very helpful in maintaining the glandular tissue in the new position and the new mammary crease. Moreover, the dermal flap anchored to the inframammary crease works against the weight of residual tissue, maintaining the crease at the desired position, with a natural result. We found this very useful in cases with weight loss after breast reduction, which is often followed by ptosis.

This custom-made technique is safe and versatile for both breast reduction and mastopexy, can be modulated on each patient, and results in a successful aesthetic outcome with minimal scar (vertical of just 5 to 6 cm) and suitable mammary cone projection. This very good projection, without lower pole flattening, is stable and long lasting at both early and long-term follow-up. Thus, it achieves the four successful specific elements described by Hammond: parenchyma and fat must be removed to reduce the volume of the breast; tissue must be removed in a way that preserves blood supply to the nipple and areola; an aesthetic shape must be created that is stable and long lasting; and scars must be acceptable, both in location and in appearance.[5] The drawbacks are an unaesthetic aspect early postoperatively because of edema of the upper pole, and intractability of gigantomastia.

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Reply

Sir:

We appreciate the interest Dr. Monarca and colleagues have shown in our article describing the fate of nipple-areola complex position and inferior pole length after vertical scar reduction mammaplasty.[1] They should be commended for their effort and dedication in following their patients for 4 years to collect the useful information reported in their letter. Dr. Monarca and colleagues found that 4 years after using their breast reduction technique combining a vertical scar and round block technique with an inferior dermal flap, the nipple-areola complex was located on average 0.6 cm higher. They also found that the average distance from the inframammary crease to the inferior border of the nipple-areola complex had decreased 0.2 cm. Their findings corroborate those reported in our study, namely, that the nipple-areola complex was located significantly higher and the distance from the inframammary crease to the inferior border of the nipple-areola complex was significantly shorter at long-term follow-up.[1]

Several techniques for breast reduction have been described that use dermal flaps[2] or a "dermal bra,"[3] including a technique using a dermal suspension flap in vertical scar reduction mammaplasty[4]; all report good aesthetic results. Although it may be possible for a dermal flap to help control immediate breast shape, limit vertical scar length, and prevent inferior pole "herniation and flattening" during breast reduction as reported by Dr. Monarca and colleagues, our experience has shown that these maneuvers are not a necessary step in achieving excellent long-term results in vertical scar breast reduction. We have clearly demonstrated maintenance of inferior pole shape with simple suturing of medial and lateral pillars, a technique that greatly simplifies the procedure when compared with dermal suspension methods. We believe that it is the inferior wedge resection and subsequent suturing of the medial and lateral pillars that result in coning of the breast and are responsible for the long-term shape.[1] In particular, the parenchymal pillar sutures through the superficial fascial system are critical for providing support for the remaining breast tissue, and likely help to prevent pseudoptosis. In addition, vertical scar techniques do not violate the structural integrity of the inframammary crease, thus preventing downward migration of the inframammary crease and subsequent pseudoptosis, a problem commonly seen with breast reduction techniques that involve a horizontal scar.

In our 20-year experience of more than 2000 patients, we have found that our technique[5] using a superior or medial pedicle to transpose the nipple-areola complex, allowing for the critical inferior wedge resection and subsequent suturing of the medial and lateral pillars, results in a narrower, more projecting breast, superomedial breast fullness, minimal scar burden, and long-lasting breast shape, which are the sine quibus non of aesthetic breast surgery.

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Use of Preoperative Doppler for Distally Based Sural Flap Planning

Sir:

We read with interest the article entitled "The Distally Based Sural Flap" by Follmar et al.,[1] in which an excellent, comprehensive examination of all aspects of the reverse flow sural artery flap has been provided. We would like to comment on preoperative planning of the reverse flow sural island flap, which is actually considered a reliable method for covering defects of the lower third of the leg.

Various studies on cadavers have demonstrated that the anatomy of the sural nerve and its vascular axis can be inconsistent. The vascular axis of the sural nerve can be either a true artery or an interlacing network; this network of vessels connects the distal portion of the superficial sural artery with the perforators of the peroneal artery and opens up only under increased pressure conditions. We believe in the need for a preoperative study of the main vascular axis of the flap, but we consider as too invasive the use of preoperative selective angiography to locate and determine the size of perforators.

In 1994, Hasegawa et al.[2] affirmed that the pivot point of the flap must be at least 5 cm above the tip of the lateral malleolus, but, as demonstrated by Zhang et al.[3] in 2005, the vascular pivot point of the distally based sural flap can be safely designed even 1.5 cm proximal to the lateral malleolus. We believe that individual skin marking is fundamental in the preoperative phase because preestablished landmarks, based on previous anatomical studies, are out of date.

