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Double V-Y Advancement Myocutaneous Gluteal Flap for Chronic Sacral Sore Coverage

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ABSTRACT

There is a high incidence of pressure sore in patients with prolonged periods of prostration, being the sacral region a very frequent site for the appearance of these lesions.

Multiple surgical options to solve these ulcers have been described; a myocutaneous flap using the gluteus muscles or a fasciocutaneous flap are the most popular options.

In this work we describe the use of a double V-Y advancement myocutaneous gluteal flap for the coverage of a chronic sacral ulcer in a paraplegic patient.

As it has been described since 1970, this flap has been used to cover this type of ulcers because it offers adequate tissue quality, with good vasculature and plentiful thickness to prevent recurrences.

Keywords: Myocutaneous flap, Sacral ulcer, Gluteal flap

INTRODUCTION

Pressure ulcers continue to be a major medical-surgical problem, due to their frequency, their multidisciplinary treatment requirement and their high cost [1]. Pressure ulcers are classified according to their severity in stages I to IV **(Figure 1)** [2]. Stage I and II ulcers usually evolve well with conservative treatment, while those in stages III and IV require surgical treatment for healing.

Stage	Treatment
Stage I	Wound protection with transparent film, preventive measures
Stage II	Dressings to maintain a moist wound environment
Stage III	Debridement of necrotic tissue, coverage with appropriate dressings, treatment of infection if present
Stage IV	Debridement of necrotic tissue, coverage with appropriate dressings, treatment of infection if present, surgery if necessary

Figure 1. Pressure ulcers are classified according to their severity.

The patients who most frequently suffer ulcers from sacral pressure are those who have problems to mobilize, which generates prolonged prostration periods, generating constant pressure in the affected region. The causes are multifactorial and respond to intrinsic and extrinsic factors. Among the former are the neuropathic, altered autonomic control, infection, age, sensory deficit, mobility, altered mental status, fecal/urinary incontinence, occlusion of small vessels, anemia and malnutrition. Among the extrinsic factors, pressure, shear, friction and humidity are mentioned. Both play an important role in ulcer formation [3].

Gluteal flaps have been used for treating sacral sores since 1970. Since then, diverse treatment methods have been developed; the most popular methods are a myocutaneous and fasciocutaneous flaps being the former the one with more advantages and benefits in paraplegic patients because although there is total or partial loss of gluteus maximus muscle function, this deficit has no relevance [4].

TECHNIQUE

Under general anesthesia, the patient is placed in a prone position. Antisepsis protocol and sterile field placement are

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performed on a regular basis. We proceed to stain with methylene blue all the tissue inside the ulcer to ensure its proper removal. Excision of the ulcer and the surrounding granulation tissue are performed as well as the bony prominences are smoothed.

Large triangular skin islands were marked and incised with the medial side being slightly larger than the residual defect and lying adjacent to it. The superolateral border of the gluteus maximus muscle was isolated and divided. The muscle was elevated away from the underlying gluteus medium muscle, beginning laterally and proceeding medially, with careful to identify and preserve de gluteal vessels. Then, the rest of the origin of the muscle and its inferior portion are divided. After that, the muscle and its skin island were advanced as a unit to the midline and sutured with the contralateral flap. The defect is the closed as a V-Y advancement flap and the donor site closed primarily **(Figure 2)** [5].

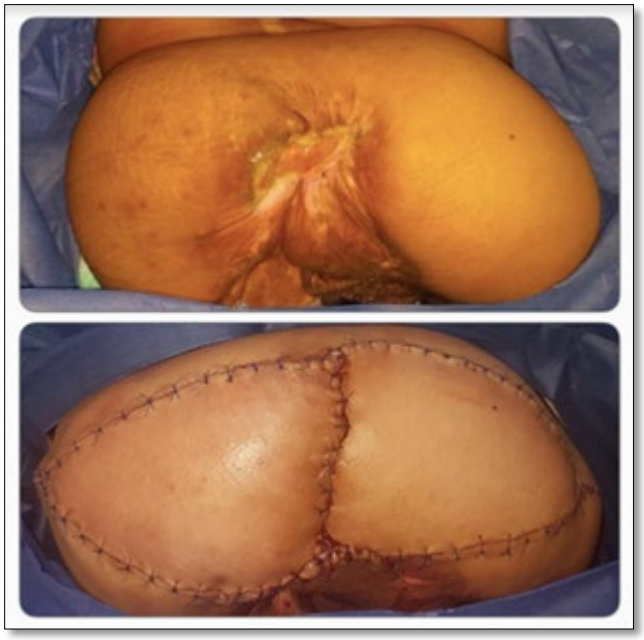

Figure 2. Double V-Y advancement myocutaneous gluteal flap for sacral ulcer coverage.

DISCUSSION

Local and regional flaps are the first option for coverage of sacral ulcers. Although multiple flaps of this type have been described, we believe that double V-Y advancement myocutaneous gluteal flap is the best option in this kind of patients because of its multiple advantages:

1. Easy design
2. Technically simple
3. Great mobility that allows covering large areas
4. Low rate of complications
5. Adequate vascularity
6. Plentiful thickness that allows to cover deep areas and that avoids recurrences
7. Preservation of the reconstructive principle like to like
8. Although there is total or partial loss of gluteus maximus muscle function, this deficit has no relevance

This flap have the disadvantage of the muscle function lost because of the disruption of its origin and insertion, however, in paraplegic patients, like in this case, this have no consequences.

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