# Correspondence and Brief Communications

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## THE PLASTIC SURGEON AS AN ARTIST

*Sir:*

It was with great interest that I read the editorial written by Dr. Robert Goldwyn entitled "The Plastic Surgeon as an Artist" (*Plast. Reconstr. Surg.* 112: 327, 2003). We, as plastic surgeons, have been able to confabulate several myths that have permeated into the public's mind as if they were virtual truths. One is that to be a plastic surgeon one has to be an artist, and the other is that only plastic surgeons can sew wounds so that the incisions will never be seen. The latter is why we often get called to emergency rooms to sew up 1- or 2-cm lacerations that can easily be taken care of by the emergency room doctors, creating a nightly nuisance of unnecessary wake-up calls. The former is one that has persisted for many years, and with great glee we seem to perpetuate it. When a patient says, "Well, doctor, you must be an artist as well," we tend to ponder with a far off look and say, "Yes, to a certain extent, I am." The real answer is that to be a plastic surgeon you have to be first a *surgeon*, not an artist. I do not think that Picasso would have been a good plastic surgeon, and I'm not sure that any of us can really qualify as Rembrandts. However, I think we have to stress the fact that we are innovators in a sense, because we tend to work in a three-dimensional biological and physiological context that sometimes challenges our surgical perspective to design creative ways of transferring skin, reconstructing defects, and creating better aesthetic and reconstructive results for those patients who seek our help.

We do ourselves, as well as the public, a disfavor by saying that the "artistry" that was innately infused into us during our residency program allows us to perform these miraculous operative procedures. Once again, to be a good plastic surgeon you have to have a good pair of hands, you have to have judgment and knowledge, and above all, you have to be able to perform your craft appropriately on the patient you are operating on. The fact that you can draw a straight line or a dotted purple line on skin to make incisions does not generate an artistic sense or add to your surgical capabilities.

Now looking at it from the other side, as an individual who is totally "right" brain, I must say that the fact that I am able to paint, draw, and enjoy art history does not negate the fact that I am a plastic surgeon. Art is something that you create for your own self-fulfillment. It is something that is done for satisfaction and pleasure, and certainly for most of us, it will not be an alternative profession.

We may hang our sculptures, our paintings, and whatever other artistic outlet we may have in our offices, and I hope we do that because there is no other wall space on which to display our productivity rather than because we wish to promote our artistic alter egos in the hope that it will suggest to our patients that we are truly Olympian surgeons/artists, because subsequently, in the postoperative period, the patient will realize that our capabilities as surgeons may or may not be equivalent to our artistic riposte.

Therefore, be proud of your artistic capabilities, desires, and productivity, but do not put them forward as a preemptive fact of your surgical capabilities. As my father once said, "be good at one thing, but try other venues for self-improvement." So be a good surgeon and be proud of your art for your own satisfaction.

DOI: 10.1097/01.PRS.0000110764.50411.2D

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## LIDOCAINE DOSING DUALITY IN LIPOSUCTION: "SAFE" ONLY WHEN HIGHLY DILUTED

*Sir:*

Lest we are lulled into complacency, the authoritative Cosmetic Follow-Up article by Rohrich and colleagues[1] merits amplification of the safety constraints on lidocaine dosing for suction-assisted lipoplasty. Like Dr. Jekyll and Mr. Hyde, lidocaine can be both caring healer and fickle killer. But unlike that storied duo, lidocaine dosing is not a matter of dual drug personalities. Rather it is one of dual drug absorption kinetics. Allow me to clarify.

In their daily practice, aesthetic surgeons administer two altogether different dosage forms of lidocaine: (1) undiluted straight out-of-the-bottle (0.5%, 1%, or 2%) commercial lidocaine for local anesthesia, as in superficial procedures on limited surface areas; and (2) 10-fold diluted (0.1% or less) lidocaine for wide-area infiltration analgesia, as in suction-

assisted lipoplasty. Whenever lidocaine is used undiluted, that is, at full out-of-the-bottle strength, the U.S. Food and Drug Administration (FDA)–recommended dose limit (with epinephrine) of 7 mg/kg remains in force.[2] For if more than 500 mg of undiluted commercially bottled lidocaine is injected, the likelihood of toxic systemic reactions, such as convulsions or cardiotoxicity, can be expected to rise exponentially with increasing doses.[3,4] Conversely, when lidocaine is diluted many-fold to a 0.1%, or lower, concentration (with epinephrine added to retard lidocaine absorption and provide a near-bloodless surgical field), the "safe" lidocaine dose evidently rises several-fold to at least 35 mg/kg, and perhaps even higher yet.[1]

At the root of this seeming dosing paradox lies tissue buffering: it appears that up to 1 mg of lidocaine is bound quite firmly to 1 g of subcutaneous tissue (not incidentally, 1 mg/g is equivalent to a 0.1% drug concentration).[5] Tissue buffering explains why so-called tumescent anesthesia provides analgesia through the night, why lidocaine blood levels rise slowly to a sustained low plateau rather than to a rapid tall peak, and why doses many-fold higher than those recommended by the FDA are tolerated with relative impunity.[6]

Predicting lidocaine kinetics becomes even more challenging when suction-assisted lipoplasty with dilute local anesthetic is combined with procedures in more sensitive areas, such as the breast or face, where stronger local anesthetic concentrations are required to provide painless surgery. Under these circumstances, the lidocaine blood level becomes a complex jumble of peaks and plateaus corresponding to, respectively, rapid and slow drug absorption. The outcome—in terms of patient safety—is well nigh unpredictable.

I raise this lidocaine dosing duality because blanket statements such as "55 mg/kg lidocaine is safe" all too readily lead to the flawed, potentially lethal, assumption that lidocaine at *any* concentration can be given safely at these huge doses. Far from it—the putative safety of titanic lidocaine dosing applies solely to lidocaine diluted 10-fold or more, with epinephrine added, and most certainly does not extend to the commercially bottled (0.5%, 1%, or 2%) lidocaine dosage form. I fear that at any moment a hapless patient might be anesthetized with 200 ml of 1% out-of-the-bottle lidocaine (2000 mg; about 25 mg/kg) for cosmetic facial or breast surgery, in the mistaken notion that the FDA's safety limits for commercial lidocaine have been lifted from 7 mg/kg to 35 mg/kg. Not so!

DOI: 10.1097/01.PRS.0000118252.77597.D6

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## REPLY

*Sir:*

Dr. de Jong's comments are well taken and are very important to point out. Obviously, the reference to the safety of high dosages of lidocaine in our update on infiltration in suction-assisted lipoplasty[1] is predicated on its use within the context of a wetting solution where it is diluted and where epinephrine is added (we use 30 cc of 1% plain lidocaine and 1 cc of 1:1000 epinephrine per 1000 cc of Ringer's lactate solution). It is our omission that we did not stipulate that these dosages of lidocaine have only been shown to be safe when used in this fashion. We are in complete agreement that this should not be misconstrued to be applicable to undiluted lidocaine solution as is used commonly as a nerve-blocking agent.

We would like to take it a step further and reinforce that the patient's comorbidities must be strongly taken into consideration as well, before large doses of lidocaine are used. Certain factors, such as renal and hepatic dysfunction, congestive heart failure, obesity, hypoalbuminemia, active smoking history, advanced age, sex, and metabolic abnormalities (hypocalcemia or hypophosphatemia), can all affect the potential toxicity of lidocaine through its ability to bind proteins or to be cleared from the metabolism (and therefore change its plasma concentration).[2] Furthermore, medications such as tricyclic antidepressants, cimetidine, oral contraceptives, beta-blockers, and diet pills can similarly affect the protein and plasma concentrations, drastically altering the potential for lidocaine toxicity in this subset of patients.[2]

Dr. de Jong is correct, and we must be absolutely clear that the dosages of lidocaine that have been reported in both the plastic surgery and the dermatology literature are specific to its use for subcutaneous infiltration with the addition of dilute epinephrine. We look forward to Dr. de Jong's upcoming article on the "lidocaine dichotomy," and thank him for bringing this matter to the forefront, where it should get the attention it deserves.

DOI: 10.1097/01.PRS.0000118252.77597.D6

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## COSMETIC BOTOX INJECTION MIMICKING MYASTHENIA GRAVIS

*Sir:*

Since botulinum toxin type A injection (Botox, Allergan, Irvine, Calif.) was approved for cosmetic treatment of glabellar lines, many patients have undergone this procedure for facial wrinkles. In 2001, 1.6 million injections were performed, and Botox may be the most frequently used off-label cosmetic product.[1] We report a complication of this treatment that may mimic a neuro-ophthalmic disorder.

A 70-year-old woman, the mother of a coworker, presented to the first author with a chief complaint of double vision, which had started a few days earlier while she was driving from Florida to Baltimore, Maryland. It was not associated with any other symptoms. On examination, she was noted to have ptosis of the right upper lid, which was not present in her driver's license photograph. Esotropia and hypertropia were present. The results of the remainder of the examination were within normal limits. The diagnosis of myasthenia gravis was suspected, and an ice test was performed.[2] The ptosis resolved after ice application. The patient was referred to a neuro-ophthalmologist for further evaluation.

Before this second evaluation, the patient recalled that she had undergone Botox Cosmetic injections around her lids 6 days before the onset of her symptoms. The injections were given by the dermatologist for whom she works. At the second evaluation, she was noted to have 3 mm of ptosis, with improvement in ptosis after ice application. She had esotropia and hypertropia, with identical measurements in all fields of gaze and normal ocular motility. The results of the remainder of the examination were normal. Given the patient's history, and the strabismus not following a pattern consistent with a cranial neuropathy, it was felt that the diagnostic considerations included a Botox effect and ocular myasthenia. She returned 2 weeks later, by which time the magnitude of the esotropia and hypertropia was less and the ptosis had resolved. She returned to Florida and noted subsequent resolution of her double vision. When she told the dermatologist about her symptoms, he reported that of the hundreds of injections he has given, the only other patient to develop similar symptoms was his ex-wife!

Physicians seeing patients with new-onset ocular motor disorders should inquire about earlier Botox injections.

DOI: 10.1097/01.PRS.0000118253.77597.9F

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## PERIPHERAL FACIAL NERVE PARALYSIS SECONDARY TO MANDIBULAR FRACTURE

*Sir:*

A 28-year-old woman was admitted to our emergency department in August of 2001 with a facial injury as a result of a traffic accident. The physical examination showed important swelling of the left side of the face with severe malocclusion, dentoalveolar fracture of the mandibular incisors, and avulsion of teeth 24 and 25. Upon arrival in the emergency service, the patient presented total left facial paralysis (House-Brackmann grade 6/6), which had developed immediately after trauma (Fig. 1, *left*). Orthopantomography and computed tomography revealed bilateral condylar, right parasymphysis, and left coronoid fractures (Fig. 2). No skull fractures were observed. On an emergency basis and under general anesthesia, the fractures were reduced and immobilized with miniplates via the oral approach (parasymphysis fracture). Occlusion was maintained in class III with an elastic intermaxillary block. Along with intravenous antibiotics, the patient was prescribed 120 mg of methylprednisolone for 7 days. On the fifth day of admission, a repeated computed tomography study confirmed the absence of petrosal fractures. On day 13, electromyography revealed a marked reduction in evoked potential voltage of the facial muscles, compatible with subtotal axon pathology. The interdental fixation prevented chorda tympani testing. Both eardrums were intact, with bilateral tonal and verbal normoacusia.

