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Case Report

Proximal tensor fasciae latae (tensor fasciae latae-gluteus medius) musculocutaneous flap - a forgotten flap for trochanteric pressure injury: a case report

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ABSTRACT

Pressure sores over the trochanteric region are a common complication in paraplegic patients, often requiring surgical intervention due to deep tissue loss and bony prominence. We present a case of a 45-year-old paraplegic male with a chronic left trochanteric ulcer managed using a proximally based tensor fascia lata (TFL) flap incorporating the anterior gluteus medius. After thorough debridement and ostectomy, the flap provided durable, tension-free coverage. At 1-year follow-up, the patient showed complete healing with no recurrence. This technique offers a reliable and muscle-sparing option for reconstructing trochanteric pressure ulcers in non-ambulatory patients.

Keywords: Pressure injury, Trochanter, Proximal TFL, Gluteus medius

INTRODUCTION

Pressure injuries, formerly known as pressure ulcers or bedsores, are localized areas of tissue necrosis that develop due to prolonged pressure, shear, or friction, typically over bony prominences. They are particularly prevalent in individuals with impaired mobility, such as those with spinal cord injuries, and can lead to significant morbidity, prolonged hospitalization, and increased healthcare costs.[1] The pathophysiology involves sustained mechanical pressure that exceeds capillary perfusion pressure, resulting in ischemia, tissue hypoxia, and ultimately ulceration.[2] Risk factors include immobility, incontinence, malnutrition, sensory impairment, and chronic comorbidities such as diabetes or vascular disease.[3]

Among the various sites affected, the greater trochanter is especially vulnerable in patients confined to a lateral position, making trochanteric pressure injuries a common and particularly difficult problem in paraplegic individuals. These ulcers often involve exposure of the trochanteric bone and are complicated by infection, osteomyelitis, and extensive soft tissue loss. While conservative measures such as pressure offloading, wound care, and nutritional support are essential, surgical reconstruction is often necessary for durable wound closure and prevention of recurrence.[4]

Multiple reconstructive options exist, including local, regional, and free flaps. The tensor fasciae latae (TFL) flap, vastus lateralis flap are well-established options for trochanteric reconstruction due to its robust vascularity and reliable arc of rotation.[5,6] In this report, we describe a case of a chronic trochanteric pressure sore in a paraplegic patient successfully managed with a proximally based TFL flap incorporating the anterior portion of the gluteus medius muscle, emphasizing its utility in non ambulatory patients. It provides closure by using the rotation advancement concept and is based on the forgotten proximal sections of the TFL muscle and gluteus medius muscle.

CASE REPORT

A 45 year old male presented with pressure injury over left great trochanter region of 6 months duration. He met with a road traffic accident 4 years back and has been paraplegic since then. He was been on wheel chair and good nursing care was given at home to prevent pressure injuries. 6 months back on left tochanter region small ulcer started and and sinus tract developed. They presented to opd with 4×5 cms non blanchable skin over left trochanter region with a sinus tract in it with minimal discharge coming from the sinus tract (Figure 1). Patient was counseled regarding the nature of disease and its management options and rehabilitation and high chances of recurrence due to his paraplegic condition. Wound swab was sent from sinus tract for culture and sensitivity, and X-ray taken to rule out osteomylities. Then surgical fitness was obtained after getting necessary investigations done and planned for proximal tensor fascia latae musculo cutaneous flap cover under general anesthesia.

Figure 1: Defect.

Figure 2: Post debridement.

After inducing patient was placed in right lateral position and strapped. Methylene blue was injected into the sinus tract and waited for 10 minutes. The dye-stained area was debrided and bursectomy done (Figure 2). Ostectomy of the prominent greater trochanter region done (Figure 3). The flap was outlined, starting at the defect's posterior superior boundary, a rotation arc is drawn that rises to the iliac crest's height before descending inferior to its anterior superior iliac spine and ending about 8 cm below where the pedicle of the TFL enters. An incision was made through the skin, subcutaneous tissue, and gluteal aponeurosis to expose the underlying muscles. The TFL was detached from the iliac crest, and the anterior portion of the gluteus medius was carefully dissected off the gluteus minimus anteriorly and divided posteriorly as needed to include additional muscle as needed for the defect (Figure 4). During posterior dissection, branches of the superior gluteal artery were divided as they coursed toward the lateral circumflex femoral system.

Figure 3: Ostectomy.

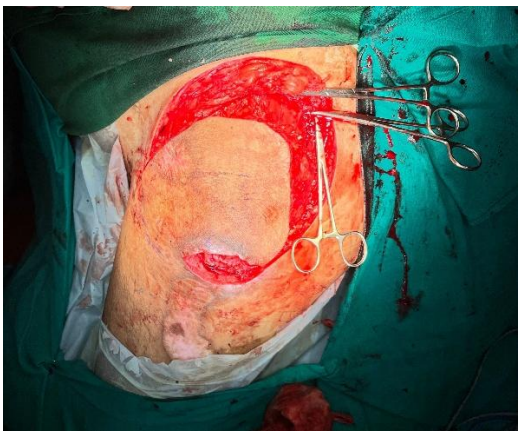

Figure 4: Flap raised.

