

adhesive Velcro fastener over the forearm-hand table to secure the forearm and hand in the table (Fig. 2). The total cost of the device is \$50 (American).

The desired position of the upper extremity can be easily obtained by means of the joints and the gliding systems of the device. The given position of the extremity is safely sustained with the aid of the concave surfaces of the device and the self-adhesive Velcro fastener. This is especially important for unconscious or sleeping patients and for children and restless patients, who have a natural tendency to lower the extremity. It will effectively incorporate a cast or an ice bag if necessary. The extremity can be observed or examined easily without repositioning. In the case of bilateral use, such as with burned



FIG. 2. The upper-extremity elevation device.



FIG. 3. Bilateral use of the elevation devices for a thermally injured patient. Note the free space around the patient for patient care as well as the stable position of the extremities.

patients, the devices do not occupy much space and there is sufficient room for patient care. In addition, the patient can keep his or her position in the bed by taking extra support from the devices (Fig. 3).

The device is attached to the bed for more stability and free placement. However, it can be designed as mounted on a mobile tripod system for use while the patient is walking. A similar device of smaller dimensions can be designed for use in children. It can be washed and sterilized by ultraviolet light, or sterile drapes can be applied to it. The device is not commercially available. The cost will probably be reduced in the case of serial production.

A new device is presented for elevation of the upper extremities. The extremity can be placed in the desired position with the aid of vertical and horizontal gliding systems and joints. In addition, the position of the extremity can be safely maintained even in unconscious patients by means of concave surfaces and self-adhesive Velcro fasteners. Its bilateral use in burned patients provides ample space around the patient for nursing and physical therapy procedures.

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THE REVERSE LATISSIMUS DORSI FLAP FOR LUMBAR DEFECTS

Sir:

We read with great interest the article by Benedetto et al. entitled "The Free Latissimus Dorsi Flap Revisited: A Primary Option for Coverage of Wide Recurrent Lumbosacral Defects" (*Plast. Reconstr. Surg.* 109: 1960, 2002). We would like to compliment the authors on a well-written article, and we would like to submit our own experience on the subject.

The treatment of large defects of the lower back and lumbar area is indeed very difficult. The authors advocate the use of a free latissimus dorsi flap with an extended pedicle by means of interposition vein grafts. However good an option



FIG. 1. Fifty-five-year-old man with a well-differentiated liposarcoma. (Above, left) Pre-operative markings. (Below) Operative view of reverse latissimus dorsi flap. (Above, right) Postoperative view at 6 weeks.

this is, it submits the patient to a fairly large surgical trauma and prolonged operative time. At the same time, the technique is a contraindication in paraplegic patients, as the latissimus dorsi function is imperative for moving in and out of a wheelchair.

Another surgical option that was not mentioned in the article is the reverse latissimus dorsi myocutaneous flap.^{1,2} The latissimus dorsi flap has a type V pattern of circulation, according to the Mathes and Nahai classification.³ The reverse latissimus dorsi flap can be used as a rotation flap with an arc or rotation of approximately 90 degrees, or it can be used as a turnover flap.

Use of the reverse latissimus dorsi flap does not require microsurgical expertise or setup, it does not have the complications that affect free flaps in general, and it submits the patient to a much shorter operation. If the defect is relatively small, only a portion of the muscle need be harvested, so the remaining can be left functional, which is very important for paraplegic patients. An additional

advantage of the reverse latissimus dorsi myocutaneous flap is that a large part of its sensory innervation comes from the intercostal nerves that remain intact; the flap is therefore sensate. The latter is of paramount importance because the area is submitted to high pressures in paraplegic and bedridden patients.

We have used this flap successfully in four cases¹⁻⁴ (Fig. 1), and we would submit that it is a noteworthy addition in the armamentarium of plastic surgeons dealing with this problematic area.

