



Original Article

Soft tissue reconstruction of foot and ankle defects with reverse sural fasciocutaneous flaps[☆]

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ABSTRACT

Objective: This study presents the results of 25 consecutive patients and evaluates the success of reverse sural fasciocutaneous flap (RSFF) on coverage of the foot and ankle region.

Methods: A total of 25 patients with soft tissue defects in the lower leg, foot, or ankle were treated with RSFF, from January 2010 to January 2017. In the evaluation of patients, the form prepared by the clinic was used and the following data were collected: age, follow-up, gender, etiology, defect size, complications, and patient satisfaction rates.

Results: Mean follow up time was 18 months. In all patients, the defects were fully covered. Three patients developed partial necrosis due to venous congestion. There was no complete flap loss in any of the patients. Patient satisfaction was excellent in all cases.

Conclusion: RSFF is quick, versatile, and easy to apply; it also provides safe soft tissue coverage, requires no microvascular repair, and provides an alternative to microsurgical reconstruction.

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Reconstrução do tecido mole de defeitos do pé e do tornozelo com retalhos fasciocutâneos surais de fluxo reverso

RESUMO

Objetivo: Este estudo apresenta os resultados de 25 pacientes consecutivos e avalia o sucesso do retalho fasciocutâneo sural de fluxo reverso (RFSR) na cobertura da região do pé e tornozelo.

Palavras-chave:

Lesões no tornozelo

Lesões nos pés

[☆] The study was conducted in Katip Celebi University, Izmir Atatürk Training and Research Hospital, Department of Orthopaedics and Traumatology, Izmir, Turkey.

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26 Procedimentos cirúrgicos
 27 reconstrutivos
 28 Satisfação do paciente
 29 Resultado do tratamento
 30

Métodos: Foram analisados 25 pacientes com defeitos de partes moles na parte inferior da perna, pé ou tornozelo com RFSR, de janeiro de 2010 a janeiro de 2017. Na avaliação dos pacientes, o formulário preparado pela clínica foi utilizado e os seguintes dados foram coletados: idade, seguimento, sexo, etiologia, tamanho do defeito, complicações e grau de satisfação do paciente.

Resultados: O tempo médio de seguimento foi de 18 meses. Em todos os pacientes, os defeitos foram totalmente cobertos. Três pacientes desenvolveram necrose parcial devido à congestão venosa. Não houve perda total do retalho em nenhum dos pacientes. O grau de satisfação dos pacientes foi excelente em todos os casos.

Conclusão: O retalho fasciocutâneo sural reverso é rápido, versátil e fácil de aplicar. Além disso, fornece uma cobertura de tecidos moles segura, não requer reparo microvascular e é uma alternativa à reconstrução microcirúrgica.

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Introduction

39 Reconstruction of the foot and ankle soft tissue defects
 40 remains a challenging problem for reconstructive surgeons
 41 due to thin coverage tissues and poor blood supply.¹ Thus,
 42 among the options for reconstructing of defects around the
 43 ankle or the foot, direct closure or skin grafting may not be
 44 applicable in many cases.

45 Free flap transfer, has often been accepted as the operation
 46 of choice in cases where the local tissues of the foot and ankle
 47 were severely compromised.² Further progress in the studies
 48 of the microsurgery, especially the concept of angiosomes,^{3,4}
 49 neurovascular flap technique and neuro-adipo-fascial pedicled
 50 flaps⁵ has been alternative popular solutions. Moreover,
 51 the reverse sural fasciocutaneous flap Reverse Sural Fascio-
 52 cutaneous Flap (RSFF) has been described by Masquelet et al.⁶
 53 in 1992 and has been accepted as a possible alternative for
 54 mentioned defects. In the literature, successful results of RSFF
 55 have been reported.^{7,8}

56 The aim of our study was to present the results of our 25
 57 consecutive patients and evaluate the success of RSFF on cov-
 58 erage of foot and ankle region.

Patients and methods

59 Each author certifies that his or her institution approved
 60 the human protocol for this investigation, that all investiga-
 61 tions were conducted in conformity with ethical principles of
 62 research, and that informed consent for participation in the
 63 study was obtained.

64 A total of 25 patients with soft tissue defects in the lower
 65 leg (Fig. 1), foot (Fig. 2) or ankle were treated with RSFF, from
 66 January 2010 to January 2017. Of the 25 patients, 21 (84%) were
 67 males and four (16%) were females. The average age was 44
 68 (13–83). In 8 (32%) patients skin defects were due to traffic acci-
 69 dents, fall from height in four (16%) patients, gunshot injury
 70 in three (12%) patients, previous Achilles tendon surgery in
 71 three (12%) patients, crush injury in three (12%) patients, infec-
 72 tion/cellulites in two (8%) patients, tumor resection in one
 73 (4%) patient and chronic osteomyelitis in one (4%) patient.



Fig. 1 – Sural Fl, preoperative and early postoperative photographs of a patient with cruris distal third defect.

74 Defect areas were, lower one third of cruris in 12 (48%) patients,
 75 Achilles tendon in three (12%) patients, dorsal surface of foot
 76 in 6 (24%) patients, calcaneal area in three (12%) patients
 77 and medial area of foot in one (4%) patient. There was no
 78 concomitant fracture in seven (28%) patients and the other
 79 patients have either closed or open fractures. The smallest
 80 defect was 3 cm × 3 cm at medial malleolar area due to chronic
 81 osteomyelitis and the largest skin defect was 6 cm × 8 cm at
 82 lower third of cruris due to surgery for tibia pilon fracture.

83 In the evaluation of patients, the form prepared by our
 84 clinic was used: Age, follow-up, gender, etiology, defect size,
 85 complications, patient satisfaction rates (Between 0 and 10
 86 points – 0 = Not satisfied, 10 = Very satisfied – that is, 0–2 points
 87 were evaluated as poor, 3–5 points were moderate, 6–8 points
 88 were good and 9–10 points were excellent).

Results

89 Mean follow up time was 18 months (2–35). In all patients,
 90 the defects were fully covered. Three patients developed

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