

BÖLÜM 10

EL VE PARMAK DEFEKTLERİ İÇİN KULANILAN LOKAL FLEPLER

Ibrahim Faruk ADIGÜZEL¹

GİRİŞ

Eldeki yumuşak doku defektleri travma, enfeksiyon ya da tümöral nedenlerle oluşmaktadır. Elin kompleks yapısı ve önemli yapıların cilt altında bulunması nedeniyle defektlerin örtümü cerrah için zorlayıcı hale gelmektedir. Eklem ve tendonların eks-kürsiyonuna izin veren stabil, uzun ömürlü ve estetik olarak kabul edilebilecek örtüm sağlanmalıdır(1) Palmar yüz defektleri için kendine has anatomisi göz önünde bulundurularak örtüm yapılmalıdır. Mümkün olduğunda parmak uzunlukları korunmalı, kontraktür gelişimi önlenmelidir. Tendon ve eklem hareketlerine izin veren dayanıklı, hissiyatı olan bir örtüm elde edilmelidir. Nihai amaç ise fonksiyonların yeterince restore edilmesi ve hastanın günlük aktivitelerine, işine donebilmesidir. Bu ihtiyaçların tamamının karşılanması için genellikle flep ile örtüme ihtiyaç duyulur.

Kesilerek meydana gelen yaralanmalar, kontaminasyon veya enfeksiyon tablosu yoksa debitman sonrası primer onarılabilir. Primer onarım mümkün değilse hangi yöntem ile ne zaman kapatılacağı önem kazanır. Yara yönetiminde ilk basamak her zaman debitmandır. Turnike altında yapılmalı ve ölü dokuların tamamı uzaklaştırılmalıdır. Avülşyon, ezilme veya elektrik yanıklarında yaranın durumunun netleşmesi için bir süre beklemek gerekebilir, bu durumda 24-48 saat aralıklarla seri debitman yapılmalıdır.

Yara örtümünün gecikmesinin flep kaybı ve enfeksiyon oluşumuna sebep olduğuna dair bilimsel kanıt olmamasına rağmen, olabildiğince erken yara örtümü önerilmektedir(2). Erken rekonstrüksiyon yapılarak dokular ve vasküler pediküller; ödem, skar dokusu, fibrozis gelişmeden teknik olarak daha kolay şekilde tedavi edilebilir. Tedavi sonucunda da erken kapama ile tendonlarda yapışıklık ve eklemelerde sertlik oluşumu önlemeye çalışılır.

¹ Op. Dr., El Cerrahisi Yandal Uzmanı, Etlik Şehir Hastanesi, Ortopedi ve Travmatoloji Kliniği, ifarukadgzl@gmail.com, ORCID iD: 0000-0003-2493-5540