Four months after the traffic accident, the patient continued to experience total left facial paralysis as well as mandibular retrusion with displacement to the left of the mandibular midline. A repeated electromyography scan established subtotal wallerian degeneration with minimal changes with respect to the previous exploration. In view of the lack of spontaneous recovery, a second intervention was performed in which the trunk of the facial nerve was identified at its emergence from the stylomastoid foramen, adopting a transparotid approach and confirming full integrity of the nerve. However, macroscopically, the nerve color and thickness appeared abnormal. In some zones, different branches appeared enveloped by fibrotic scar tissue. Microsurgical release of these zones was carried out. Simultaneously, and using the oral approach, a sagittal osteotomy of

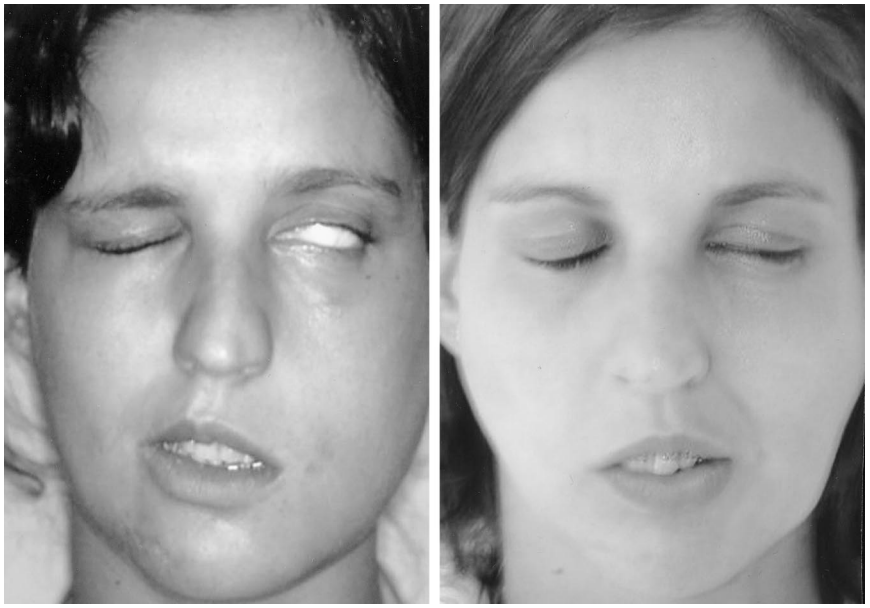

FIG. 1. Evolution of left facial paralysis after multiple mandibular fracture. (*Left*) Four days after trauma. (*Right*) Eighteen months after the accident.

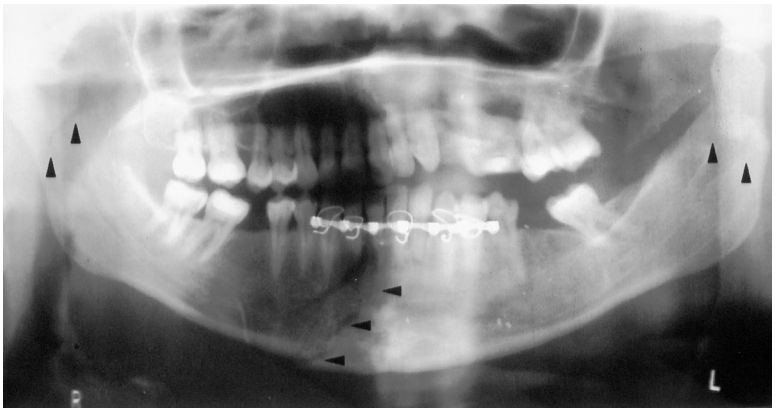

FIG. 2. Orthopantomographic image shows the multiple mandibular fractures (*arrows*).

TABLE I
Facial Paralysis and Mandibular Fractures: Case Reports in the Literature

| First Author (ref.) | No. of Cases | Onset of Paralysis | Course | Condylar Fracture |
|---|---|---|---|---|
| Milford[3] | 1 | Deferred (3 days after trauma) | Satisfactory (9 mo) | Yes |
| Rapids[4] | 1 | Deferred (2 days after trauma) | Satisfactory (2 mo) | Yes |
| Schmidseder[5] | 1 | Immediate | Incomplete (transection) | Yes |
| Brusati[2] | 1 | Immediate | Incomplete (18 mo) | No |
| | 1 | Not known | Satisfactory (3 mo) | No |
| Goin[1] | 1 (bilateral) | Immediate | Incomplete (10% left side and 25% right side; 12 mo) | Yes (bilateral) |
| | 1 | Not known | Satisfactory (12 mo) | Yes |
| Brookes[6] | 1 | Immediate | Satisfactory (9 mo) | No |
| Ferguson[7] | 1 | Immediate | Satisfactory (4 mo) | No |
| Weinberg[8] | 1 | Deferred (3 days after trauma) | Incomplete (6 mo) | Yes |
| Present case | 1 | Immediate | Incomplete (18 mo) | Yes |

the left mandibular ascending ramus and right subcondylar portion was performed, with mandibular advancement (7 mm), right lateralization (5 mm), and fixation of the fragments using miniplates. Twenty-four hours after the operation, a clear improvement in function of the orbicularis oculi muscle was observed. Nevertheless, 18 months after the accident, the patient's recovery remains incomplete (House-Brackmann grade 4/6) in relation to facial nerve functionality, with synkinesia and hyperkinesia (Fig. 1, *right*).

Facial paralysis is an infrequent complication of mandibular fracture. Only 10 cases have been documented since 1972[1–8] (Table I). Moreover, treatment is controversial. In three of the published cases in which facial paralysis appeared immediately after injury, incomplete recovery of facial nerve function was observed, regardless of the treatment approach adopted.[1,2,5] In another two cases, recovery was complete and satisfactory over a period of 4 to 9 months.[6,7] Unlike the three cases in which there was failure to recover completely, these latter cases had two features in common: the mandibular condyle on the side of paralysis was not broken, and the damage was secondary to low-kinetic energy traumatism. Three cases have been documented in which facial paralysis did not appear immediately after trauma but usually 3 days later.[3,4,8] In two of these cases, full resolution of the facial paralysis was observed after a period of 2 to 9 months.[3,4] However, Weinberg et al.[8] reported a third case involving the appearance of left facial paralysis 3 days after a mandibular fracture very similar to our own (bilateral condylar neck and right parasymphyseal fracture), secondary to a serious motor vehicle accident, in which resolution was not observed.

The diagnosis of seventh cranial nerve paralysis after a face injury comprises two important aspects: identification of the level of the lesion (intratemporal or extratemporal) and typification of the nerve damage. In the absence of temporal bone fractures, the presence of otorrhagia and fracture of the mandibular condyle ipsilateral to the paralyzed side can lead to nerve conduction block secondary to edema within the fallopian canal. The association of such damage with injury to the nerve in the soft tissues distal to the stylomastoid foramen, as a consequence of displacement of the fractured fragments, constitutes the main mechanism underlying a poor prognosis of facial paralysis secondary to mandibular fracture in the cases published in the literature to date (including our own).[1,8] In contrast, when nerve damage exclusively involves soft-tissue locations, the possibility of complete functional recovery of the nerve is very good.[2,6,7]

DOI: 10.1097/01.PRS.0000118254.77597.51

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## INEXPENSIVE CUSTOM-MADE EXTERNAL SPLINT FOR ISOLATED CLOSED ZYGOMATIC ARCH FRACTURES

*Sir:*

Isolated closed fractures of the zygomatic arch are not unusual and are generally related to a direct blow. Most frequently they show medial displacement of two fragments in a W-shaped pattern. Different techniques have been described to reduce these fragments, but most surgeons today follow the temporal semiopen method described by Gillies, Kilner, and Stone in 1927. Placing an elevator on the surface of the temporalis muscle and sliding it under the arch (Gillies approach) allows the surgeon to lift the arch into reduction (Fig. 1), after which more than 90 percent of the fractures are stable enough to not require additional measures, thanks to

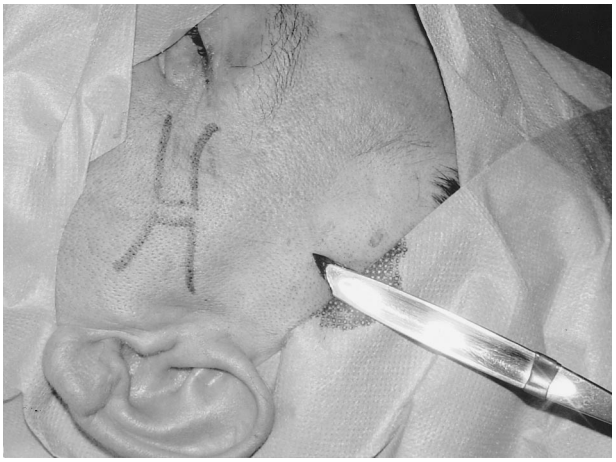

FIG. 1. Gillies technique for reduction of closed zygomatic arch fractures.

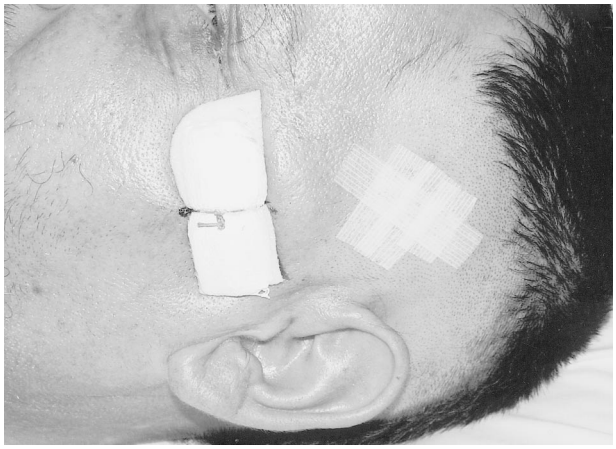

FIG. 2. Patient is shown wearing the external custom-made device.

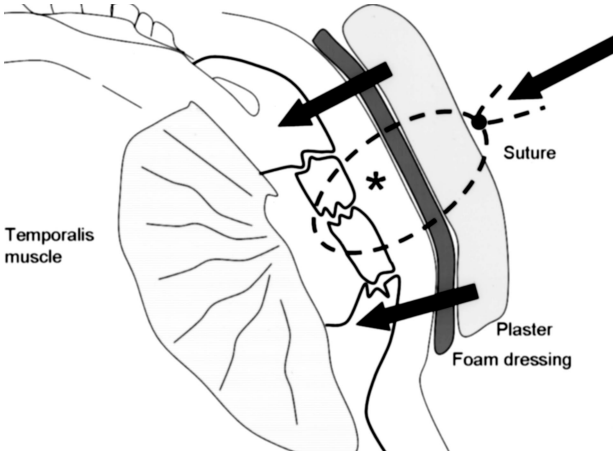


FIG. 3. Illustration of the described method. Any inadvertent injury to the fracture site will be uniformly transmitted to the nonfractured malar bone and zygomatic process of the temporal bone. The *asterisk* indicates the facial nerve.

the splinting effect of the masseter muscle and the temporalis fascia. However, external stabilization is occasionally recommended. Irrespective of the stability of the fracture after reduction, some surgeons favor the routine use of external devices to further stabilize the reduction and protect the fracture site from postoperative local pressure.

