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CASE REPORT

Reconstruction of gluteal defects using free flaps

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Summary The TRAM flap, DIEP flap, and gluteal free flaps are routinely used for breast reconstruction. However, these have seldom been described for reconstruction of buttock deformities. We present three cases of free flaps used to restore significant buttock contour deformities. They introduce vascularised bulky tissue and provide adequate cushioning for future sitting, as well as correction of the aesthetic defect.

Introduction

The buttocks have important functional and aesthetic properties, both to provide cushioning for sitting and also acting as an element of beauty and sexual attraction.[1] Although aesthetic buttock surgery receives regular attention in the literature, reconstruction of buttocks after trauma or cancer surgery is uncommonly reported.

Previously described cases of buttock reconstruction employed pedicled myocutaneous flaps[2—4] or local fasciocutaneous or perforator flaps,[5,6] but few cases of free flap gluteal reconstruction could be found.[1,7] To our knowledge this is the first described series of patients where free flaps were used for significant gluteal defects.

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Patient One

A 39-year-old female presented with a atrophy of the right buttock following chemotherapy and radiotherapy for Burkitt's lymphoma of the hip at age 7 (Figure 1(left)). This was aggravated by hip replacement surgery as a young adult. As there was substantial tissue available from the contralateral buttock, a contralateral inferior gluteal free flap was planned.

Operative technique

Surgery was performed entirely in the prone, semi-flexed position. Muscular perforators of the right superior gluteal vessels were dissected to the parent vessels to act as recipients. A left inferior gluteal artery free flap was raised and transferred to the right buttock. Microvascular anastomoses

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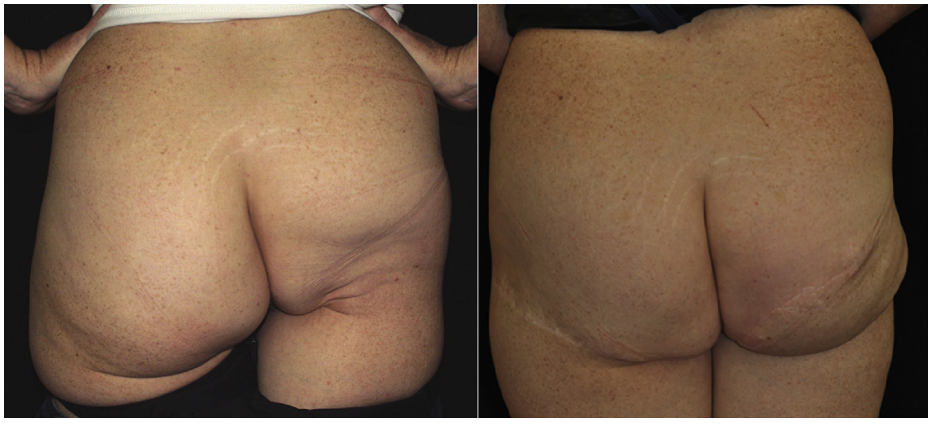

Figure 1 Patient One preoperatively (left) and result after buttock reconstruction using inferior gluteal artery perforator flap (right).

were performed end to end with 8-0 Nylon. The flap was inset to match the skin defect, and edges de-epitheliased to fold under undermined surrounding skin for contour matching.

Results

After 6 months, a small revision incorporating z-plasties and some skin excision was performed to improve the shape of the upper part of the buttock. At 2.5 years post-operative there was reasonable matching of contour with the opposite buttock (Figure 1(right)).

Patients Two and Three

Patients Two and Three were reconstructed with free TRAM flaps. Operative technique was similar for both patients, so only Patient Two will be described in detail.

Patient Two

A 42-year-old woman sustained multiple injuries from a motor vehicle accident at age 7. She presented as an adult with a large contour defect of the left buttock with extensive skin grafting directly over the gluteus musculature (Figure 2(left)). This was a major social embarrassment to her, restricted the kinds of clothing she could wear and affected her ability to sit. The patient's abdomen was reasonably lax following two pregnancies, with previous C-section, oblique lower abdominal and left colostomy-closure scars making her lower abdomen scarred as well.

Operative technique

CT angiography of the lower torso demonstrated perforator patterns favouring a free TRAM flap over a DIEP flap and adequate superior gluteal recipient vessels. Via an exploratory incision, left superior gluteal perforators were traced back to larger branches of these vessels to match the flap vessel size. Closing the exploratory wound temporarily, the patient was turned supine. A right-sided muscle-sparing free TRAM flap was raised. Mesh repair of the anterior rectus sheath was performed prior to division of flap vessels to save ischaemic time. After flap vessel division, the abdomen was closed temporarily with a large continuous suture and the patient returned to the lateral position. Vessel anastomosis was performed with 10/0 nylon due to the extremely thin-walled gluteal venous recipients. Only once flap viability was established was the contour defect delineated by excision of the old scar tissue and skin graft. The flap was trimmed to suit the volume deficit and inset with absorbable dermal sutures. The abdomen was then formally closed with the patient in the lateral position.

Patient Three

As a victim of the Indian Ocean tsunami on 26th December 2004, a 33-year-old female sustained multiple fractures,

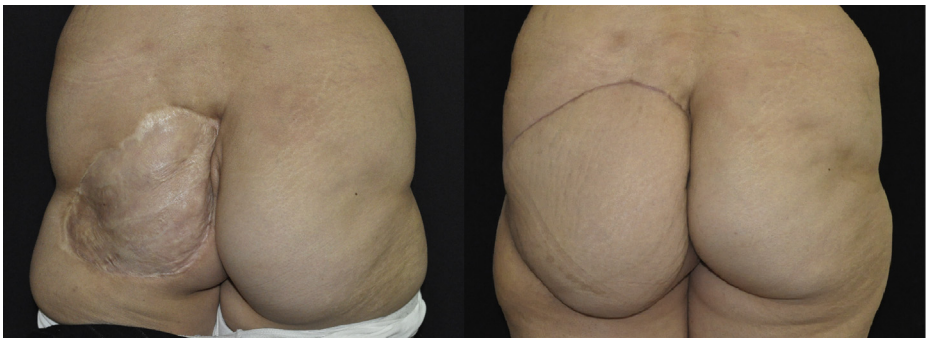

Figure 2 Patient Two preoperatively (left) and result after buttock reconstruction using TRAM flap (right).