KAYNAKLAR

1. C.K. Alphonsus, Principles in the management of a mangled hand, Indian J. Plast. Surg. 2011; 44 (2): 219–226
2. Gupta A, Lakhiani C, Lim BH, et al. Free tissue transfer to the traumatized upper extremity: risk factors for postoperative complications in 282 cases. J Plast Reconstr Aesthet Surg. 2015;68(9):1184e1190
3. Scherer SS, Pietramaggiore G, Mathews JC, et al: The mechanism of action of the vacuum-assisted closure device. Plast Reconstr Surg 2008; 122(3):786–797.
4. Biswas D, Wysocki RW, Fernandez JJ, Cohen MS. Local and regional flaps for hand coverage. J Hand Surg Am. 2014;39(5):992e1004
5. Erin Anne Miller, Jeffrey Friedrich, Soft Tissue Coverage of the Hand and Upper Extremity: The Reconstructive Elevator. J Hand Surg Am. Vol. 2016: 41/7, p782-792.
6. Koshima I, Inagawa K, Urushibara K, et al. Fingertip reconstruction using partial-toe transfers. Plast Reconstr Surg 2000;105:1666–74.
7. M.M. Bashir, M. Sohail, H.B. Shami, Traumatic wounds of the upper extremity, Hand Clin. 2018; 34 (1):61–74.
8. DeFranzo AJ, Marks MW, Argenta LC, et al: Vacuum-assisted closure for the treatment of degloving injuries. Plast Reconstr Surg 1999; 104(7):2145–2148.
9. Ruth En Si Tan, Amitabha Lahiri. Vascular Anatomy of the Hand in Relation to Flaps. Hand Clin 2020; 36: 1–8.
10. Zbrodowski A, Marty F, Gumener R, et al. Blood supply of the subcutaneous tissue of the upper limb and its importance in the subcutaneous flap. J Hand Surg 1987;12B(2):189–93.
11. Becker C, Gilbert A. The ulnar flap. Handchir Mikrochir Plast Chir 1988;20(4):180–3 [in German].
12. Zancolli E, Angrigiani C. Posterior interosseous island forearm flap. J Hand Surg Br 1988;13(2):130–5.
13. Lippert H, Pabst R. Arterial variations in man. Muñchen (Germany): J.F. Bergmann; 1985.
14. Quaba A, Davison P. The distally-based dorsal hand flap. Br J Plast Surg. 1990;43(1):28-39.
15. Tubiana R, Duparc J. Restoration of sensibility in the hand by neurovascular skin island transfer. J Bone Joint Surg Br 1961;43-B(3):474–80.
16. Earley MJ. The arterial supply of the thumb, first web and index finger and its surgical application. J Hand Surg Br 1986;11(2):163–74.
17. Roberto Adani, Jin Bo Tang, David Elliot. Soft and tissue repair of the hand and digital reconstruction. J Hand Surg Eur Vol. 2022 Jan;47(1):89-97.
18. Ramirez MA, Means KR Jr. Digital soft tissue trauma: a concise primer of soft tissue reconstruction of traumatic hand injuries. Iowa Orthop J. 2011;31:110e120.
19. Venkatramani H, Sabapathy SR. Fingertip replantation: Technical considerations and outcome analysis of 24 consecutive fingertip replantations. Indian J Plast Surg. 2011;44(2):237-245.
20. Tay SC, Teoh LC, Yong FC, Tan SH. The prevention of neuroma formation by diathermy: An experimental study in the rat common peroneal nerve. Ann Acad Med Singapore 2005 Jun; 34(5): 362-368.
21. Shores JT, Lee WPA. Fingertip injuries. In: Chung KC (Ed). Hand Surgery Update V. Chicago: ASSH; 2011.
22. Mouchet A, Gilbert A.(Couverture des amputations distales des doigts par lambeau neuro-vaskulaire homogéné en îlot.) Ann Chir Main. 1982;180-182.
23. Achilleas Thoma, Larisa Kristine Vartija. Making the V-Y advancement flap safer in fingertip amputations. Can J Plast Surg 2010; 18(4): 47-49.
24. Evans DM, Martin DL. Step-advancement island flap for fngertip reconstruction. Br J Plast Surg. 1988;41(2):105–11.