Different devices have been reported to further enhance stabilization and protection. Most are external polyethylene tubes fixed with sutures that are passed under the fracture site and tied on top of the tube.[1–3] Internal stabilization with an epistaxis balloon catheter has also been proposed.[4]

We suggest a simple, inexpensive, custom-made method to adequately stabilize and protect the reduced fractured arch (Fig. 2). After adequate reduction, one or two 0-1 monofilament nonabsorbable sutures are passed around and right under the fracture zygomatic arch. To do this properly, a ⅜ to ⅝ circle, 40-mm needle is required. Round-tip needles minimize the risk of injury to the frontal branch of the facial nerve. A protective, cushioning, absorbent, low-adherent dressing made from polyurethane foam (or a similar material) is then applied between the punctured sites all along the arch. A 1- to 1.5-cm-wide wet plaster cast is then trimmed to the appropriate length and shape (from malar bone to zygomatic process of the temporal bone) and placed over the foam dressing. The sutures are finally tied over the plaster. The adjusted suture knot tension must be firm enough to stabilize the reduction but loose enough to not damage the underlying tissues (which always include the facial nerve). Once the plaster has dried, the sutures will be securely fixed. The device is kept in place for 7 to 14 days, after which time the fracture site will be stable enough.

This device ultimately achieves the goals of external stabilization. Because the system is rigid and rests directly on the malar bone and the zygomatic process of the temporal bone, any force applied on it is uniformly transmitted to the nonfractured malar and temporal bones and not to the injured arch, should any blow occur. The protective cushioning effect of the dressing avoids injury to the skin and frontal branch of the facial nerve (Fig. 3). Because of its even adherence, the dressing can be left in place as long as required without skin irritation. Firm adherence of the plaster to both the dressing and the sutures provides whole-system stability while the dressing is in place.

DOI: 10.1097/01.PRS.0000118255.77597.18

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## APPROXIMATION OF THE EYELIDS USING STERI-STRIPS FOR EFFECTIVE EYE CLOSURE

*Sir:*

Corneal abrasions and keratitis can result from incomplete closure of the palpebral fissure.[1] This is commonly anticipated during general anesthesia and is prevented by instillation of an eye ointment or application of an adhesive tape to keep the eyelids approximated during the procedure. Similarly, in facial palsy, medial or lateral tarsorrhaphy is performed or a gold weight is inserted into the upper eyelid to

keep the free border of the upper eyelid at a lower level as a long-term treatment to prevent exposure of the cornea. We suggest the use of Steri-Strips (3M, St. Paul, Minn.) as a method of approximating the eyelids in patients with facial palsy, in order to prevent exposure keratitis.

A 55-year-old patient developed acoustic schwannoma that resulted in permanent right-sided facial palsy. Extrusion of the gold weight from her upper eyelid and multiple tarsorrhaphy procedures failed to prevent recurrent keratitis from endangering her vision (Fig. 1). She remained symptom-free with the regular use of Steri-Strips at night and intermittent use during the day (Fig. 2).

Steri-Strips come in different sizes and have better adhesive properties than commonly available medical tapes. They come in sterilized packs, so the surgeon can apply and adjust them while maintaining a sterile surgical field. Steri-Strips are available in most hospitals and pharmacies, are cheaper than other materials[2] reported for similar use, and have been found to effectively accomplish eyelid closure.

DOI: 10.1097/01.PRS.0000118256.77597.C3

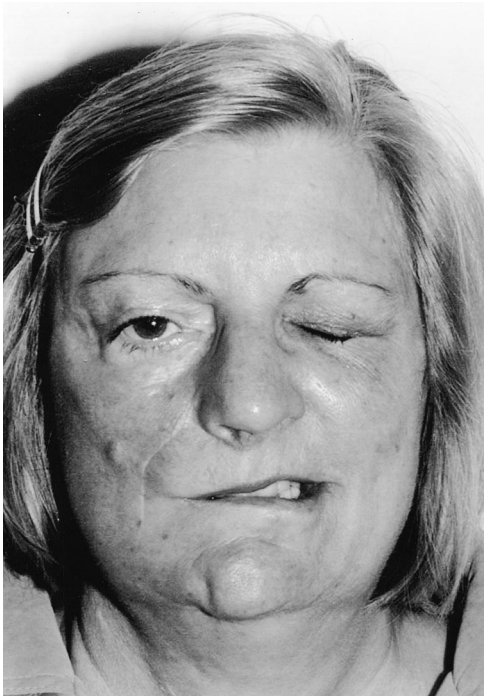

FIG. 1. Patient with longstanding facial palsy and recurrent exposure keratitis due to inability to close the eyelids.

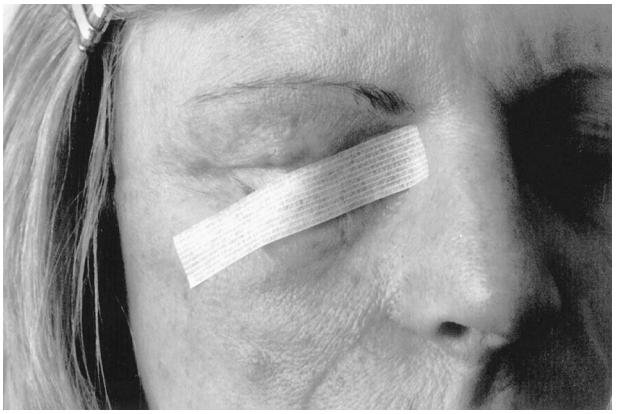

FIG. 2. Effective eye closure with Steri-Strips.

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## ADIPOFASCIOCUTANEOUS V-Y "HAMMOCK" FLAP COVERAGE OF SOFT-TISSUE DEFECTS OF THE DORSAL FOREFOOT AND TOES

*Sir:*

Soft-tissue coverage of the dorsal forefoot and toes represents difficult challenges with limited options because of the immobile nature of the available skin and the location of the underlying osseous, neurovascular, and tendinous structures. Use of the adipofascial turnover flap to cover these regions has been well described in the literature.[1,2] However, the resultant soft-tissue contour defect created by harvesting the underlying adipofascial tissues and the need for a full- or split-thickness skin graft and a separate harvest site can be problematic. The use of a V-Y adipofasciocutaneous advancement flap based on a single adipofascial pedicle has been described for soft-tissue coverage of dorsal metatarsal and posterior heel defects, but this flap is limited to repair of small to moderate-sized defects.[3,4] More recently, a dorsalis pedis flow-through island "hammock" flap has been described for coverage of medial and/or lateral soft-tissue defects on the dorsal aspect of the foot.[5] This flap requires division of the vascular communications between the dorsal and the plantar systems and skin-graft coverage of the result defect.

We have routinely used adipofasciocutaneous V-Y hammock flaps to close soft-tissue defects about the dorsal forefoot and toes (Figs. 1 and 2), in a manner similar to the approach described for posterior heel defects.[6] The dimensions of the V-Y cutaneous portion of the flap are outlined adjacent to the soft-tissue defect and incised to the dermal layer circumferentially. The skin surrounding the flap is undermined at the immediate subdermal layer in a typical adipofascial technique for a distance equal to or slightly greater than the dimensions of the cutaneous portion of the flap itself. Once fully elevated, the portion of the adipofascial tissues furthest from the soft-tissue defect is incised and undermined throughout at the level of the deep fascia, muscle,

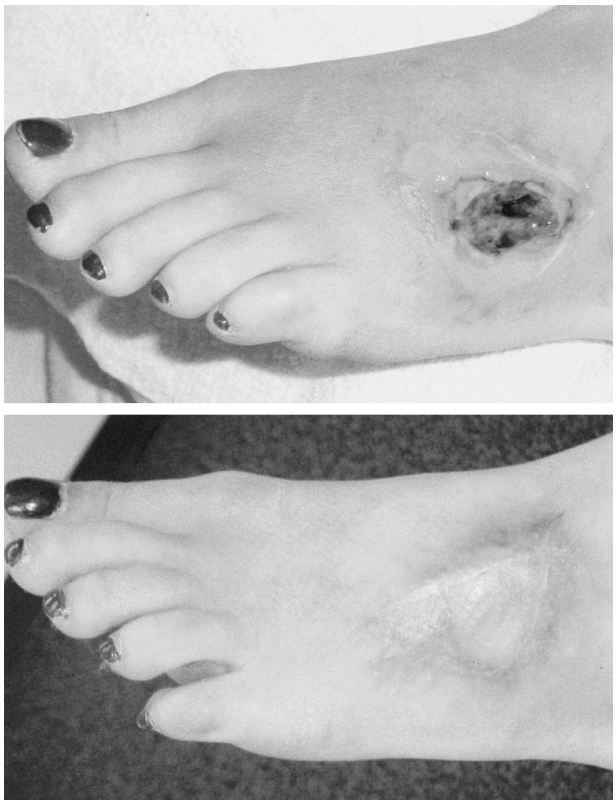

FIG. 1. (*Above*) A 48-year-old woman developed a full-thickness ulceration over the dorsolateral aspect of her left forefoot after blunt trauma. The ulceration subsequently became infected. She was initially managed with local wound care and culture-driven intravenous antibiotics, but the wound failed to respond adequately and developed exposed tendon and bone. She presented to our service for definitive treatment, which was performed under local anesthesia with intravenous sedation. An adipofasciocutaneous V-Y hammock flap was elevated from the anterior ankle region at the immediate subdermal layer, with full development of medial and lateral adipofascial pedicles and the central triangular-shaped attached cutaneous component. (*Below*) At her final appearance 4 months postoperatively, she showed some hyperpigmentation along the perimeter of the flap but stable and well-contoured soft-tissue coverage. Note the drop-toe deformity to the fifth toe, which did not undergo tendon reconstruction.

