

EL VE PARMAK DEFEKTLERİ İÇİN KULLANILAN LOKAL FLEPLER

Numan ATILGAN¹

GİRİŞ

Mikrovasküler parmaktan ele transferler dünya çapında artan sıklıkta yapılmaktadır. Teknikler, çok parmaklı amputasyonların, distrofik tırnakların ve pulpaların ve travmatize eklemlerin tedavisine izin verecek şekilde gelişti - bir parmağın neredeyse tüm ablatif deformateleri, bir tür ayak parmağı transferi ile yeniden yapılandırılabilir. Ayaktan ele transferden sonra sonuç değerlendirmesi genellikle canlılık ve hareket açıklığı, güç ve 2 noktalı ayırım dahil olmak üzere nesnel ölçümlere dayanır. Ancak bu tanım, önemli bir başarı kriteri olan hasta memnuniyetini içermediği için sınırlıdır.

Kemik uzatmaya alternatif olarak öncelikle baş parmak rekonstrüksiyonu için kullanılan parmaktan ele nakil, distal parmakların tek veya çoklu parmakların rekonstrüksiyonu ve doğuştan kusurlar için köklü bir yöntem haline geldi. Erken motor rehabilitasyon ve duyuşal yeniden eğitim gibi rehabilitasyondaki ilerlemelerle, yeniden yapılandırılmış elin koordinasyonu, el becerisi ve duyuşal iyileşmesi geliştirilebilir (1-6).

Nakledilecek ayak parmaklarının kapsamlı bir şekilde kesilmesi ve transfer tekniklerindeki özel hususlar, özellikle çoklu parmak nakillerinde majör donör saha morbiditesinden kaçınmaya yardımcı olmaktadır. Pulpa plasti gibi ikincil prosedürler, nakledilen parmakların görünümünü ve işlevini iyileştirdi (7-9).

Bu derlemede, merkezlerde gerçekleştirilen travma sonrası parmak rekonstrüksiyonu için 1000'den fazla parmak nakli deneyimine dayanarak, belirli teknik prosedürlere vurgu yaparak parmaktan ele nakil için bir kılavuz önerilmiştir. Herhangi bir ayak parmağı kesilmeden önce kapsamlı bir rekonstrüktif planın formüle edilmesini gerektiren metakarpal el gibi kapsamlı rekonstrüksiyonlar ve detaylı rehabilitasyon programları bu derlemenin kapsamı dışındadır.

¹ Op. Dr., Şanlıurfa Mehmet Akif İnan Eğitim ve Araştırma Hastanesi, El Cerrahisi AD., doktor_dao@hotmail.com, ORCID ID: 0000-0001-7184-978X



Resim 1. Kliniğimizde yapmış olduğumuz başarılı ayaktan ele parmak nakli.

KAYNAKLAR

1. Graham D, Bhardwaj P, Sabapathy SR. Secondary Thumb Reconstruction in a Mutilated Hand. *Hand Clin.* 2016;32(4):533-47.
2. Kumta SM. Unfavourable results in thumb reconstruction. *Indian J Plast Surg.* 2013;46(2):294-302.
3. Yamamoto Y, Ichihara S, Hara A, et al. The Utility of the Knotless Suture Fixation for Bilateral Second Toe Transplantation in Traumatic Multiple-Digit Amputation. *Case Rep Orthop.* 2018;2018:5194918.
4. Wei FC, Al Deek NF, Lin YT, Hsu CC, Lin CH. Metacarpal-Like Hand: Classification and Treatment Guidelines for Microsurgical Reconstruction with Toe Transplantation. *Plast Reconstr Surg.* 2018;141(1):128-35.
5. Ozols D, Butnere MM, Petersons A. The Second Toe-to-Hand Transfer for Full-length Thumb Reconstruction in Congenital Thumb's Grade IIIb to V Hypoplasia: MTPJ Arthrodesis Instead of Tendon Rebalancing. *Tech Hand Up Extrem Surg.* 2020;24(1):13-9.
6. Ozols D, Zarins J, Petersons A. Novel Technique for Toe-to-Hand Transplantation: The Fourth-toe as an Alternative Option for Toe-to-Hand Transplantation for Pediatric Patients. *Tech Hand Up Extrem Surg.* 2019;23(2):74-80.
7. Jones NF, Graham D, Au K. Bilateral Metacarpal Hands: Reconstruction With 6 Toe Transfers. *Hand (N.Y.).* 2020;15(4):465-71.
8. Wei FC, Lutz BS, Cheng SL, Chuang DC. Reconstruction of bilateral metacarpal hands with multiple-toe transplantations. *Plast Reconstr Surg.* 1999;104(6):1698-704.

