Case Report

CLOSURE OF SACRAL PRESSURE SORE WITH V-Y TECHNIQUE

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SUMMARY:
Gluteus maximus musculocutaneous flap is among the various methods available for closure of sacral pressures sores. A case is presented where bilateral flaps were raised on sides of a sacral bed sores in the shape of "V" and were advanced into the defect. Donor area was closed in the shape of "Y". A similar technique was successfully used in another case, moving only skin & fascia without the muscle. Advantages of V-Y advancement are that it is simple, safe and executed in single stage.

INTRODUCTION
Pressure sores describe all types of tissue loss resulting from pressure. Most commonly they are found on sacrum, greater trochanter, back of heel, ischial tuberosities and the occiput.

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Dansereau & Conway placed the incidence of sacral bed sore after that of ischial and trochanteric in the order of frequency.

Several flaps are available for the closure of sacral bed sore. Some of these are transverse lumbosacral back flap, inferior gluteal thigh flap, and inferior based rotation flap. Most of the above flaps leave a donor site that often requires skin grafting. Furthermore they are not robust enough to combat infection.

Gluteus maximus musculocutaneous flap advanced in a V-Y fashion overcomes some of these deficiencies.

SURGICAL TECHNIQUE
Case No. 1 was a paraplegic lady, 18 years of age. The cause of paraplegia was spinal tumor which was removed one year previously. (Fig.1.)

Pressure sore was debrided and scared margins of the sore excised.

Flap designing began by marking its two pedicles i.e. superior gluteal artery (SGA) and inferior gluteal artery (IGA). SGA is lo-
Fig. 1:
Case 1: Pre-operative view sacral of bed sore with marking of pedicles patient in right decubitus, head to right. PSIS = posterior superior iliac spine. SGI = superior gluteal artery. IGI = inferior gluteal artery.

Cated about 5 cm below the posterior iliac spine and 5 cm lateral to mid sacral line. IGA is located 3 cm below the SGA and 5 cm lateral to mid sacral line (Fig. 2).

A triangular skin paddle in the shape of “V” was next marked with base at the margins of the sacral defect and apex towards greater trochanter.

Upper and lower sharp incisions were made through the skin, subcutaneous tissue and gluteus maximus muscle, taking care not to disrupt skin-muscle connections. Insertion of muscle was next detached from greater trochanter and iliotibial tract. The flap was elevated in the plane overlying the gluteus medius muscle and advance superiorly and medially into the defect.

The same procedure was done on the contralateral side. The two flaps were advanced into the defect and sutured to base of the sore and also to each other in midline. The resulting donor defect was closed in “Y” fashion (Fig. 3).

Case No.2 was a young male child of three years. It was a post operative case of meningomyelocele (Fig. 4). Only the skin flaps were raised to close sacral defect in case 2 and no muscle was used (Fig. 5).

The subcutaneous part of flap was sutured
Fig. 3: Bilateral flaps, unequal in size, approximated in midline to completely close bedsore site. Note the Y shaped closure of donor site to left.

with Polyglactin 910 (Vicryl) 2/0 and skin was closed with Polypropylene (Prolene) 3/0.

Wounds were drained for 48 hours. Postoperatively pressure was kept off of the operated area by appropriate positioning, changed every 2 hours. Skin sutures were removed two weeks, after surgery.

DISCUSSION

Ideal management of pressure sores is their prevention by identifying vulnerable patients and giving them good skin care, frequent change of posture and where available, use of water beds or low displacement air beds. Attention should be given to proper nutrition as a part of overall management.
Mohammad Ashraf Ganatra et al.

Surgical management of pressure sores requires thorough debridement of all dead tissue and removal of all bony projections followed by coverage with healthy tissue. For sacral bed sores this latter objective has been accomplished by various authors with primary closure, skin graft, reverse dermal graft, inferiorly based skin flap, gluteal thigh flap, transverse lumbar back flap. Some of these flaps e.g. reverse dermis random skin flap do not have a reliable vascular supply. Furthermore, often the donor site defect must be skin grafted, thus creating a further defect. Also, subcutaneous tissue often cannot cope with the gross infection often present in the depths of bed sores. Gluteus maximus musculocutaneous flaps overcome some of these problems.

Gluteus muscle flap was first described by Minami, Mills and Pardue in 1977. Its island modification was used by Maryami & Associates. Bilateral gluteus maximus flaps were used by Parry and Mathes in 1982.

When the sacral defect is less than 6 cm after debridement, unilateral flap is adequate. If defect is larger, bilateral flaps may be necessary for coverage.

Advantages of V-Y technique are that no donor site grafting of split skin is required and there is no need for a second stage to section the pedicle. Gluteus Maximus musculocutaneous flap being highly vascularised can effectively combat infection and tissue coaptation in the depths of pressure sore defect. This is encouraged by elimination of dead space in deep wounds, promotion of hemostasis and prevention of subsequent fluid collection beneath flap. This flap is also technically easier to raise.

One disadvantage of gluteus maximus flap in an ambulatory patient is loss of gluteus muscle function which can result in significant hip instability. It can be avoided by using only the superior or inferior half of the muscle. In the paraplegic the entire muscle may of course be employed for coverage.

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REFERENCES

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