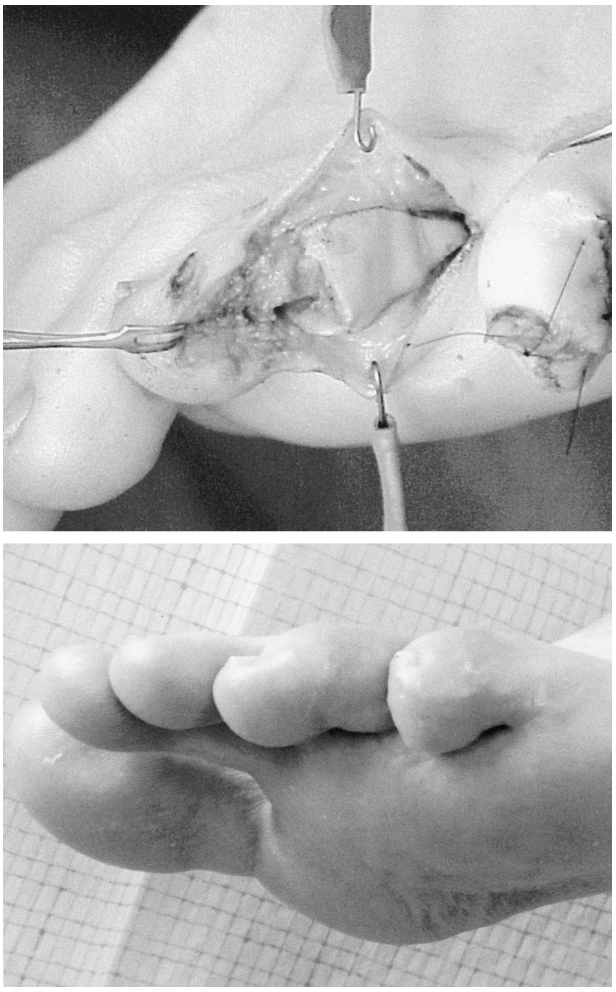

FIG. 2. A 32-year-old automobile mechanic sustained a chainsaw injury to the fourth and fifth toes of his left foot. He underwent irrigation and débridement at a local emergency room before he was referred to our service for definitive care, which was performed under local anesthesia with intravenous sedation. (*Above*) The fifth toe was closed with a simple rotation flap. The fourth toe had full-thickness loss of half of the lateral aspect of the toe with exposed proximal phalanx. An adipofasciocutaneous V-Y hammock flap was elevated at the immediate subdermal layer, with full development of medial and lateral adipofascial pedicles and the central triangular-shaped attached cutaneous component from the viable proximal aspect of the lateral fourth toe and interdigital space. (*Below*) Six months postoperatively, he had stable and well-contoured soft-tissue coverage with no angular deformity or contracture.

or tendon sheath, depending on the regional anatomy. This creates two adipofascial pedicles on either side of the central cutaneous segment, which creates an appearance very much like that of a hammock. Bipolar electrocautery is used to coagulate any underlying perforating vessels that might tether the flap. The cutaneous portion of the flap is then advanced, rotated, and transposed to fill the soft-tissue defect as needed and allowed by the flap pedicles. The cutaneous portion of the flap is supplied by the rich vascular network feeding the adipofascial pedicles on either side, which are soundly connected to the adjacent tissues.

There are several benefits to this flap. (1) The cosmetic donor site has minimal to no postoperative donor-site morbidity. (2) The flap is robust yet malleable, with an abundance of subcutaneous adipose tissue that truly replaces "like with like." (3) The minimal flap bulkiness allows for proper shoe fit. (4) The wide arc of rotation readily covers the dorsal forefoot and toes. (5) The reliable vascular supply spares the named foot vasculature, thereby allowing free-tissue transfer to remain an option. (6) The flap procedure can be performed in a timely fashion through simple means. The only relative disadvantages are that (1) dissection must avoid fatty tissue trauma to limit the development of venous congestion, (2) minor incision dehiscence is common, and (3) there is a tendency for some localized hyperpigmentation about the flap and undermined skin.

DOI: 10.1097/01.PRS.0000118257.35908.EF

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## A SIMPLE INSTRUMENT FOR TENOLYSIS IN HAND SURGERY

*Sir:*

Tenolysis of tendons in hand surgery is arguably the most demanding of all flexor tendon operations.[1] The aim of tenolysis is the release of adhesions or other obstacles that impede normal gliding of the tendon. For the procedure, it is assumed that there is tendon continuity.[2] The procedure is usually indicated as a salvage procedure for tendon repair, conventional grafting, or two-stage tendon repair. The indications for the operation and timing have previously been discussed extensively.[3–5] The purpose of this brief communication is to describe a simple instrument for effective tenolysis for this complex operation.

The involved tendon is exposed widely by a Brunner incision, and the adhesions are identified. Various instruments used for tenolysis include knives, elevators, and pediatric urethral dilators.[1,2,6] However, dissection with these forms of instrumentation is tedious and may result in damage to the pulley system. This is an important consideration when one is trying to preserve normal anatomy.[4] Adhesions in the palm and carpal tunnel region are difficult to treat with the standard techniques. At the end of the procedure, it is useful to check for passive movements and to perform a "traction flexor check."[6] If the latter test suggests adhesions in the proximal palm, it may entail proximal extension of incision or a difficult dissection. This is not desirable in an already scarred hand and can be avoided by using our tenolysis instrument.

The instrument we describe for tenolysis has been used by the senior author for the last 10 years (Fig. 1). The instrument has a shaft that is 9 inches long and a handle of the same length. The shaft angles gently forward to a curvature of approximately 30 degrees and ends in a tapering, nonsharp, "snake-head" tip. The concave side of the shaft of the instrument has a flat configuration. In contrast, the convex outer side of the instrument shaft has a rounded edge. The instrument design thus facilitates smooth distal transit in a narrow passage. At the tip of the instrument, in a subterminal location, is an eye. This eye is adequate for passage of all types of normal suture material.

After wide exposure of the operative site, the tendon pulleys are identified and preserved. The tenolysis instrument is introduced at the proximal limit of the intended tenolysis. It is gently insinuated on the side of the affected tendon and passed distally to the desired level. The curvature of the instrument and the snake-head tip help distal passage. The instrument tip is brought out laterally again on the side of the tendon, at a site away from the pulleys. A no. 1 nylon stitch thread is looped through the eye of the instrument, and one end of the suture is held with an artery forceps (Fig. 2). The tenolysis instrument is withdrawn and one end of the nylon thread follows. The distal stitch is then passed below the affected tendon. The tenolysis instrument is then again passed alongside on the opposite side of the tendon. The stitch thread is used to thread the eye of the instrument. The tenolysis instrument is then withdrawn and the stitch follows proximally. The above three maneuvers result in a stitch running in a loop fashion all round the floor of the affected tendon. The distal end of the loop is the far end of the segment intended for tenolysis. The two proximal ends of the stitch are then held with a pair of strong artery forceps to which gentle, nonjerky proximal traction is applied. The effect of this maneuver is to cut through the adhesions from distal to proximal. The same procedure can be repeated on the surface of the tendons and also between tendons. An extension of the procedure is to use it in a positive traction flexor check at the level of the proximal wrist crease. The instrument passes easily under the transverse carpal ligament, and tenolysis can be easily achieved using the instrumentation and technique described.

A more recent modification of the tenolysis instrument is to use a two-sided instrument (Fig. 1). This instrument has two heads: one is spatulate for dissection and the other side is for tenolysis. The two-sided instrument modification is a

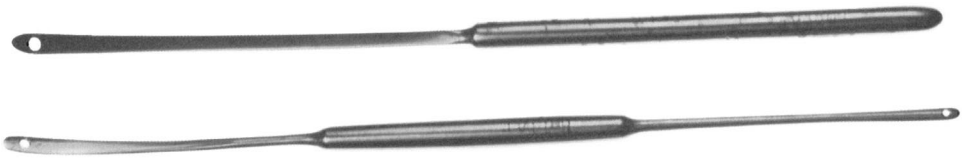

FIG. 1. Tenolysis instrument (*above*) along with its modification (*below*). Note the "snake-head" tip with a subterminal eye. (*Below*) The two-sided instrument is a recent modification. One end of it can be used for dissection and the other end can be used for tenolysis.

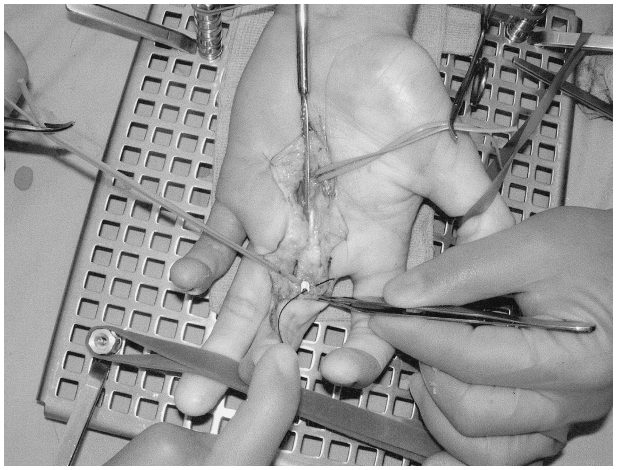

FIG. 2. Intraoperative view of the distal passage of the tenolysis instrument. The no. 1 nylon suture has been passed through the eye of the shaft.

useful adjunct to the standard tenolysis instrument, as the spatulate end can be used for dissection. We find our tenolysis instrument to be minimally invasive and relatively atraumatic. The curvature of the instrument follows the normal palmodigital curvature. The two surfaces of the shaft help in antegrade instrument passage, with minimal trauma to the tendon and the pulley system. In addition, the length of the instrument facilitates long-segment tenolysis. Complete proximal pass of the stitch loop ensures a total tenolysis. If the suture snaps during the process, it can be easily dealt with by repassing the tenolysis instrument.

The tenolysis instrument is especially useful on the posterior aspect of the tendon, but it can be used easily between various tendons. In our experience with treating more than 70 patients with tenolysis in the last 10 years, we have found this instrument to be effective for an otherwise complex and hazardous operation.

DOI: 10.1097/01.PRS.0000118258.35908.0B

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## A RELIABLE AND VERSATILE FINGER TOURNIQUET

*Sir:*

With regard to the brief communication by Aslan et al. in the April 15, 2003, issue of *Plastic and Reconstructive Surgery* (111: 1758, 2003) entitled "Simple and Effective Device for Finger Tourniquet: A Rolled Penrose Drain," we would beg to differ with the authors' view of surgical glove tourniquets as being too loose on the fifth finger, particularly in children and women.

Smith et al.[1] have clearly demonstrated that the digits of elastic surgical gloves can have their constricting pressure varied by the surgeon using an artery forceps, as shown as in Figure 1. In applying the tourniquet from distal to proximal, the finger is exsanguinated while arterial inflow is impeded, thus producing a bloodless field.

Since the surgeon can control the pressure of the tourniquet, gloves of whatever size can be used on any patient. We regularly use this method and believe it is as close as one can get to the ideal because it is simple, convenient, and effective.

DOI: 10.1097/01.PRS.0000118259.35908.42

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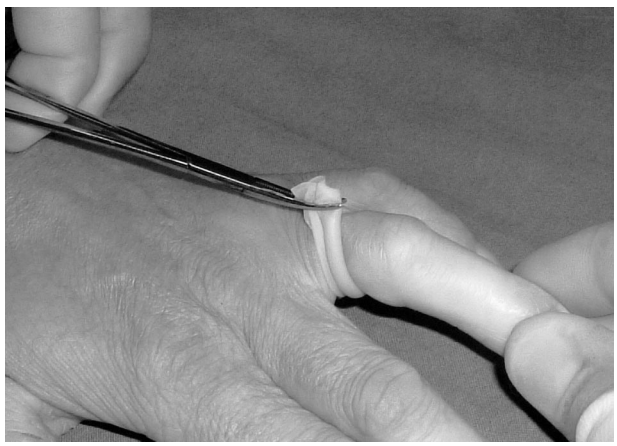

FIG. 1. The adjunctive use of an artery forceps to regulate the constricting pressure of the band on the digit.

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## ARM RESTRAINT IN CHILDREN WITH CLEFT LIP AND PALATE

*Sir:*

Having recently read both the article[1] and subsequent correspondence[2,3] on this subject, we would like to add our voice to that of Dr. Sommerlad in regard to the use of postoperative arm restraints in cleft palate patients. In 1995, we abandoned using any form of restraint for all cleft patients (lip and/or palate), with no untoward effect. This includes primary lip and palate surgical procedures, which we usually perform when the patient is around 3 months of age, as well as all secondary surgical procedures.

