

Letter to the Editor in Plastic and Reconstructive Surgery

**The sensate medial dorsal intercostal artery perforator flap as an option for treatment of dorsal cervicothoracic midline defects**

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Dear Sir

We read with interest the CME on chest wall reconstruction by Netscher et al. (1). We agree with the authors that regional reconstructions of the posterior trunk can be challenging because of relative inaccessibility for pedicled flaps, exposure of bone or orthopedic hardware, infection and loss of function.

Traditionally, muscle or musculocutaneous flaps have been used to treat posterior midline defects in the cervicothoracic area. These flaps provide well vascularized tissue for the treatment of infection, to fill dead space and cover bone and orthopedic hardware. Although perforator flaps have become increasingly popular, the authors mention only the distant musculocutaneous perforator flaps for the treatment of defects in the midline. According to the authors, these flaps require a distinct dissection that even can take a transpleural course.

Recently we reported on the use of a sensate fasciocutaneous perforator flap based on the medial dorsal intercostal artery perforator for the closure of complex dorsal midline defects (2). Our anatomic study revealed that there appeared to be a medial perforator at each intercostal level although the perforators varied in caliber. We have used flaps based on this perforator to close complex defects in the cervicothoracic midline. This axial flap provided well vascularized tissue to the area to allow tension free closure of the defect. The flap was used to cover exposed bone and orthopedic hardware and provided enough volume to fill dead space. By including the cutaneous nerve accompanying the perforator, protective sensibility was obtained as well. The flap sizes ranged from 13 cm x 4 cm to 16 cm x 7 cm. The use of this flap is illustrated with a drawing in figure 1 and a clinical case in figure 2.

An experimental study by Guerra et al. showed that there was no statistically significant difference in the results of treatment of deep and superficial infections with a musculocutaneous latissimus dorsi flap and its perforator counterpart (3). The regional

perfusion index for both flap types was greater than 0.6, indicating a similar capacity to heal wounds.

We agree with the authors that muscle function preservation at the donor site is important in any reconstruction. One of the main advantages of perforator flaps is their minimal donor site morbidity, as no muscle is included. With the use of the sensate medial dorsal intercostal artery perforator flap, muscle preservation is obtained. The dissection of this sensate flap with its base at the midline is relatively easy. We would like to draw attention to the possible use of this flap for dorsal midline defects in the cervicothoracic area. In case of failure or recurrence, the more traditional muscle flaps can still be used.

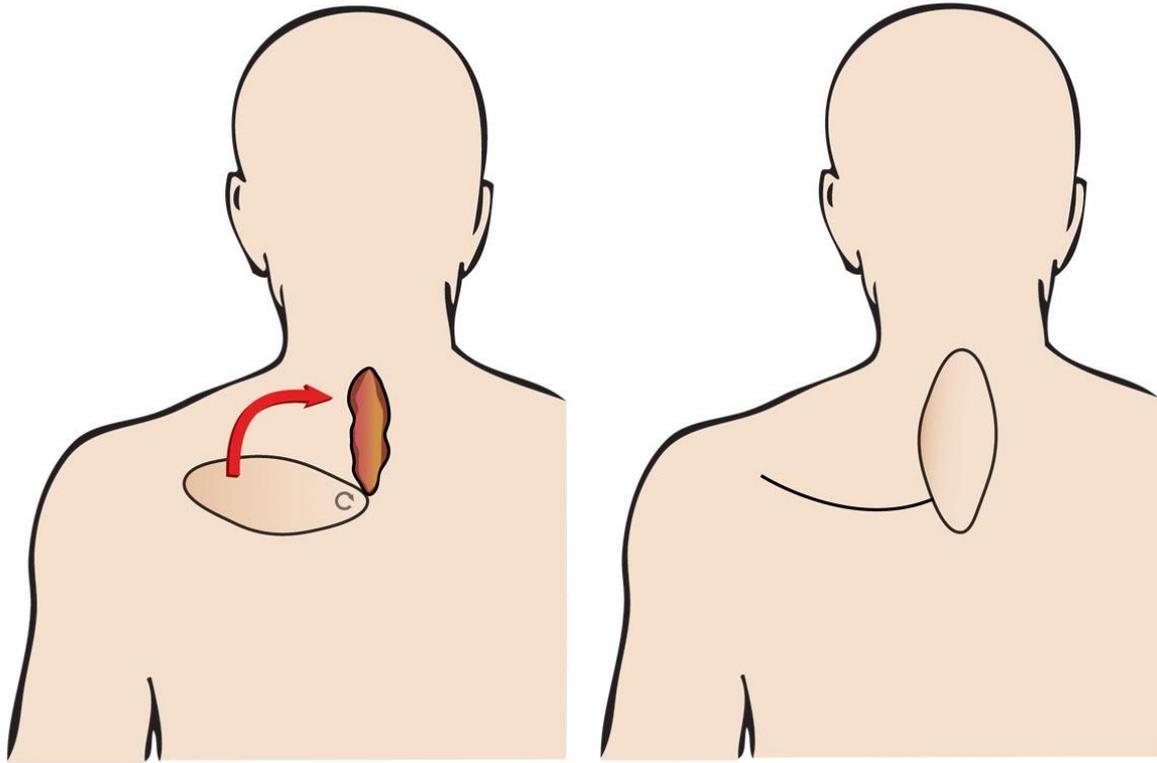
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**Figure 1**

The axial perforator flap based on the medial dorsal intercostal artery has its pivot point close to the midline and rotates easily into midline defects.



**Figure 2**

A 57 year-old man with postoperative wound infection after spinal surgery. After debridement, exposed bone and orthopedic hardware was covered by using a sensate medial dorsal intercostal artery perforator flap. Semmes Weinstein monofilament test at six weeks showed a threshold value of 3.61, indicating that protective sensibility had been obtained.