25. Venkataswami DR, Subramanian N. Oblique triangular flap: a new method of repair for oblique amputations of the fingertip and thumb. *Plast Reconstr Surg.* 1980;66:296–300.
26. Ni F, Appleton SE, Chen F, Wang B. Aesthetic and functional Reconstruction of fingertip and pulp defects with pivot flaps. *J Hand Surg Am.* 2012; 37: 1806–11.
27. Giovanna Petrella, Daniele Tosi, Gianluca Sapino, and Roberto Adani. Fingertip defect reconstruction with a modified pivot flap. *J Hand Surg Eur Vol.* 2021 Jan;46(1):75-79.
28. Lai CS, Lin SD, Yang CC. The reverse digital artery fap for fngertip reconstruction. *Ann Plast Surg.* 1989;22:495.
29. Karacalar A, Sen C, Ozcan M. A modified reversed digital island fap incorporating the proper digital nerve. *Ann Plast Surg.* 2000;45(1):67–70.
30. Joshua Xu;Jacob Y. Cao;David J. Graham;Richard D. Lawson;Brahman S. Sivakumar. Clinical Outcomes and Complications of Primary Fingertip Reconstruction Using a Reverse Homodigital Island Flap: A Systematic Review. *Hand (N Y).* 2021 Apr 9.
31. Idone, Francesco; Sisti, Andrea; Tassinari, Juri; Nisi, Giuseppe (2016). Fenestrated Adipofascial Reverse Flap: A Modified Technique for the Reconstruction of Fingertip Amputations. *Journal of Investigative Surgery* 2016; 6, 353-358.
32. Dhiren Mahida. Handbook On Flaps In Crush Injuries Of The Hand. Jaypee Brothers Medical Publishers 2015, 1st Edition P32-34.
33. Littler JW. The neurovascular pedicle method of digital transposition for reconstruction of the thumb. *J Bone Joint Surg Am.* 1956;38:917.
34. Jin Bo Tang, David Elliot, Roberto Adani, Michel Saint-Cyr, Felix Stang. Repair and reconstruction of thumb and finger tip injuries: a global view *Clin Plast Surg.* 2014 Jul;41(3):325-59.
35. Omokawa S et al. The anatomical basis for reverse first to fifth dorsal metacarpal arterial flaps. *J Hand Surg Br.* 2005;30(1):40–4.
36. Pelissier P, Casoli V, Bakhach J, et al. Reverse dorsal digital and metacarpal flaps: a review of 27 cases. *Plast Reconstr Surg.* 1999;103(1):159e165.
37. Gregory H, Heitmann C, Germann G. The evolution and refinements of the distally based dorsal metacarpal artery (DMCA) flaps. *J Plast Reconstr Aesthet Surg.* 2007;60(7):731e739.
38. Tränkle M, Sauerbier M, Germann G. Restoration of thumb sensibility with the innervated first dorsal metacarpal artery island flap. *J Hand Surg Am.* 2003;28(5):758–66.
39. Elliot D, Moiemen NS, Jigjinni VS. The neurovascular TranquilliLeali flap. *J Hand Surg Br.* 1995;20(6):815e823.
40. Foucher G, Delaere O, Citron N, Molderez A. Longterm outcome of neurovascular palmar advancement flaps for distal thumb injuries. *Br J Plast Surg.* 1999;52:64–8.
41. Elliot D, Wilson Y. V-Y advancement of the entire volar soft tissueof the thumb in distal reconstruction. *J Hand Surg Br.* 1993, 18:399–402.
42. Sheriff MM. First dorsal metacarpal artery flap in hand reconstruction. I. anatomical study. *J Hand Surg Am.* 1994;19:26-31.
43. Rayan GM. First dorsal metacarpal artery flap. In: Rayan GM, Chung KC, editors. *Flap reconstruction of the upper extremity.* Rosemont: American Society for Surgery of the Hand; 2009.
44. Shi-Ming Feng, Jia-Ju Zhao, Filippo Migliorini, Nicola Maffulli;Wei X. First dorsal metacarpal artery flap with dorsal digital nerve with or without dorsal branch of the proper digital nerve produces comparable short-term sensory outcomes. *J Orthop Surg Res.* 2021; 16: 685.
45. Adani R, Squarzina PB, Castagnetti C, et al. A comparative study of the heterodigital neurovascular island flap in thumb reconstruction, with and without nerve reconnection. *J Hand Surg Br.* 1994;19(5):552e559.
46. Adani R, Tarallo L, Fonzone Caccese A, Delcroix L, Cardin-LangloisE, Innocenti M. Microsurgical soft tissue and bone transfer incomplex hand trauma. *Clin Plast Surg.* 2014; 3: 361–83.

47. Ono S, Sebastin SJ, Ohi H, Chung KC. Microsurgical flaps in repair and reconstruction of the hand. *Hand Clin.* 2017; 33: 425–41.
48. del Piñal F. An update on the management of severe crush injury to the forearm and hand. *Clin Plastic Surg.* 2020; 47: 461–89.
49. Rogachefsky RA, Mendieta CG, Galpin P, Ouellette EA. Reverse radial forearm fascial flap for soft tissue coverage of hand and forearm wounds. *Br J H Surg.* 2000;25(4):385–9.
50. Abdulaziz Alshenaifi, Nawaf Alohaideb . Reverse Radial Forearm Flap. In: Soft Tissue Reconstruction of the Hand: Loco-regional and Distant Flaps Selection and Approach. Singapore, Springer Nature Singapore; 2022. p. 167-173.
51. Costa H, Pinto A, Zenha H. The posterior interosseous flap—a prime technique in hand reconstruction. The experience of 100 anatomical dissections and 102 clinical cases. *J Plast Reconstr Aesthet Surg.* 2007;60(7):740e747.
52. Wang JQ, Cai QQ, Yao WT, Gao ST, Wang X, Zhang P. Reverse posterior interosseous artery flap for reconstruction of the wrist and hand after sarcoma resection. *Orthop Surg.* 2013 Nov;5(4):250-4.
53. Angrigiani C, Grilli D, Dominikow D, Zancolli EA. Posterior interosseous reverse forearm flap: experience with 80 consecutive cases. *Plast Reconstr Surg* 1993;92:285–293.
54. A. M. Acharya, A. K. Bhat, K. Bhaskaranand. The Reverse Posterior Interosseous Artery Flap: Technical Considerations in Raising an Easier and More Reliable Flap. *J Hand Surg Am* 2012;37(3):575-82.