DOI: 10.1097/01.PRS.0000118260.35908.CF

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## EXCHANGING SPLIT-SKIN GRAFTS TO REDUCE DONOR MORBIDITY IN LIMITED PRETIBIAL DEGLOVING INJURIES

*Sir:*

Limited degloving injuries of the lower limbs are common.[1] They usually occur in elderly patients following minor trauma.[1] The skin is often atrophic, and there may be comorbid conditions that contribute to poor wound healing.[1] If skin grafting is chosen to address the problem, then the aim of surgical management of this particularly vulnerable group of patients is to provide prompt, safe débridement and to resurface the resultant wound with a split-skin graft. Delayed healing of the donor site can potentially double the wound load suffered. Strategies to reduce donor-site morbidity include overgrafting the split-skin graft donor site,[2,3] defatting the degloved skin, placing it back onto the original wound, and then using a negative pressure dressing (particularly in extensive cases),[4] thus negating the need for a split-skin graft. In the former, the size of the resultant split-skin graft donor is larger than when no overgrafting is used; in the latter, the defatted, degloved skin is severely compromised, and placing that onto a traumatic wound may not be as predictable as using a pristine split-skin graft from a distant site. This concern has been echoed by others[4] who believe that débridement followed by split-skin grafting is a requisite for primary healing in cases of degloved skin flaps. We combine these two techniques and opt to use the degloved skin flap as the donor for overgrafting the split-skin graft donor site. Thus the principle is that a pristine split-skin graft is applied to the (compromised) primary wound, whereas the degloved skin flap (compromised) is applied to the split-skin graft donor site (a comparatively favorable site). An added benefit to taking the epidermis off the degloved skin is that one can see the demarcation between the compromised skin flap and that which is viable (as seen by bright red punctate bleeding).

We undertook this technique in an 82-year-old man who presented with an area of limited degloving affecting his left

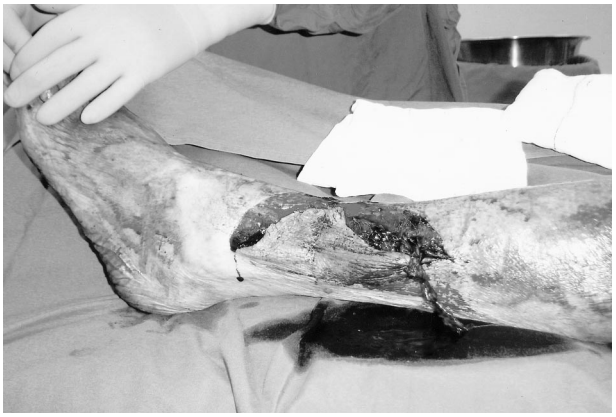

FIG. 1. An 82-year-old man presented with an area of limited degloving affecting his left lateral lower leg following a simple fall at home. Preoperative view shows his lower limb before débridement and after it had been prepared for surgery. Note the obviously thin epidermis and the extensive subcutaneous bruising, indicating a delicate integument.

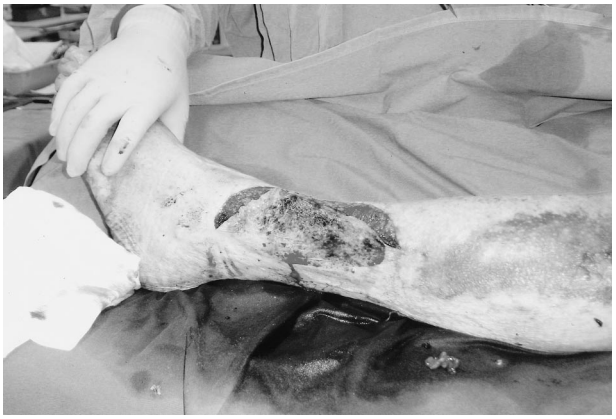

FIG. 2. The instant demarcation of bleeding (viable) and nonbleeding (compromised) tissue can be seen. This line was followed for débridement. Thus, all nonbleeding tissue was excised and the remainder of the skin flap was sutured back.

lateral lower leg following a simple fall at home. He had hypertension and diabetes and was taking low-dose aspirin. We opted to treat him with débridement and split-skin grafting. He was taken to the operating theater, and under spinal anesthesia, the flap laceration was critically examined (Fig. 1). The epidermis was then harvested off the flap with an air-driven dermatome to reveal a clear line of demarcation between viable and nonviable tissue (Fig. 2). This harvested split-skin graft was meshed with a 1:1.5 dermacarrier. Once the avulsed fat had been excised and the wound thoroughly lavaged, a pristine split-skin graft was harvested from the anterior ipsilateral thigh. This split-skin graft was meshed with a 1:1.5 dermacarrier. The pristine split-skin graft was applied to the primary wound and standard dressings were applied. The split-skin graft from the degloved skin was cut into smaller pieces and applied to the donor site of the pristine split-skin graft. At 5 days, all dressings were removed to reveal 100 percent split-skin graft take at both sites. The split-skin graft donor site had accepted the split skin from the degloved skin flap, but those parts that were not grafted remained unhealed (Fig. 3). At 1-month follow-up, the overgrafted areas had a similar color match to the surrounding skin (Fig. 4).

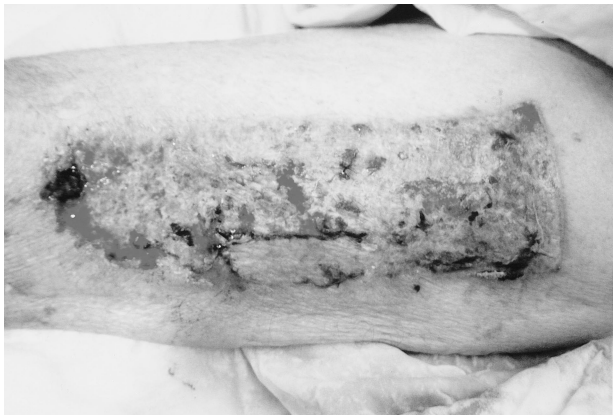

FIG. 3. The split-skin graft donor site at 5 days. The split-skin graft from the degloved skin has taken, but the remainder of the wound remains unhealed.

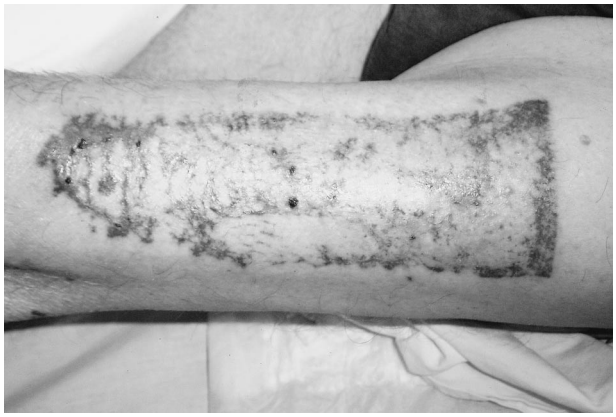

FIG. 4. Split-skin graft donor site. Although the entire wound has now healed, there is a difference in the quality (color and texture) of the part that has been overgrafted versus that which healed by secondary intention.

It is well known that the skin envelope of the anterior lower limb has a relatively poor vascularity.[1] This, coupled with the fact that the lower limb is particularly vulnerable to trauma, implies that loss of integument around the lower limb will produce wounds that require specialist attention. Degloving injuries usually involve torsion/avulsion forces that strip the skin and fat off the underlying structures and at the same time interrupt the nourishing vessels. The survival of the resultant flaps is unpredictable.[1] Débridement of all devitalized tissue followed by skin grafting can produce gratifying results.[5] Use of a split-skin graft from the degloved flap is not new and has been advocated as the only split-skin graft source by some.[6] However, the time to primary healing may be prolonged, indicating that the split-skin graft is not pristine. Cohen et al.[7] successfully used an ingenious "trilaminar" harvest of tissue in a case of massive degloving in a child. Thus, the practice of using degloved skin flaps as a tissue source is widely practiced, and the fear of transferring infection does not seem to be a real one.

When a remote site is used as the split-skin graft donor site in those patients who have atrophic skin elements, there is a risk of delayed healing of the donor site. The described technique essentially involves exchanging the split-thickness skin graft between two donor sites. The time to healing was 5 days for the wound and donor sites. There is a risk of transferring infection to the split-skin graft donor site, and we would not recommend this technique in heavily contaminated wounds or flap lacerations that are more than 5 days old.

DOI: 10.1097/01.PRS.0000118261.35908.86

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## THE PENROSE DRAIN TOURNIQUET FOR HYPOSPADIAS REPAIR

*Sir:*

Application of a penile tourniquet in hypospadias surgery is essential for the erection test and for maintaining a bloodless field. Traditionally, a rubber tube has been used as a tourniquet. The tube can be difficult to apply and has a tendency to slip distally. It is also traumatic to the penile skin. In our experience, the Penrose drain technique overcomes these problems. This technique is simple to apply. The tension is easy to adjust and is applied over a much larger surface area, reducing the local trauma to the penis and preventing it from slipping distally.

We use a standard (internal diameter, 6.35 mm) Penrose drain with a small section of vulcanized rubber endotracheal tubing (8 mm in diameter) and a mosquito forceps to construct our tourniquet (Fig. 1).

The penis is held vertically with a stay suture through the glans. The vulcanized rubber tube is lubricated with normal saline and passed over the mosquito forceps. The Penrose drain is passed around the penis, and both ends of the drain are then grasped with the mosquito forceps (Fig. 2, *above*).

The vulcanized rubber tube is advanced from the mosquito forceps along the Penrose drain (Fig. 2, *below*). The appropriate tension is applied, and the mosquito forceps is removed from the end of the Penrose drain and reapplied to hold the vulcanized rubber tube against the penis (Fig. 3, *above*). This secures the tourniquet and prevents it from loosening. This technique has been used by the senior author for the last 8 years with no tourniquet-related complications.

A review of the literature reveals that only two articles have described alternatives to the traditional rubber tube tourniquet, the lasso tourniquet[1] and the rubber band tourniquet.[2] We believe the Penrose drain tourniquet to be superior to both. We have found it is easier to apply than any previously described method. Its tension can be delicately adjusted, and because the pressure it exerts is evenly distributed around its circumference and across its 7-mm width, it does not distort the shaft distally or damage the penis (Fig. 3, *above*). It is also inexpensive to use. For these reasons, we have recently started to evaluate the Penrose drain tourniquet for use as a digital tourniquet.

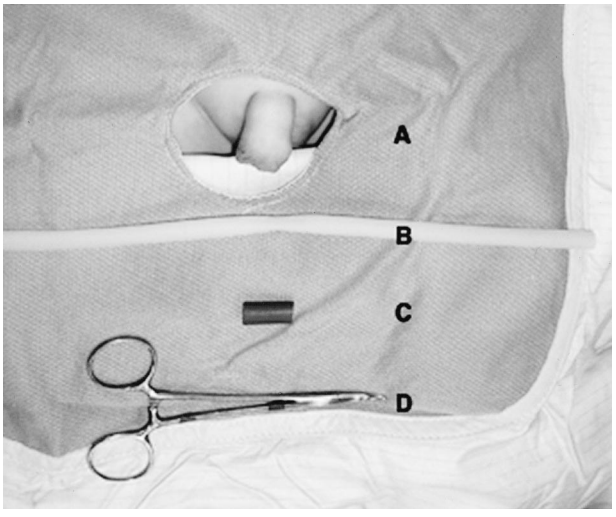


FIG. 1. *A*, patient; *B*, Penrose drain; *C*, section of vulcanized rubber tube; *D*, mosquito forceps.

