

FLEPLER: TANIMI, TARİHÇESİ VE SINIFLANDIRILMASI

Erden Erkut ERKOL¹

FLEP KELİMESİNİN TANIMI VE KÖKENİ

“Flep” kelimesinin birkaç anlamı vardır, ancak günlük kullanımdaki en yaygın tanımlar şunlardır: Bir kenar boyunca bir şeye tutturulmuş, ileri geri veya yukarı aşağı hareket ettirilebilen; bir nesneyi veya alanı örtmek, korumak veya süslemek. Bir hava akımı veya hareketi oluşturmak için kullanılan bir malzeme parçası; bir kuşun kanadının, bir balığın yüzgecinin veya hava veya su akımına kapılmış bir cismin ani, hızlı veya kontrolsüz hareketi (1, 2).

Plastik cerrahide “flep” terimi, orijinal tanımından kısmen veya tamamen ayrılıp kan dolaşımı ile yeni bir bölgeye taşınan bir cilt, yağ, kas veya diğer doku parçasını ifade eder (3).

Flep kelimesinin etimolojisi belirsizdir, ancak kökeninin taklit (yansıma) olduğu, bir kuşun kanat çırparken çıkardığı sestten türetildiği düşünülmektedir ve 15. yüzyıldan beri İngilizce’de kullanılmaktadır (3).

FLEP TARİHÇESİ

Flep cerrahisinin kökeni antik zamanlara uzanmaktadır. Sushruta'nın bilimsel eseri, bugün hala burun rekonstrüksiyonu için kullanılan bir teknik olan yanak flebinin burun rekonstrüksiyonunda kullanımının ilk yazılı kaydını sağlar. Bu eser burnu onarmak için 15'ten fazla yöntemden bahseder (4-6).

¹ Op. Dr., Başakşehir Çam ve Sakura Şehir Hastanesi, Plastik, Rekonstrüktif ve Estetik Cerrahi AD., erdenerkuterkol@gmail.com, ORCID İD: 0000-0003-0839-4895

KAYNAKLAR

1. *Oxford english dictionary* Simpson, Ja & Weiner, Esc. 1989;3.
2. Harper D. *Online Etymology Dictionary* 2001.
3. Merriam-Webster I. *Merriam-webster's Medical Dictionary*: Merriam-Webster; 1995.
4. Raju V. Susruta of ancient India. *Indian journal of Ophthalmology*. 2003;51(2):119-22.
5. Susruta S. An English translation of the Sushruta samhita, based on original Sanskrit text: *Рунол Классик*; 1963.
6. Serafin D. Atlas of microsurgical composite tissue transplantation: *WB Saunders Company*; 1995.
7. Keil G. The history of plastic surgery (author's transl). *Laryngologie, Rhinologie, Otologie*. 1978;57(7):581-91.
8. Santoni-Rugiu P, Mazzola R. The Italian contribution to facial plastic surgery: a historical reappraisal. *Facial Plastic Surgery*. 1996;12(04):315-20.
9. Shokri T, Kadakia S, Saman M, Habal MB, Kohlert S, Sokoya M, et al. The paramedian forehead flap for nasal reconstruction: from antiquity to present. *Journal of Craniofacial Surgery*. 2019;30(2):330-3.
10. Noszczyk B. The origins of the concept of muscle flaps. *British Journal of Plastic Surgery*. 1996;49(2):107-10.
11. Tolhurst D. "Skin and bone": The use of muscle flaps to cover exposed bone. *British Journal of Plastic Surgery*. 1980;33(1):99-114.
12. Maxwell GP. Iginio Tansini and the origin of the latissimus dorsi musculocutaneous flap. *Plastic and Reconstructive Surgery*. 1980;65(5):686-92.
13. Cevik J, Hunter-Smith DJ, Rozen WM. Current Advances in breast reconstruction. *Journal of Clinical Medicine*. 2022;11(12):3328.
14. Champaneria MC, Wong WW, Hill ME, Gupta SC. The evolution of breast reconstruction: a historical perspective. *World Journal of Surgery*. 2012;36:730-42.
15. Glicenstein J, editor Louis Ombrédanne (1871–1956), chirurgien pédiatre et plasticien. *Annales de Chirurgie Plastique Esthétique*; 2015: Elsevier.
16. Gillies HD. *Plastic Surgery of the Face: Based on Selected Cases of War Injuries of the Face Including Burns*: Frowde; 1920.
17. Gupta A, Niyazi MS, Tiwari VK. A historical review of the reconstruction of hand injuries. *Archives of Plastic Surgery*. 2017;44(05):472-3.
18. Atasoy E, IOAKIMIDIS E, KASDAN ML, KUTZ JE, KLEINERT HE. Reconstruction of the amputated finger tip with a triangular volar flap: A new surgical procedure. *The journal of bone and joint surgery*. 1970;52(5):921-6.
19. Atasoy E. The reverse cross finger flap. *The Journal of Hand Surgery*. 2016;41(1):122-8.
20. Chao JD, Huang JM, Wiedrich TA. Local hand flaps. *Journal of the American Society for Surgery of the Hand*. 2001;1(1):25-44.
21. MALT RA, MCKHANN CF. The Classic: Replantation of Severed Arms. *Clinical Orthopaedics and Related Research* (1976-2007). 1978;133:3-10.
22. Rah SK, Choi CU, Kim HH, Choi WS, Jeon BC. Experience of microsurgery using dorsalis pedis artery. *Journal of the Korean Orthopaedic Association*. 1981;16(3):731-8.
23. McDowell F. The free, living bone graft. *Plastic and Reconstructive Surgery*. 1975;55(5):612-3.
24. Soutar D, Schecker L, Tanner N, McGregor I. The radial forearm flap: a versatile method for intra-oral reconstruction. *British Journal of Plastic Surgery*. 1983;36(1):1-8.
25. Mathes SJ, Alpert BS. Advances in muscle and musculocutaneous flaps. *Clinics in Plastic Surgery*. 1980;7(1):15-26.
26. Song Y-g, Chen G-z, Song Y-l. The free thigh flap: a new free flap concept based on the septocutaneous artery. *British Journal of Plastic Surgery*. 1984;37(2):149-59.