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REPLY

Sir:

I thank Dr. Mandrekas and Dr. Zambacos for their interesting comments about our article "The Free Latissimus Dorsi Flap Revisited: A Primary Option for Coverage of Wide Recurrent Lumbosacral Defects" (*Plast. Reconstr. Surg.* 109: 1960, 2002), and I'm very glad the contents of the article stimulated them to this discussion.

We surely agree with them that the procedure can be long and that it submits the patient to a larger surgical trauma compared with the reverse latissimus dorsi flap, which we find anyway a valid and in some cases very indicated reconstructive option. The point is that we used the prolonged flap in patients affected by multiple recurrences in the lumbar or sacral areas where several other procedures had been tried before and therefore several former incisions were already present. Furthermore, mostly in the sacral region, the reverse latissimus dorsi flap can be too short to obtain a tension-free, and therefore stable, coverage of the defect.

The possibility described by Mandrekas and Zambacos of partially maintaining the sensory innervation of the flap is surely of great interest, mostly in paraplegic patients. In our series, we did not have any such patients, so we did not have the need for a sensate flap. However, a secondary indirect sensibility in the flap area was reported by the treated patients, beginning 3 months after the operation.

Our idea was to try to supply the sensory innervation by using the nerve of the latissimus dorsi flap itself. In this way, we could use the donor nerve, taking it as long as possible, to perform a nerve anastomosis to a sensitive nerve located in the recipient area, thereby avoiding a nerve graft. Further details will be described soon.

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A RARE VARIANT OF THE DEEP INFERIOR EPIGASTRIC PERFORATOR: IMPORTANCE OF PREOPERATIVE COLOR-FLOW DOPPLER SCANNING ASSESSMENT

Sir:

We found a rare variant of the deep inferior epigastric perforator (DIEP) with color-flow duplex scanning preoper-

atively. Giunta et al.¹ described three subdivisions of the anatomical types of fascia penetration by the perforating vessel. However, the conventional acoustic Doppler sound can only provide information about the position of penetrating points of the perforating vessels through the fascia; it cannot provide information about whether the vessel runs above or below the fascia for a few centimeters. We reconfirmed the importance of the preoperative assessment by means of color-flow duplex scanning.

A 42-year-old woman had previously undergone left radical mastectomy with axillary dissection for breast cancer. The preoperative color imaging revealed several large perforators at the right inferior abdominal region and one large and several small perforators at the left region. The large perforator in the left region was running on the muscle without penetrating it. A right pedicled transverse rectus abdominis musculocutaneous (TRAM) flap with left DIEP vascular augmentation was planned. The left deep inferior epigastric artery demonstrated a dominant lateral branch by direct intraoperative visualization. This perforator was turning around the lateral edge of the rectus abdominis muscle, running under the anterior fascia for approximately 4 cm superomedially and then penetrating the fascia (Fig. 1). The



FIG. 1. The dominant perforator was turning around the lateral edge of the rectus abdominis muscle, running under the anterior fascia for approximately 4 cm superomedially and then penetrating the fascia.

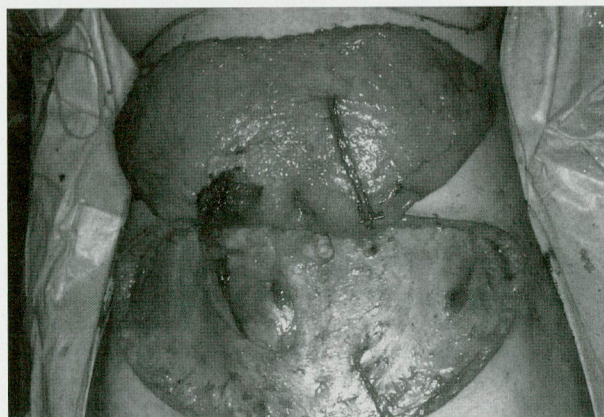


FIG. 2. A right pedicled transverse rectus abdominis musculocutaneous flap with left deep inferior epigastric perforator vessels was elevated.