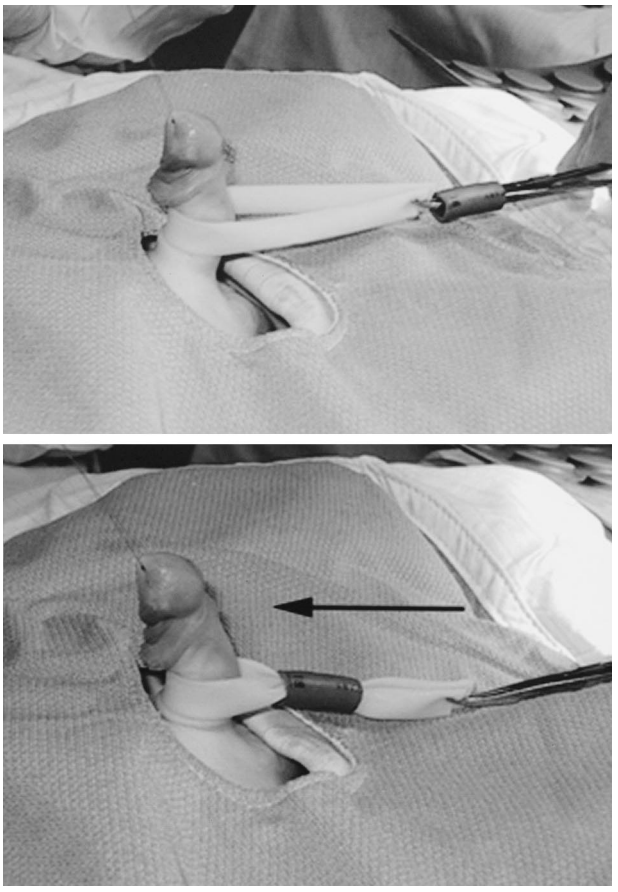

FIG. 2. (*Above*) Penrose drain tourniquet assembled. (*Below*) Advancement of the vulcanized rubber tube over the Penrose drain.

DOI: 10.1097/01.PRS.0000118262.35908.5D

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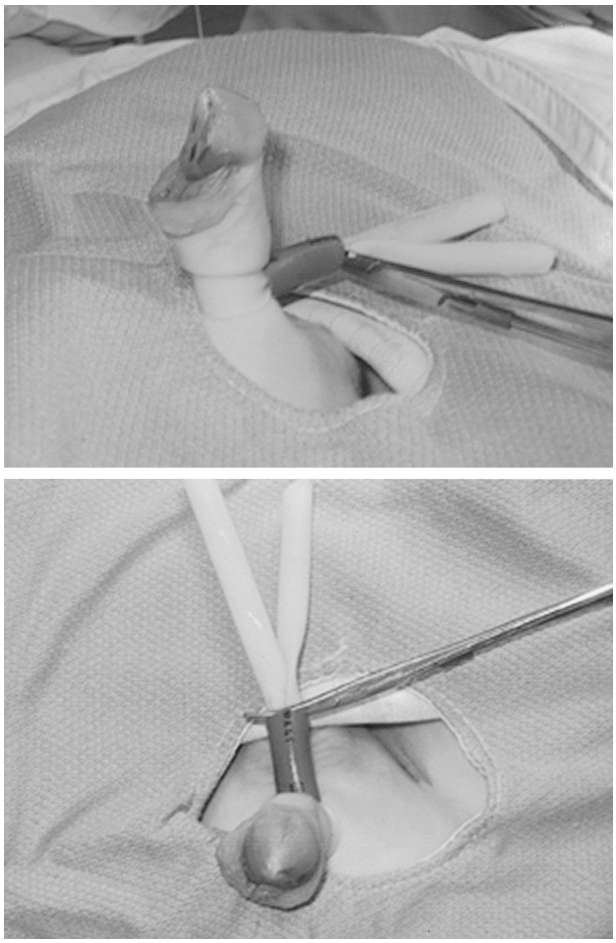

FIG. 3. Lateral (*above*) and superior (*below*) views of the penis with the tourniquet applied and secured.

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## A NEW SKIN CLOSURE TECHNIQUE WITH RUNNING SUTURES AND TISSUE ADHESIVE

*Sir:*

Keloids often present difficulties in treatment, and they are a severe problem for persons of African and East Asian ancestry. In our department, keloids and hypertrophic scars have been treated with multimodal therapy, including excision, postoperative electron-beam irradiation,[1] tranilast medication, and pressure therapy with silicone gel sheets or bandages. We have taken great care to prevent recurrence and have added a new twist to our surgical techniques.[2]

In surgical therapy for keloids, an easygoing way of thinking is contraindicated. Simple excision and sutures enlarge the wound, and new keloids frequently recur from the original keloid. Therefore, we maintain that after keloidectomy the wound should be elevated and fixed with a three-layer suture (subdermal, dermal, and epidermal). After the operation, the elevated wound is slowly stretched by natural tension arising from everyday activities, and gradually it becomes flatter. We believe that this course prevents recurrence. As the case demands, Z-plasty, W-plasty, and V-W plasty[3] have also been performed to release the tension. In addition to these basic, classic techniques,[4] we present here a new surgical technique which we devised that uses skin adhesive.

The conventional method in our department has been to use Prolene (Ethicon, Somerville, N.J.) for epidermal sutures, Vicryl for subcutaneous sutures, and Maxon (Davis & Geck, Wayne, N.J.) or PDS II (Ethicon) for dermal sutures. However, with the recent development of surgical adhesive, we have been using skin adhesive (Dermabond, from Ethicon) for skin closure since 2001. This is an innovative material for keloid surgery that obviates the need to worry about suture marks in keloids recurring after use of epidermal sutures. Even though it is easy to use, there is a problem in that the glue can easily percolate into the wound. To prevent this, we sometimes use running sutures with nylon thread (Figs. 1 and 2). These are buried sutures that bind the epidermis together. The running sutures are usually removed about 7 days after the operation. Dermabond is removed at the same time, and Proxi-Strip (Ethicon) fixation is performed if required. In our experience, the scars have been straight and no suture marks have been observed. This method produced more excellent aesthetic results than the traditional method. The therapy did not cause any side effects, such as contact dermatitis due to the use of Dermabond. Akimoto et al.[5] reported a new skin closure method using Dermabond and Proxi-Strip called the reinforcement combination method. They described how the combination of skin adhesive and skin closure tape showed especially good endurance. In our department, to prevent percolation of the adhesive, we use running sutures with nylon thread, and we sometimes use Proxi-Strip in addition.

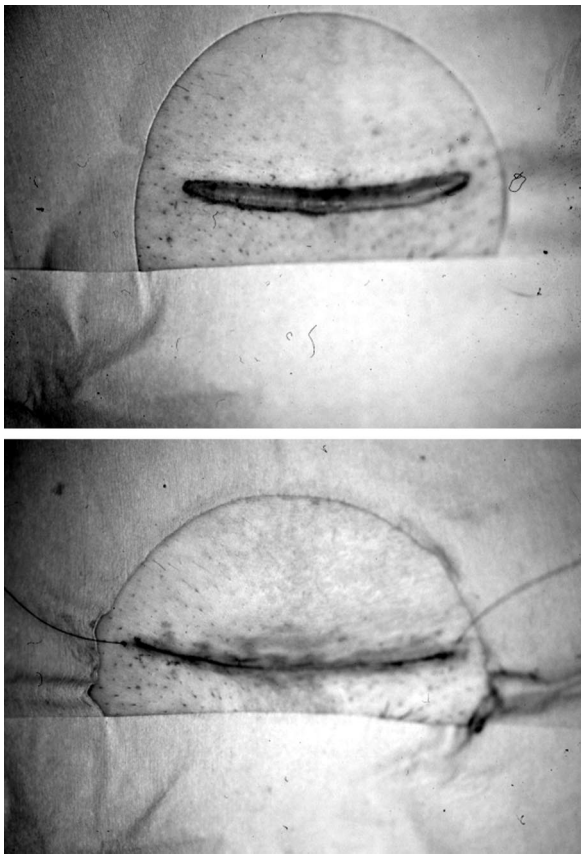

FIG. 1. Wound closure using Dermabond and running sutures in a 48-year-old woman. (*Above*) Preoperative design. (*Below*) Running sutures after dermal suture.

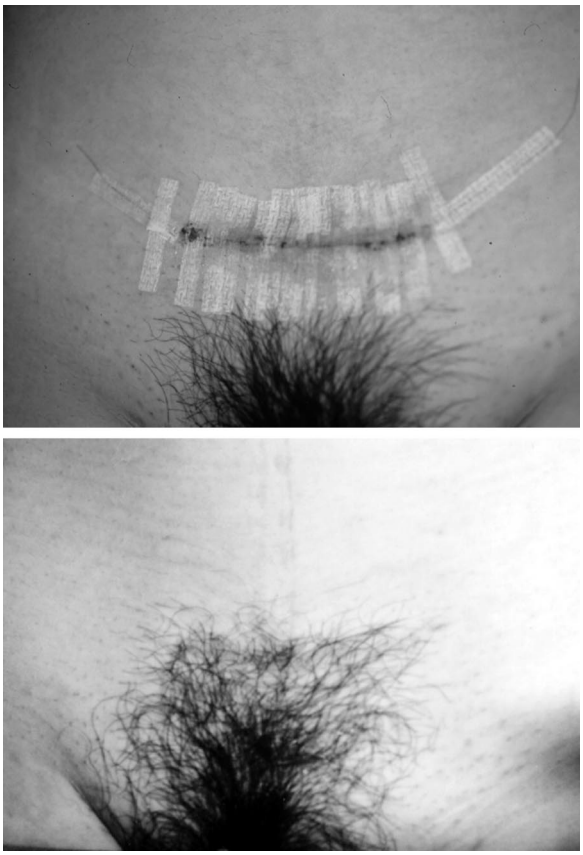

FIG. 2. (*Above*) Dermabond and Proxi-Strip fixation and (*below*) a 1-year postoperative view of the same patient as shown in Figure 1. The scar is mature and not noticeable.

This new skin closure method is noninvasive and has clear advantages over skin sutures.

DOI: 10.1097/01.PRS.0000118263.35908.14

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## A SIMPLE TECHNIQUE FOR STABILIZING SUBTOTAL DIGITAL AMPUTATION DURING TRANSPORT

*Sir:*

In all busy microsurgery units, the number of subtotal amputations far outnumbers the number of total amputations. Most of these subtotal digital amputations are found to be precariously surviving due to small vessels in the skin bridge (Fig. 1). This attachment is likely to be damaged because of improper positioning and accidental twisting of the distal part during referral to a major center. The twisting or stretching of the attachment can also result in severe pain and induce vasospasm of the vessels.

To stabilize these precariously viable digits, we have used the commonly available Micropore tape (3M, St. Paul, Minn.) across the level of injury. This keeps the distal part in correct position (Fig. 2). Tape application is simple and pain-free. The tape can be left on until the patient has been anesthetized and the hand prepared for surgery, thereby preventing further damage to the digit during painting and draping.