9. Wang L, Tian G, Wang M, Yang G. Analysis of the morphologic differences of the second toe and digits of the hand, and evaluation of potential surgical intervention to minimize the differences using computer-aided design technology. *Plast Reconstr Surg*. 2014;134(6):902e-12e.
10. Zhang W, Liu L, Lu Y, Liu Y, Zhuang Y, Chen C. Reconstruction of Thumb Defects using the Second Dorsal Metacarpal Artery Flap with Two Pivot Points. *Plast Reconstr Surg*. 2023.
11. Roger de Ona I, Garcia Villanueva A, Studer de Oya A. An Alternative Thumb Reconstruction by Double Microsurgical Transfer From the Great and Second Toe for a Carpometacarpal Amputation. *J Hand Surg Am*. 2018;43(10):955 e1- e9.
12. NF AL, Lin YT, Wei FC. Metacarpal-Like and Metacarpal Hand. *Hand Clin*. 2016;32(4):549-54.
13. Giot JP, Paek LS, Mercier-Couture G, et al. Free Transfer of a Paralyzed Contralateral Little Finger for Total Thumb Reconstruction in an Electrical Burn Patient: A Case Report and Literature Review. *J Burn Care Res*. 2016;37(6):e595-e600.
14. Lutz BS, Wei FC. Basic principles on toe-to-hand transplantation. *Chang Gung Med J*. 2002;25(9):568-76.
15. Tchanque-Fossuo CN, Wishy AM, West KIM, Dawson DL, Dahle SE, Carson JG. Reclaiming Autologous Amputated Tissue for Limb Salvage of a Diabetic Foot Burn with Underlying Critical Limb Ischemia. *Adv Skin Wound Care*. 2018;31(1):596-600.
16. Soucacos PN. Indications and selection for digital amputation and replantation. *J Hand Surg Br*. 2001;26(6):572-81.
17. Gaspar MP, Wilbur DM, Stern PJ, Culp RW. Modified Long Toe Extensor Tendon Harvest for Use as Intercalary Graft in Upper Extremity Reconstruction. *J Hand Surg Am*. 2017;42(3):e209-e13.
18. Lin CH, Hu TL, Lin CH. Split second- and third-toe transplantation in mutilating-hand-injury reconstruction. *Ann Plast Surg*. 2008;60(3):267-71.
19. Tsai TM, D'Agostino L, Fang YS, Tien H. Compound flap from the great toe and vascularized joints from the second toe for posttraumatic thumb reconstruction at the level of the proximal metacarpal bone. *Microsurgery*. 2009;29(3):178-83.
20. Erhard L, Medina J, Zabo S, Pajardi G, Foucher G. [Secondary treatment of digital mutilations: reconstruction or amputation]. *Ann Chir Plast Esthet*. 2002;47(1):47-56.
21. Low S, Spies CK, Erne HC. Long-term preservation of metacarpophalangeal joint function in traumatic defects by metatarsophalangeal osteochondral transplantation. *Arch Orthop Trauma Surg*. 2023;143(2):1109-15.
22. Wei FC, el-Gammal TA, Chen HC, Chuang DC, Chiang YC, Chen SH. Toe-to-hand transfer for traumatic digital amputations in children and adolescents. *Plast Reconstr Surg*. 1997;100(3):605-9.
23. Nakarmi KK. On-top Plasty for Reconstruction of Thumb Using Index Finger. *J Nepal Health Res Counc*. 2019;16(41):467-9.
24. Buncke HJ, Jr, Buncke CM, Schulz WP. Immediate Nicoladoni procedure in the Rhesus monkey, or hallux-to-hand transplantation, utilising microminiature vascular anastomoses. *Br J Plast Surg*. 1966;19(4):332-7.
25. Cobbett JR. Free digital transfer. Report of a case of transfer of a great toe to replace an amputated thumb. *J Bone Joint Surg Br*. 1969;51(4):677-9.
26. Buncke HJ. Toe digital transfer. *Clin Plast Surg*. 1976;3(1):49-57.
27. Gu YD, Zhang GM, Cheng DS, Yan JG, Chen XM. Free toe transfer for thumb and finger reconstruction in 300 cases. *Plast Reconstr Surg*. 1993;91(4):693-700; discussion 1-2.
28. Matsuzaki H, Narisawa H, Miwa H, Toishi S. Predicting functional recovery and return to work after mutilating hand injuries: usefulness of Campbell's Hand Injury Severity Score. *J Hand Surg Am*. 2009;34(5):880-5.
29. Waljee JF, Chung KC. Toe-to-hand transfer: evolving indications and relevant outcomes. *J Hand Surg Am*. 2013;38(7):1431-4.

30. Wei FC, Carver N, Lee YH, Chuang DC, Cheng SL. Sensory recovery and Meissner corpuscle number after toe-to-hand transplantation. *Plast Reconstr Surg.* 2000;105(7):2405-11.
31. Georgescu AV, Battiston B, Matei IR, et al. Emergency toe-to-hand transfer for post-traumatic finger reconstruction: A multicenter case series. *Injury.* 2019;50 Suppl 5:S88-S94.
32. del Pinal F. The indications for toe transfer after "minor" finger injuries. *J Hand Surg Br.* 2004;29(2):120-9.
33. Woo SH, Kim JS, Seul JH. Immediate toe-to-hand transfer in acute hand injuries: overall results, compared with results for elective cases. *Plast Reconstr Surg.* 2004;113(3):882-92.
34. Awada T, Facca S, Liverneaux PA. Successful thumb reconstruction after tumor resection by immediate toe transfer in a 67-year-old patient: case report and literature review. *Chir Main.* 2012;31(2):97-100.
35. Carlsen B, Jones NF. Radical resection of a massive venous malformation of the thumb and immediate reconstruction with a microsurgical toe transfer. *J Hand Surg Am.* 2007;32(10):1587-91.
36. Woo SH, Lee GJ, Kim KC, Ha SH, Kim JS. Immediate partial great toe transfer for the reconstruction of composite defects of the distal thumb. *Plast Reconstr Surg.* 2006;117(6):1906-15.
37. Wei FC, Chen HC, Chuang CC, Chen SH. Microsurgical thumb reconstruction with toe transfer: selection of various techniques. *Plast Reconstr Surg.* 1994;93(2):345-51; discussion 52-7.
38. Yim KK, Wei FC, Lin CH. A comparison between primary and secondary toe-to-hand transplantation. *Plast Reconstr Surg.* 2004;114(1):107-12.
39. Lin CH, Lin YT, Sassu P, Lin CH, Wei FC. Functional assessment of the reconstructed fingertips after free toe pulp transfer. *Plast Reconstr Surg.* 2007;120(5):1315-21.