

Secondary Extremity Reconstruction for Contour Deformity: Case Report

Kontür Deformitesi İçin Sekonder Ekstremitte Rekonstrüksiyonu

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ABSTRACT The reconstruction of the extremities due to contour deformities is a challenging process. Conventional modalities such as skin grafting have obvious drawbacks. A 18-year-old woman presented with an extensive scar on her right lower leg due to a traffic accident took place 10 years previously. In addition to semi circumferential skin scarring due to former skin grafting, soft-tissue loss was evident. Free tissue transfer of an anterolateral thigh flap was planned for reconstruction. To meet the cosmetic concerns of the patient, special consideration is required during the surgery. An cosmetically pleasing result was obtained within the operation. We consider that lower extremity reconstruction for only cosmetic purposes is a rare entity.

Key Words: Free tissue flaps; thigh; microsurgery; lower extremity; contour

ÖZET Kontür deformitelerine bağlı ekstremitte rekonstrüksiyonu zorlayıcı bir süreçtir. Deri greftleme gibi geleneksel yöntemlerin belirgin eksiklikleri vardır. 18 yaşında kadın hasta 10 yıl önce gerçekleşmiş trafik kazası sonucu sağ bacakta skar şikayeti ile başvurdu. Yarı sirküler skara ilave olarak geniş doku kaybının olduğu görüldü. Anterolateral uyluk flebi ile serbest doku nakli planlandı. Hastanın kozmetik endişelerinin giderilmesi için operasyon sırasında özel planlamalar yapıldı. Kozmetik olarak tatmin edici bir sonuç elde edildi. Kozmetik amaçlı alt ekstremitte rekonstrüksiyonunun az görülür bir durum olduğu kanaatindeyiz.

Anahatar Kelimeler: Serbest doku flepleri; uyluk; mikrocerrahi; alt ekstremitte

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The reconstruction of the extremities due to contour deformities is a challenging process. Conventional modalities such as skin grafting have obvious drawbacks. Inferior skin quality and insufficient volume effect are the most prominent among these limitations.¹ Tissue expansion is another treatment option, but it requires an intact adjacent tissue, a specific time for tissue expansion and a second operation.² Local muscle or cutaneous flaps can also be used, but these flaps also have limitations such as muscle sacrifice.³ Furthermore, these conventional methods do not meet the highest cosmetic demands of patients with extremity deformities.

The perforator flaps gained popularity in various reconstructive fields and are satisfactory treatment options for covering and restoring tissue defects in the extremity reconstruction.^{4,5}

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In our case; we considered that the reconstruction of the lower extremity for cosmetic purpose is a rare entity.

CASE REPORT

A 18-year-old woman presented with an extensive scar on her right lower leg due to a traffic accident took place 10 years previously. In addition to semi circumferential skin scarring due to former skin grafting, soft-tissue loss was evident (Figures 1,2). The patient was able to walk and her only concern was cosmetic disturbance. Arterial pulses were palpable on physical examination. An arterial angiography was also performed pre-operatively and vascular flows were seen in tibialis anterior, posterior and peroneal artery.

Free tissue transfer of an Anterolateral thigh flap (ALT) was planned for reconstruction. Skin and soft-tissue defects were recreated by excision of the scar tissue. After excision and scar-tissue release, an 18 x 10-cm-sized anterolateral thigh flap was harvested. Arterial anastomosis was performed in an end-to-side fashion between the tibialis posterior artery and flap pedicle. The tibialis posterior veins were repaired to the vena comitantes of the pedicle. After microsurgical vascular anastomosis, flap inseting was performed with diligent thickness control and defatting. During skin closure, additional flap tailoring was undertaken to match skin tension and achieve a cosmetically pleasing contour (Figure 3).

The flap survived well except for a small area of tip necrosis, which healed spontaneously with



FIGURE 1: Aesthetically displeasing tissue defect. Lateral view.



FIGURE 2: Aesthetically displeasing tissue defect. Medial view.



FIGURE 3: Immediate post operative view of ALT flap.

wound care (Figures 4, 5). Secondary debulking was not performed and the cosmetic result was acceptable in the second month post operatively (Figure 6).

The written consent was given by the patient himself for the use of his images.



FIGURE 4: 3rd week post operatively.



FIGURE 5: 3rd week post operatively.

DISCUSSION

To meet the cosmetic concerns of the patient presenting with extremity deformity, special consid-

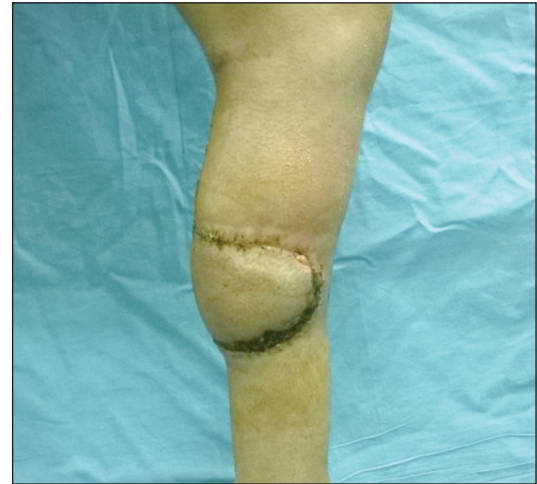


FIGURE 6: 2nd month post operatively.

eration was required during the surgery. The recreation of the defect was an important fundamental step. Care must be taken not to damage underlying neural and vascular structures since they easily become visible after scar excision. Careful control of flap thickness is fairly important for obtaining a satisfying appearance postoperatively, and the thinning of the flaps is a well-known maneuver in various situations.⁶

The prototype of perforator flaps is certainly the ALT flap, which was first introduced by Song et al. in 1984.⁷ Since then, it has gained widespread popularity due to its versatility and other numerous advantages. The ALT flap has a long and sizeable pedicle, predictable anatomy and provides an opportunity to implement a two-team approach, thus minimizing the duration of surgery and minimal donor-site morbidity.⁷⁻⁹ However, its suitability for extremity, particularly post-traumatic reconstruction, has only recently been appreciated.¹⁰⁻¹³ Therefore the ALT flap was our flap choice for its previously mentioned advantages. Thickness-controlled ALT flap is well suited for our reconstruction case in the extremity because it provides large quantities of supple tissue with relatively low donor morbidity.

We consider that lower extremity reconstruction for only cosmetic purposes is a rare entity.

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