We first used this technique in patients who came to our

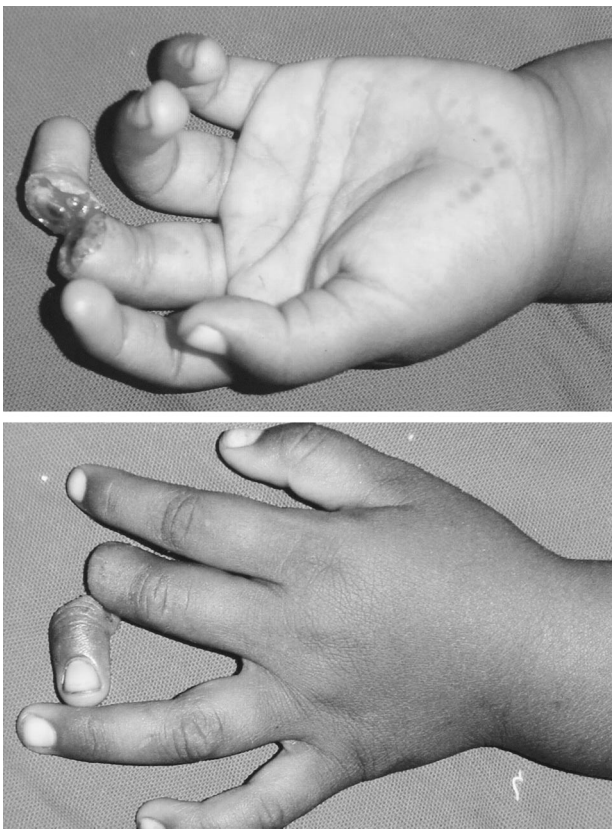

FIG. 1. Subtotal amputation of the left middle finger in a 1.5-year-old child. The distal part of the digit is precariously attached by a small skin bridge.

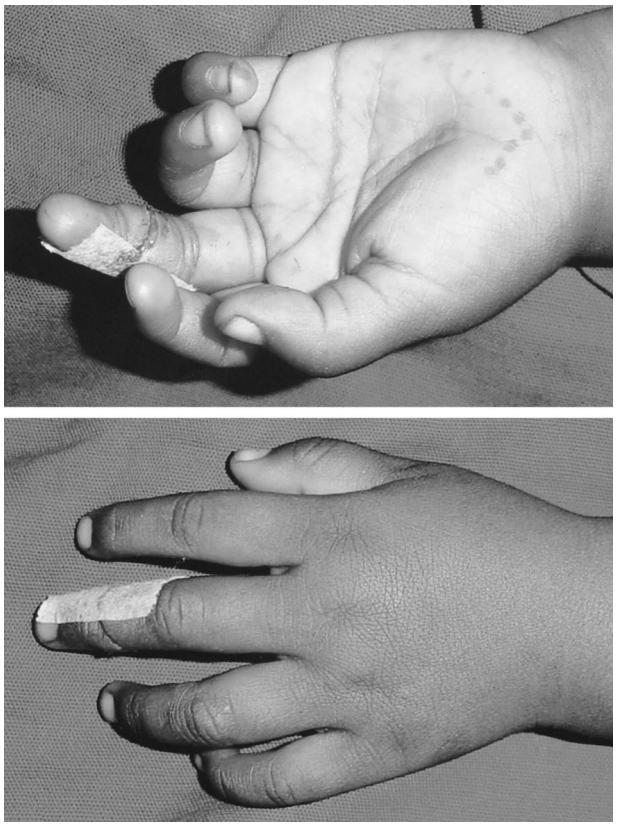

FIG. 2. The finger is stabilized using 3M Micropore tape along the lateral border. The digit was subsequently revascularized only with arterial repair; an intact vein was found in the skin bridge.

emergency department, after inspection of the wound. The patients were very comfortable until they were given anesthesia. Since then, we have been instructing all referring physicians to use this technique before transferring a patient with subtotal amputation. We have found that the technique is very simple to follow and does not cause extra harm to the digit, and all patients are very comfortable. This technique is very useful in children who are scared and restless during transport and in whom the chances of survival of the distal part are very high.

We recommend using this simple technique during patient transport to the specialty center because it prevents pain and spasm of the vessels caused by accidental twisting of the digit.

DOI: 10.1097/01.PRS.0000118264.35908.DA

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## EVALUATION OF NODAL PATTERNS FOR MELANOMA OF THE EAR

*Sir:*

We have carefully read the article entitled "Evaluation of Nodal Patterns for Melanoma of the Ear" by Cole, Jakowatz, and Evans published in the July of 2003 issue of *Plastic and Reconstructive Surgery* (112: 50, 2003). We found it interesting and well documented, but a few observations are to be made.

In this article, the authors present 19 cases of external ear melanoma; in nine of these cases, the patient underwent sentinel lymph node mapping. It seems to us that the results presented do not help the standardization of the mapping technique or the identification of the lymphatic drainage pattern for the ear in each patient.

The authors state that, on average, 3.7 sentinel nodes for each patient were identified and removed and that all were harvested from different lymphatic basins. They further state that they relied "more heavily on the radioactivity of each individual node" than on the presence of blue-stained nodes for sentinel node identification. However, since none of the nodes was found to be positive, there is no scientific or clinical evidence that the lymph nodes harvested in this series were actually sentinel nodes or just nodes. Really, we found it inaccurate to define the 3.7 lymph nodes average per patient as sentinel nodes. We believe that an easy and reliable technique for sentinel node mapping in malignant melanoma of the external ear is far from being standardized.

Table III needs further explanation, too. How many patients underwent sentinel lymph node mapping, 19 as stated in Table III or nine as stated in the text? How should the reader interpret the data shown?

Lastly, it is surprising that in such a detailed and well-documented article, two of the most important reconstructive techniques for the pinna—the Antia-Buch flap,[1] the mainstay of reconstruction for marginal defects, and the revolving door flap, described by Masson,[2] the basic technique for reconstruction of conchal defects—were mistaken.

We thank the authors and the Editor for giving us the chance to express our opinion about the tricky subject of identifying the lymphatic drainage patterns of the external ear, which is important in both the rare melanoma and in the more frequent squamous cell carcinoma.

DOI: 10.1097/01.PRS.0000118265.35908.93

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## REPLY

*Sir:*

I would like to address some of the points raised by Drs. Cordova and Moschella.

First, I would certainly like to thank Dr. Cordova and Dr. Moschella for their thorough evaluation of the article itself. There is no question, and I certainly agree with both Drs. Cordova and Moschella, that standardization of mapping techniques has not been fully established. I believe that this article again emphasizes the point that lymphatic drainage patterns are highly variable and unpredictable. In fact, this is stated on page 55 of the article in the second paragraph of the Conclusion. Thus, our article was originally written to see whether further delineation of the difficulties people have had could be performed. However, we reaffirmed the difficulties in generalizations regarding common patterns of lymphatic drainage to the ear.

Second, although it is true that no evidence of micrometastasis was identified within these lymph nodes, this does not necessarily indicate that these were not sentinel nodes. Although one could argue in favor of a single node as being the "sentinel node," the variable patterns in the head and neck cause multiple drainage to a variety of nodes based on, as stated before, variable drainage patterns. Thus, we believe it is probably more inaccurate to identify a single node as being a "sentinel node" with these variable drainage patterns, as demonstrated both on technetium-99–sulfur colloid infusion and isosulfan blue. We do agree, however, with Drs. Cordova and Moschella that Table III is somewhat misleading, as there is an inaccuracy. Nine patients, not 19, underwent sentinel lymph node mapping. We apologize for this misprint.

Lastly, it was not the focus of our article to concentrate on reconstructive techniques. Although the Antia-Buch flap and the techniques described by Masson are well-standardized and commonly utilized procedures, it was not the purpose of our article to highlight them. We certainly, however, bow to these cornerstones of plastic surgery for their expertise in assisting us with reconstructing these defects following surgical extirpation.

I would like to again thank Dr. Cordova and Dr. Moschella for their kind letter and trust that we have adequately answered their questions.

DOI: 10.1097/01.PRS.0000118265.35908.93

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## THE USE OF A MONITORING FLAP IN VASCULARIZED FREE JEJUNUM GRAFTS

*Sir:*

We read with interest the article entitled "Monitoring Flap for Buried Free Tissue Transfer: Its Importance and Reliability" by Byung Chae Cho et al. (*Plast. Reconstr. Surg.* 110: 1249, 2002). We agree with the indications for using the monitoring flap described for the radial forearm flap and vascularized fibular flaps, but we disagree with the indications for using the jejunal monitoring flap.

Jejunal flaps have a maximum ischemic time of 2 hours.[1–3] Once the monitor flap shows signs of ischemia, it is too late for flap salvage.

In our opinion, the reason for using a monitor flap is to allow prompt recognition of flap failure and early removal and replacement of the jejunal segment. Delay in removal of a necrotic jejunal flap increases local inflammation and produces an environment where further free-tissue transfer becomes increasingly complicated or even impossible.

DOI: 10.1097/01.PRS.0000118266.35908.48

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## REPLY

*Sir:*

I appreciate and agree with the excellent advice of Dr. Gwanmesia et al. It is absolutely very important to perform exact anastomoses of the pedicles in the free jejunal flap. Venous anastomosis has a higher failure rate than arterial anastomosis because the superior mesenteric vein has a very thin, collapsible wall and it is technically difficult to perform anastomosis because of the size discrepancy. In the case of venous occlusion, detection was relatively easier than in the arterial occlusion because the monitoring flap presents a bluish-purple color with rapid capillary refill and swelling. In our cases, two flaps showed abnormal signs of venous occlusion. Fortunately, one of the flaps was detected early (within 1 hour) and was salvaged. The other was lost because of late detection. Arterial occlusion is usually detected later than venous occlusion. For arterial occlusion, it is too late for flap salvage because of the short ischemic time of the jejunal flap, as Gwanmesia et al. already mentioned.

I might suggest that the monitoring flap of the free jejunal flap is more useful, reliable, and simple because of the direct visualization compared with the free jejunal flap without the monitoring flap, although only one of our free jejunal flaps survived out of several flaps. However, more frequent observation should be used with the monitoring flap of the free jejunal flap.

DOI: 10.1097/01.PRS.0000118266.35908.48

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## BARIPLASTIC SURGERY

*Sir:*

The number of procedures performed to obtain massive weight loss is projected to increase dramatically in the next several years, and plastic surgeons are already seeing a substantial increase in the number of post–weight loss patients requesting facial and body contouring. Our current terminology, "body contouring following bariatric surgery," is unwieldy. I would like to propose the term "bariplastic surgery" to describe the contouring procedures utilized by plastic surgeons in the weight loss patient. (This follows the vernacular of the now well-accepted term "oncoplastic surgery.")

It is clear that there are striking similarities in the appearance of patients following massive weight loss that supersede familial and ethnic characteristics. One such deformity is the presence of a panniculus in the lower abdomen accompanied by a second drape-like fold in the epigastrium and upper abdominal quadrants. I would like to suggest the term "double pannus" for this deformity.

Thank you for your kind consideration.