No muscles are divided beyond the anterior border of the TFL, and careful subcutaneous dissection was carried out near the anterior pedicle without isolating the vessels.

The lateral femoral cutaneous nerve was preserved. Flap rotation was completed and closure performed in layers over a posterior drain. The resulting crescent-shaped secondary defect was closed by advancing undermined lower abdominal skin across the iliac crest, with fascia secured to gluteus minimus fascia to achieve a tension-free closure (Figure 5).

Figure 5: Final closure.

Figure 6: Follow up at 1 year.

Drain was removed on 4th preoperative day and patient was discharged and advised to sleep on right lateral or prone position at home for 1 month. In this period patient was regularly followed up for dressings and suture removal. At post operative 1 year follow up patient did not have any complaints and no recurrence of ulcer on the operated site with satisfactory healing (Figure 6).

DISCUSSION

Pressure injuries remain a persistent challenge in immobile patients, particularly those with spinal cord injuries. The trochanteric region is especially susceptible due to its prominence and exposure to direct pressure in lateral positioning. Management requires a multidisciplinary approach, addressing not only local wound care but also systemic factors such as nutritional status, comorbidities, and biomechanical offloading.[1] When deep tissue loss and bony prominence involvement, reconstructive surgery becomes essential for durable closure and to prevent recurrence.

For the management of simple pressure injuries surrounding the trochanter, the proximal TFL flap is advised. It provides closure via the rotation advancement concept and is based on the forgotten proximal parts of the TFL muscle and its adjacent gluteus medius muscle. It makes advantage of a region that was not previously utilised in the musculocutaneous repair of pressure sores and that other pressure-sore sites are unable to access. It presents a secondary defect that is easily healed from a distant and unscarred secondary location and moves a large gluteal medius muscle pad to the precise ostectomy site. By using it, the region's flaps are spared, and important reconstructive units like the classic TFL musculocutaneous and vastus lateralis muscle flaps are kept in reserve for future use.[7]

This flap should not be done in ambulatory patients. While the tensor itself is expendable, the gluteus medius plays a significant role in maintaining a regular gait, by acting as a powerful thigh abductor. Trendelenburg gait would probably result from the complete loss of the gluteus medius component. The traditional TFL flap is therefore recommended for ambulatory patients.

The TFL originates just posterior to the anterior superior iliac spine and inserts into the iliotibial tract, while the gluteus medius lies posterior and deep, arising from the iliac crest and wing. Deepest is the gluteus minimus, which also inserts into the greater trochanter. The TFL receives its dominant blood supply from the ascending branch of the lateral circumflex femoral artery, which enters the muscle approximately 8 cm below the anterior superior iliac spine. The gluteus medius is vascularized by the deep branch of the superior gluteal artery, and both muscles are innervated by the superior gluteal nerve. This robust dual vascular supply supports the reliability of the proximally based TFL–gluteus medius flap for trochanteric pressure sore reconstruction.[6]

The flap's base falls along a line from the greater trochanter to the estimated pedicle of the TFL, about 8 cm below the anterior superior iliac spine. Its width

ranges from 15 cm or more to 20 cm. The entire hip and trochanteric area in front of the gluteus maximus muscle is included in the arc of rotation. Because the vascular pedicle has not been disturbed, the entire traditional TFL musculocutaneous flap remains available for later requirements. This flap helps to cover uncomplicated trochanteric pressure injuries in non-ambulatory patients.

CONCLUSION

The proximal TFL flap incorporating the gluteus medius is a reliable and underutilized option for reconstructing trochanteric pressure sores in non-ambulatory patients. Its robust vascularity, ability to cover bony defects, and preservation of standard flap donor sites make it a valuable first-line option in non-ambulatory patient in whom recovery is unexpected.

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REFERENCES

1. Coleman S, Nixon J, Keen J, Wilson L, McGinnis E, Dealey C, et al. A new pressure ulcer conceptual framework. J Adv Nurs. 2014;70(10):2222-34.
2. Gefen A. The biomechanics of sitting-acquired pressure ulcers in patients with spinal cord injury or lesions. Int Wound J. 2007;4(3):222-31.
3. Berlowitz D, VanDeusen Lukas C, Parker V, Niederhauser A, Silver J, Logan C, et al. Preventing pressure ulcers in hospitals: a toolkit for improving quality of care. Agency for Healthcare Research and Quality (AHRQ). 2014
4. Nahai F, Silverton JS, Hill HL, Vasconez LO. The tensor fascia lata musculocutaneous flap. Ann Plast Surg. 1978;1:372.
5. Mathes SJ, Nahai F, eds. Clinical Atlas of Muscle and Musculocutaneous Flaps. St. Louis: Mosby; 1979: 63-85.
6. Little JW III, Lyons JR. The gluteus medius–tensor fasciae latae flap. Plast Reconstr Surg. 1983;71:366-73.
7. Minami RT, Hentz VR, Vistnes LM. Use of vastus lateralis muscle flap for repair of trochanteric pressure sores. Plast Reconstr Surg. 1977;60:364-70.

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