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Gluteal fascio-cutaneous rotation advancement flap in the management of sacral pressure sores

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Abstract
Aim: To evaluate the impact of gluteal fascio-cutaneous rotation advancement flap was done to manage sacral sores.
Material and Methods: The present study was conducted in Plastic and Reconstructive Surgery Department of Index Medical College among ten patients selected consecutively from July 2019 to Aug 2020. The Gluteal fascio-cutaneous flap was performed in 10 patients with sacral pressures sores. The age group of patient ranged from 30-60 yrs. Personal information such as age, sex, reason for being bedridden. History of presenting complaints including onset of symptoms, course of disease, and duration of symptoms. Past medical and surgical history, to rule out associated co-morbidities and any previous trauma or surgery. Daily dressings done to remove all the unhealthy tissue till the granulation tissue appeared.
Results: All patients had involvement of sacrum only. 9 cases had no post-operative complications and flaps survived well. In 6 month of follow-up one patient had surgical site infection leading to suture dehiscence, for which conservative management was done and later closed with secondary suturing.
Conclusion: Gluteal rotational advancement flap provides durable and protective cover for sacral pressure sores. This flap offers single stage, stable and well vascularized soft tissue coverage.

Keywords: gluteal fascio-cutaneous rotation, sacral pressure

Introduction
Sacral region is one of the most frequent sites of pressure sore development and local flaps of the gluteal region are usually preferred when surgical closure is needed. Various techniques are available for further management like flaps from gluteal region, split skin graft and full thickness skin grafts. There can be unilateral or bilateral flap depending upon the size of defect. Risk factors include immunocompromised state, diabetes and vascular diseases, poor hygiene, poor nutrition and Dehydration, prolonged immobility, friction and local humidity, anaemia, fecal and urinary incontinence. In this study gluteal fascio-cutaneous rotation advancement flap was done to manage sacral sores.

Material and Method
The present study was conducted in Plastic and Reconstructive Surgery Department of Index Medical College among ten patients selected consecutively from July 2019 to Aug 2020.
The Gluteal fascio-cutaneous flap was performed in 10 patients with sacral pressures sores. The age group of patient ranged from 30-60 yrs.
Preoperative evaluation was done based on the following.
Personal information such as age, sex, reason for being bedridden.
History of presenting complaints including onset of symptoms, course of disease, and duration of symptoms.
Past medical and surgical history, to rule out associated co-morbidities and any previous trauma or surgery.
Daily dressings done to remove all the unhealthy tissue till the granulation tissue appeared.

Routine preoperative investigations.
Emergency debridement of necrotic tissue was done followed by dressings along with IV antibiotics for poly-microbial coverage.
After extensive debridement of pressure sores all patients had soft tissue defect. Largest defect that was closed with unilateral rotational flap of less than 12 cm and bilateral flap for defect more than 12cm was done. All patients followed for 6 months.

Fig 1

Surgical Management
Operations were performed with the patient in a prone position under general anesthesia. Tissue culture was confirmed in all operations.
In lesions smaller than 12 cm we choose to make unilateral flaps & for more than 12 cm lesion we use bilateral flaps to avoid excess tension in the sutures.
In the 7 cases unilateral rotational advancement flaps were performed. And in 3 cases bilateral flap were performed.
In gluteal fascio-cutaneous flap marking was performed by a line that started at the upper or lower extremity of the lesion, and extended in an arciform shape lateral-inferior (if it started on the upper extremity) or lateral-superior (if it started on the lower extremity).
The pre-marked line was then incised, down to the fascia of the gluteus maximus muscle. After rigorous haemostasis,

the flap was rotated and inset with 2-0 Vicryl sutures. Skin sutured with 2-0 nylon.

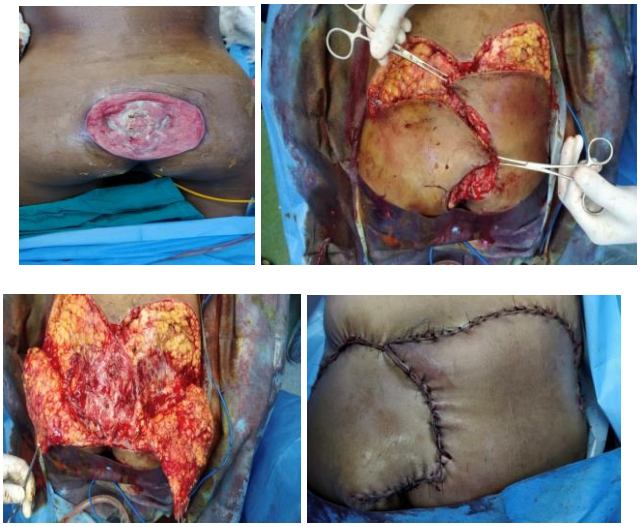

Fig 2

A wide skin pedicle was preserved at the inferomedial or supramedial part of the flap. This pedicle augmented the blood supply to the flap skin and kept the surgical incision small, thus helping to reduce associated wound healing problems.
Vacuum drain was placed and were withdrawn when the flow rate was less than 20 ml.

Postoperative Care
All patients were put on a standard post-operative regimen that include closed suction drain maintained for atleast 3 days and low residue diet in the first week.
Antibiotics were used accordance with the tissue culture report.
Position was changed strictly every 2 hours.
Patients were followed up for 6months.
Sitting position was avoided for 3 weeks.

Result
All patients had involvement of sacrum only. 9 cases had no post-operative complications and flaps survived well. In 6 month of follow-up one patient had surgical site infection leading to suture dehiscence, for which conservative management was done and later closed with secondary suturing.

Discussion
Most frequent location of pressure sores is the sacral region, incidence reaching 82.4%.
Local flaps in the gluteal region are the first choice for reconstruction of sacral pressure sores. Since the primary closure of the lesion presents a high rate of faliure and recurrence.
The rotational fasciocutaneous flap is an excellent option as it presents several advantages, such as the preservation of underlying muscle, reducing morbidity of the donor area, possibility of new rotation of the flap using same incision with or without extension in case of lesion recurrence.
Fasciocutaneous flaps are less senstive to ischemia and more resistant to pressure than muscle flaps, have high mechanical resistance. Blood loss is reduced and the percentage of pressure sore free survival is increased.

Conclusion
Gluteal rotational advancement flap provides durable and protective cover for sacral pressure sores .It is a tension free flap. Fasciocutaneous flaps are preferred over musculocutaneous as ischemic damage is common in musculocutaneous flaps. This flap offers single stage, stable and well vascularized soft tissue coverage. Advantages are reliable flap, no donor site morbidity, less time consuming, less bulky, well vascularized soft tissue.

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