DOI: 10.1097/01.PRS.0000118268.35908.E5

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## A NEW SKIN PROTECTOR DEVICE FOR LIPOSUCTION

*Sir:*

Traditional liposuction (using a vacuum-suction cannula) is an excellent surgical contouring technique used to remove fat deposits through small skin incisions.[1] Even after successful operations, the skin friction caused by the cannulas may produce cutaneous damage, which could leave ugly postoperative skin scars. To avoid this damage, we have used a protective device made with the posterior portion of a 1-ml disposable plastic syringe. It is easily cut in a 45-degree angle by a surgical blade. This angle allows an easier introduction into the incision (Fig. 1). This device has an external diameter of 6 mm and allows the surgeon to work with cannulas of up to 4 mm. If larger-diameter cannulas are needed, a longitudinal section of this device allows the cannula to pass freely through the lumen (Fig. 2). This skin protector must be attached with the same suture material used to close the posterior incision or with Tegaderm (3M, St. Paul, Minn.) (Fig. 3). This disposable device is easy to make, is low in cost, and results in a small and inconspicuous skin scar.

DOI: 10.1097/01.PRS.0000118269.35908.AC

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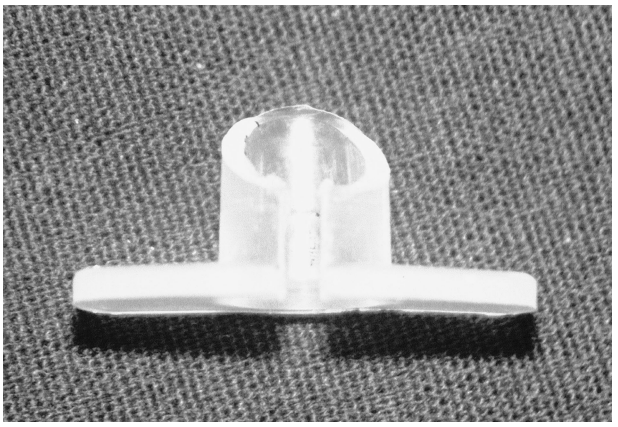

FIG. 2. Longitudinal section of this device for cannulas that are 5 mm in diameter or larger.

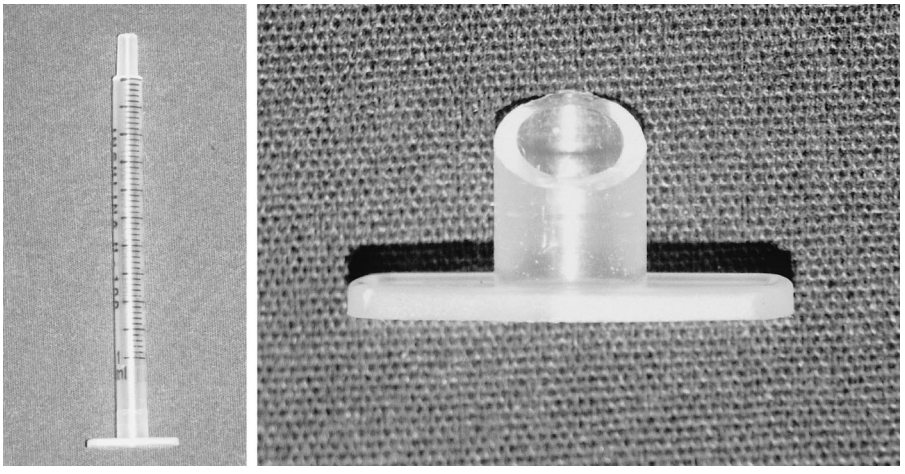

FIG. 1. (*Left*) Disposable plastic syringe. (*Right*) Protective device.

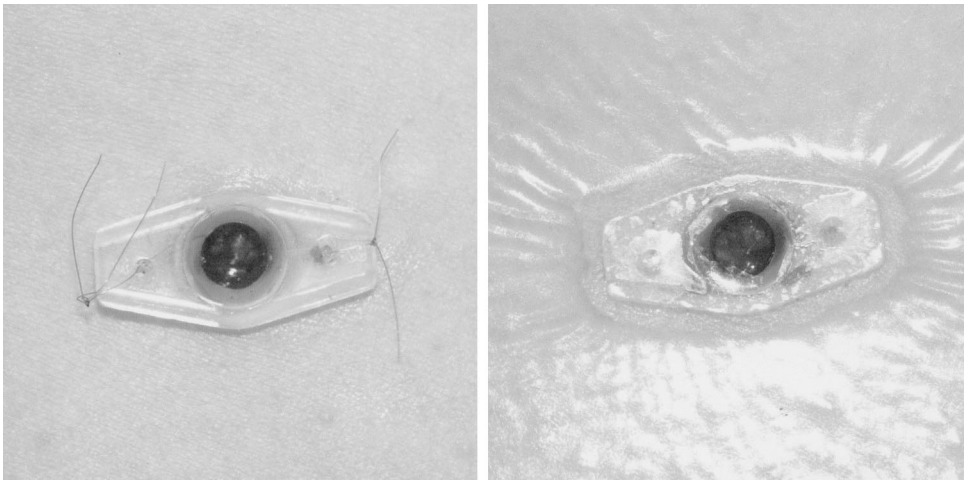

FIG. 3. (*Left*) Device attached with the same suture material used to close the posterior incision. (*Right*) Device affixed with Tegaderm.

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## AN ABERRANT SENSORY INNERVATION OF THE LITTLE FINGER BY THE ULNAR NERVE: A CADAVERIC OBSERVATION

*Sir:*

During the dissection of a 52-year-old male cadaver's right hand, a variation in the terminal branches of the ulnar nerve was observed in the palmar region. The medial proper palmar digital nerve to the little finger was found to be formed by the branches originating from the superficial and the deep branches of the ulnar nerve. The motor branch of the deep branch of the ulnar nerve, innervating the abductor digiti minimi muscle, was observed to give another branch piercing through the abductor digiti minimi muscle. As it became more superficial, it combined with the two twigs originating from the superficial branch of the ulnar nerve (Fig. 1).

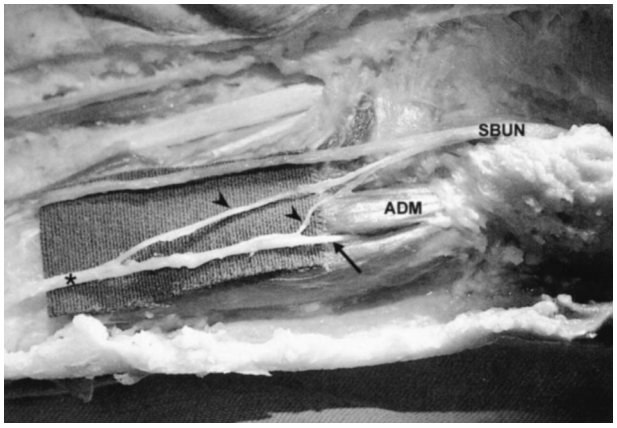


FIG. 1. The palmar view of the cadaver's right hand shows the variations in the terminal branches of the ulnar nerve. The *arrow* points to the branch piercing through the abductor digiti minimi muscle, which originated from the nerve innervating the muscle. The *arrowheads* point to the twigs; the *asterisk* indicates the medial proper palmar digital nerve to the little finger. *SBUN*, superficial branch of the ulnar nerve; *ADM*, abductor digiti minimi muscle.

The superficial branch of the ulnar nerve was giving off a branch 28 mm distal to the proximal edge of pisiform. Then it divided into two twigs that joined with the branch originating from the nerve innervating the abductor digiti minimi muscle at two places, 44 mm and 54 mm distal to pisiform.

The medial proper palmar digital nerve to the little finger generally originates from the superficial branch of the ulnar nerve.[1] In some cases it may originate directly from the ulnar nerve itself.[2] Besides, its arising from the dorsal branch of the ulnar nerve has also been mentioned in the literature.[3–5] In our cadaveric observation, the medial proper palmar digital nerve to the little finger was formed by the combination of the branches from the superficial and the deep branches of the ulnar nerve. To the best of our knowledge, such a variation has not been reported hitherto in the literature. Although rare, we believe that this type of an aberrant innervation might illuminate a partial hypesthesia of the fifth finger in case of an injury to the motor branch of the ulnar nerve (i.e., concomitant with fractures, surgical procedures, or entrapment neuropathies).

DOI: 10.1097/01.PRS.0000118270.35908.7A

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## MANAGEMENT OF LATE PRESENTATION OF A SPINAL ACCESSORY NERVE INJURY

*Sir:*

"Management of Iatrogenic Injury to the Spinal Accessory Nerve" by Chandawarkar et al.[1] provides valuable experience for treatment of lesions to the spinal accessory nerve identified less than a year after the injury. Occasionally, plastic surgeons may be consulted for the sequelae of spinal accessory nerve injuries that are recognized more than a year after the injury. The following case demonstrates the result obtainable using levator scapulae and rhomboid advancement in these patients, who are not candidates for nerve repair.

A 14-year-old boy underwent a right lateral neck release in October of 1997 for tethering burn scars that were related to a burn sustained in his second year of life. He had an uneventful early postoperative course, but began noticing weakness and right shoulder droop 3 years after the neck release (Fig. 1, *above*). On June 25, 2001, he underwent an Eden-Lange lateral transfer of the scapular insertions of the levator scapulae and rhomboid muscles. He remained in an abduction brace for 6 weeks postoperatively. At his recent 18-month follow-up visit, he had excellent stability of his shoulder and no functional limitation (Fig. 1, *below*).

We appreciate the work of Dr. Robert Szabo, which brought this technique to our attention.[2–4]

DOI: 10.1097/01.PRS.0000118271.35908.33

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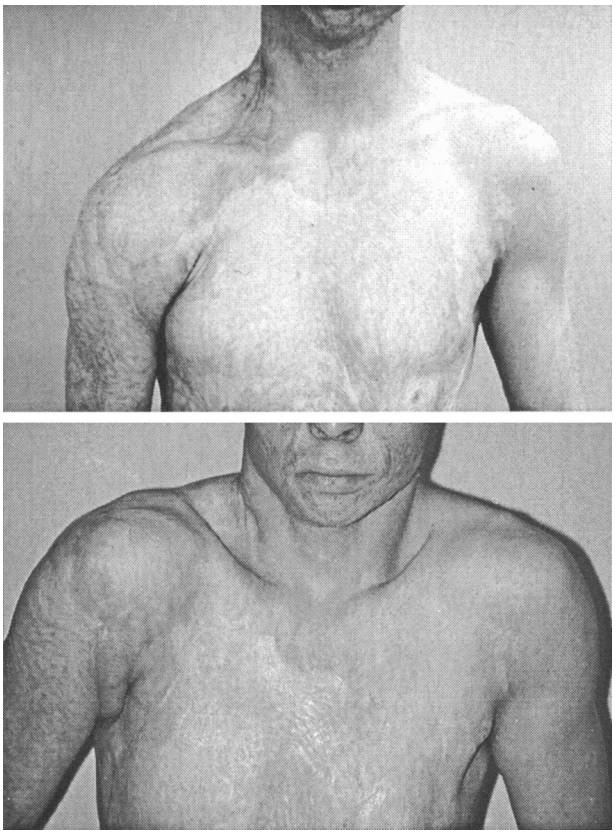

FIG. 1. (*Above*) Preoperative view of left shoulder droop more than 3 years after injury to the spinal accessory nerve. (*Below*) Postoperative view shows restored ability to actively elevate the left shoulder approximately 1 year after an Eden-Lange operation.

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