

# Case report: One stage reconstruction of a massive back defect with a large fasciocutaneous flap

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**Summary**—The use of fasciocutaneous flaps in the treatment of soft tissue defects has been widely accepted. This study presents a case in which a huge defect after surgical resection of an advanced rhabdomyosarcoma was reconstructed by an extraordinarily large vertical fasciocutaneous flap from the back.

## Case report

A 67-year-old female presented with a huge, advanced rhabdomyosarcoma (Fig. 1). The tumour had grown over a period of 3 years and, 3 months before, it had ulcerated. Ultimately it became too difficult for her to handle and she was admitted to our hospital.

With the exception of slight anaemia, laboratory findings were normal. C-T scanning revealed that the tumour was invading the trapezius, latissimus dorsi and part of the scapula. No distant metastasis was found. Biopsy revealed a rhabdomyosarcoma. The size of the tumour was 16 × 23 cm and the ulcer was 8 × 10 cm.

## Operation

The patient was placed in a prone position and a giant fasciocutaneous flap was designed on the side opposite the defect (Fig. 1). A wide resection of the fungating lesion was carried out including the trapezius, latissimus dorsi, serratus anterior and rhomboids, along with overlying and surrounding skin, subcutaneous tissues and a part of the scapula and periosteum of the ribs. This left an enormous excisional defect (Fig. 2). A fasciocutaneous flap 50 × 18 cm was elevated from its distal end without underlying trapezius or latissimus muscles and there were at no time any ischaemic or congestive signs. At its base the flap included the circumflex scapular, the cutaneous branch of transverse cervical, and some intercostal vessels (Fig. 3). Fluorescein injection confirmed its viability and it was then transposed to the defect. The donor site was closed as much as possible and the remaining area was covered with a split skin graft. A suction drainage tube was inserted under the flap for a period of 10 days after the operation. The entire wound healed well except for slight superficial epithelial necrosis of the flap, but this also healed within 2 weeks on conservative management. The patient was discharged from hospital and received radiotherapy at an out-patient clinic. A year after surgery no recurrence was noted and she has been able to carry on a normal life (Fig. 4).

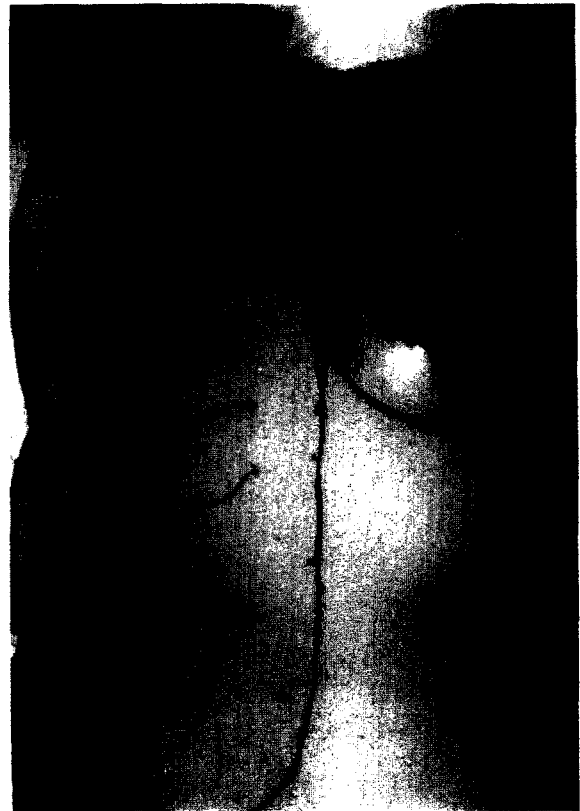


Fig. 1

Figure 1—A huge advanced rhabdomyosarcoma involving surrounding and underlying muscles and part of the scapula; design of the vertical back fasciocutaneous flap on the opposite side.

## Discussion

Skin grafts are the method of choice for closing posterior chest wall defects, provided bone is not



Fig. 2



Fig. 3



Fig. 4

exposed. Muscle and musculocutaneous flaps have simplified the reconstruction of more complex defects in this area, the most useful muscles being the trapezius and latissimus dorsi (Mathes and Nahai, 1982). However, it is now well known that fasciocutaneous flaps are excellent alternatives in various reconstructions.

Tolhurst *et al.* (1983) described how, even with random fasciocutaneous flaps, one can count between 20 and 30 longitudinally disposed arteries in the deep plexus and an equivalent number in the superficial plexus, which can adequately nourish a long fasciocutaneous flap.

While Cormack and Lamberty (1983) have pointed out that skin flaps raised to include the deep fascia in the expectation of increasing reliability, safety and length-to-width ratio must not be raised in a random manner but must be designed carefully taking into account the anatomical basis of the fasciocutaneous flap, Redplogle *et al.* (1983) have suggested that very long and narrow flaps take on an axial pattern even when not deliberately designed as such. We believe that both concepts are satisfied by our flap which contained in its base

Figure 2—Defect after resection of the tumour and incision of the flap. Figure 3—Elevation of the vertical back fasciocutaneous flap measuring 50 × 18 cm. Figure 4—Result one year after surgery and after completion of radiotherapy.

circumflex scapular, parascapular, cutaneous branches of transverse cervical and intercostal vessels as well as a network of arteries in the deep and superficial plexuses. We therefore decided to raise it without including latissimus dorsi or trapezius muscles. We decided against using a delay procedure as the length/breadth ratio of our flap was less than three to one and fluorescein injection intraoperatively revealed the entire flap to be viable.

All the flap healed well except for distal superficial necrosis. In view of this we now consider that it might be better to do a delay to get more certain survival of such huge flaps.

### References

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