Yeng and Wei,[4] considering the previously reported high failure rate in performing this flap because of variable vascular anatomy, advised the use of preoperative Doppler examination to identify perforators and their distance from the lateral malleolus in each clinical case. Bocchi et al.[5] stated that the constant use of a Doppler probe during the preliminary evaluation provides more safety to the surgical procedure and increases the success rate of the sural artery flap. We suggest the use of preoperative Doppler examination during flap planning, with the following objectives:

1. Exact determination of the most distal peroneal artery perforator(s) emergently, which is the flap pivot point. Figure 1, *left*, shows the Doppler determination of the most distal perforator.
2. Skin marking of the course of the sural nerve accompanying vessels in the lower leg; in doing that, it is possible to encounter a mute tract at the level of the vascular network that connects the superficial sural artery and the course of the peroneal artery perforator(s) course; the Doppler signal could be found again proceeding along the course

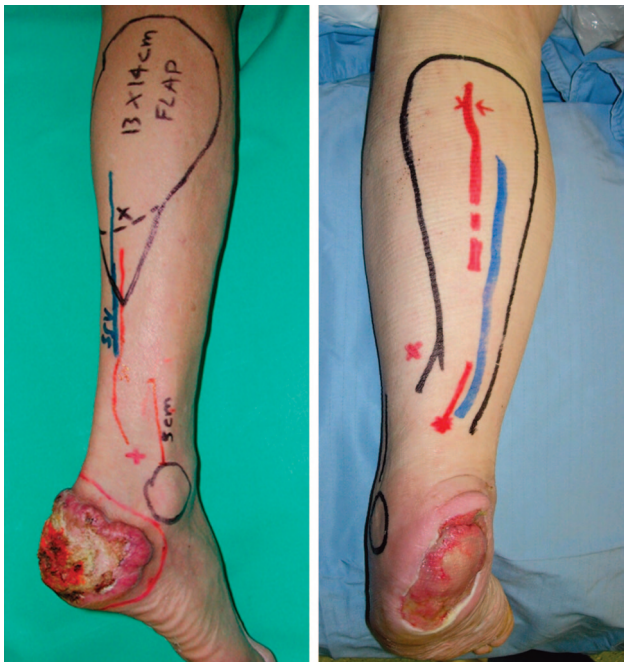

Fig. 1. (*Left*) Perforator identification. Doppler determination of the most distal peroneal artery perforator (*x*), in contrast to a preestablished landmark (5 cm above the lateral malleolus). (*Right*) The mute tract. Doppler preoperative planning showing the sural artery, short saphenous vein, and flap perforators. Note the mute tract at the level of the vascular network between the superficial sural artery and the peroneal artery perforators.

of the nerve in those specific circumstances. Figure 1, *right*, clearly shows the mute tract.

3. Determination of sural artery skin perforators in the proximal third of the leg, when present, on which the flap island can be centered. This design makes the harvesting of the flap quicker and safer.

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Reply

Sir:

I thank Dr. Schonauer and colleagues for their kind remarks regarding the article recently published in the *Journal*.[1] Multiple articles addressing preoperative planning and modified surgical techniques have been published with the main goal of improving flap survival.[2]

The sural flap has been widely accepted as a suitable alternative, specifically, if free tissue transfer to the distal lower extremity is not an option. However, complications occur mainly in patients with peripheral vascular disease and other comorbidities.[3] The comments of Dr. Schonauer and colleagues are a helpful contribution and should be taken into consideration when planning a future distally based, reversed sural flap.

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The Dilemma of the Expert Witness: Part II

Sir:

I enjoyed the editorial entitled "The Dilemma of the Expert Witness: Part II," in the July 2008 issue of *Plastic and Reconstructive Surgery*. As you know, a number of our colleagues have become expert witnesses as a main source of revenue. Nonetheless, most experts in our field do not rely on testimony for their practice flow. Most of our colleagues donate on a yearly basis to their undergraduate school or medical school.

Whenever I have had the occasion to be placed in the potentially embarrassing position of receiving remuneration for giving testimony, I simply state the fact that I donate the entire expert testimony fee to one of my prior institutions of learning. I believe that it is certainly appropriate to divert this controversy during cross-examination by the opposing attorney, although a number of our colleagues have become expert witnesses and earn a significant portion of their income from giving testimony. I recognize this tact may be a very prudent way of deflecting an attorney's persistent attempt to embarrass a plastic surgeon and serve a benefit to our prior educational centers.

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Correction: Treating Chronic Wound Infections with Genetically Modified Free Flaps

The article entitled "Treating Chronic Wound Infections with Genetically Modified Free Flaps," by Shadi Ghali, Kirit A. Bhatt, Marlese P. Dempsey, Deidre M. Jones, Sunil Singh, Shahram Arabi, Peter E. Butler, Robert L. Gallo, and Geoffrey C. Gurtner (*Plast Reconstr Surg.* 2009;123:1157–1169), was published without an abstract. A corrected version of the article that includes the abstract is available online at the *Journal*'s website (www.PRSJournal.com).

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