27. Taylor IG, Pan WR. Angiosomes of the leg: anatomic study and clinical implications. *Plastic and Reconstructive Surgery*. 1998;102(3):599-616.
28. Koshima I, Inagawa K, Urushibara K, Moriguchi T. Paraumbilical perforator flap without deep inferior epigastric vessels. *Plastic and Reconstructive Surgery*. 1998;102(4):1052-7.
29. Dubernard J-M, Owen E, Lefrançois N, Petruzzo P, Martin X, Dawahra M, et al. First human hand transplantation: case report. *Transplant International*. 2000;13:S521-S7.
30. Jones JW, Gruber SA, Barker JH, Breidenbach WC. Successful hand transplantation—one-year follow-up. *New England Journal of Medicine*. 2000;343(7):468-73.
31. Koshima I, Nanba Y, Tsutsui T, Takahashi Y, Urushibara K, Inagawa K, et al. Superficial circumflex iliac artery perforator flap for reconstruction of limb defects. *Plastic and Reconstructive Surgery*. 2004;113(1):233-40.
32. Devauchelle B, Badet L, Lengelé B, Morelon E, Testelin S, Michallet M, et al. First human face allograft: early report. *The Lancet*. 2006;368(9531):203-9.
33. Saint-Cyr M, Wong C, Schaverien M, Mojallal A, Rohrich RJ. The perforasome theory: vascular anatomy and clinical implications. *Plastic and Reconstructive Surgery*. 2009;124(5):1529-44.
34. Amaral S, Kessler SK, Levy TJ, Gaetz W, McAndrew C, Chang B, et al. 18-month outcomes of heterologous bilateral hand transplantation in a child: a case report. *The Lancet Child & Adolescent Health*. 2017;1(1):35-44.
35. Amaral S, Levin LS. Pediatric and congenital hand transplantation. *Current Opinion in Organ Transplantation*. 2017;22(5):477-83.
36. Ramly EP, Alfonso AR, Berman ZP, Diep GK, Bass JL, Catalano LW, et al. The first successful combined full face and bilateral hand transplant. *Plastic and Reconstructive Surgery*. 2022;150(2):414-28.
37. Petruzzo P, Huchon L, Seulin C, Daux E, Gazarian A, Charvin M, et al. 427.9: Total Bilateral Arm Transplantation: Functional Recovery and Psychosocial Outcomes at One Year. *Transplantation*. 2022;106(9S):S498.
38. Masia J, Kosutic D, Cervelli D, Clavero JA, Monill JM, Pons G. In search of the ideal method in perforator mapping: noncontrast magnetic resonance imaging. *Journal of Reconstructive Microsurgery*. 2010;26(1):29-35.
39. Hashimoto I, Abe Y, Ishida S, Kashiwagi K, Mineda K, Yamashita Y, et al. Development of skin flaps for reconstructive surgery: random pattern flap to perforator flap. *The Journal of Medical Investigation*. 2016;63(3.4):159-62.
40. Taylor GI, Corlett RJ, Dhar SC, Ashton MW. The anatomical (angiosome) and clinical territories of cutaneous perforating arteries: development of the concept and designing safe flaps. *Plastic and Reconstructive Surgery*. 2011;127(4):1447-59.
41. Taylor GI, Corlett RJ, Ashton MW. The Functional Angiosome: Clinical Implications of the Anatomical Concept. *Plastic and Reconstructive Surgery*. 2017;140(4):721-33.
42. Geddes CR, Morris SF, Neligan PC. Perforator flaps: evolution, classification, and applications. *Annals of Plastic Surgery*. 2003;50(1):90-9.
43. Çakır B, Akan M, Yıldırım S, Aköz T. Eldeki Defektlerde Ters Akımlı Fleplerin Kullanımı. *Türk Plastik Rekonstrüktif ve Estetik Cerrahi Dergisi*. 2001;9(3).
44. Patel KG, Sykes JM. Concepts in local flap design and classification. *Operative Techniques in Otolaryngology. Head and Neck Surgery*. 2011;22(1):13-23.
45. Parrett BM, Talbot SG, Pribaz JJ, Lee BT. A review of local and regional flaps for distal leg reconstruction. *Journal of Reconstructive Microsurgery*. 2009;25(07):445-55.
46. Dalay C, Yavuz M, Acartürk S, KIVANÇ Ö, Ersal K. Serbest doku transferi ile alt ekstremitte onarımı; ardışık 25 olgunun analizi. *Türk Plastik Rekonstrüktif Ve Estetik Cerrahi Dergisi*. 2015;4(1).

47. Öz B, Akcan A, Emek E, Akyüz M, Sözüer E, Akyıldız H, et al. A comparison of surgical outcome of fasciocutaneous V-Y advancement flap and Limberg transposition flap for recurrent sacrococcygeal pilonidal sinus disease. *Asian Journal of Surgery*. 2017;40(3):197-202.
48. Starkman SJ, Williams CT, Sherris DA. Flap basics I: rotation and transposition flaps. *Facial Plastic Surgery Clinics*. 2017;25(3):313-21.
49. Blake BP, Simonetta CJ, Maher IA. Transposition flaps: Principles and locations. *Dermatologic Surgery*. 2015;41:S255-S64.
50. Webster RC, Davidson TM, Smith RC. The thirty degree transposition flap. *The Laryngoscope*. 1978;88(1):85-94.
51. Menten BB, Leventoglu S, Cihan A, Tatlıcioglu E, Akin M, Oğuz M. Modified Limberg transposition flap for sacrococcygeal pilonidal sinus. *Surgery Today*. 2004;34:419-23.
52. Hasse F, Rademacher C, Bingham K, Löhlein D. The Dufourmentel flap-plasty for treatment of chronic pilonidal sinus. *Der Chirurg; Zeitschrift für Alle Gebiete der Operativen Medizin*. 1998;69(6):663-6.
53. Imafuku K, Hata H, Yamaguchi Y, Inamura Y, Kitamura S, Yanagi T, et al. Modified Dufourmentel flap, easy to design and tailor to the defect. *The Journal of Dermatology*. 2017;44(1):68-70.
54. Tardu, A., Haşlak, A., Özçınar, B., & Başak, F. (2011). Pilonidal sinüsün cerrahi tedavisinde Limberg flep ile Dufourmentel flep yöntemlerinin karşılaştırılması. *Turkish Journal of Surgery*, 27(1), 035-040.
55. Chen YC, Scaglioni MF, Carrillo Jimenez LE, Yang JC, Huang EY, Lin TS. Suprafascial Anterolateral Thigh Flap Harvest: A Better Way to Minimize Donor-Site Morbidity in Head and Neck Reconstruction. *Plastic and Reconstructive Surgery*. 2016;138(3):689-98.
56. Maruccia M, Fallico N, Cigna E, Ciudad P, Nicoli F, Trignano E, et al. Suprafascial versus traditional harvesting technique for free antero lateral thigh flap: A case-control study to assess the best functional and aesthetic result in extremity reconstruction. *Microsurgery*. 2017;37(8):851-7.
57. Cormack G, Lamberty B. A classification of fascio-cutaneous flaps according to their patterns of vascularisation. *British Journal of Plastic Surgery*. 1984;37(1):80-7.
58. Mathes S. Classification of The Vascular Anatomy of Muscles: experimental and clinical correlation 1981. *50 Studies Every Plastic Surgeon Should Know*: CRC Press; 2014. p. 57-62.
59. Hartrampf CR, Schefflan M, Black PW. Breast reconstruction with a transverse abdominal island flap. *Plastic and Reconstructive Surgery*. 1982;69(2):216-25.
60. Kokosis G, Sun Z, Avashia YJ, Adam MA, Levinson H, Erdmann D, et al. V-Y fasciocutaneous flap closure technique is a safe and efficacious alternative to primary closure of the perineal wound following abdominoperineal resection. *The American Journal of Surgery*. 2017;213(2):371-6.
61. Luo S, Raffoul W, Piaget F, Egloff DV. Anterolateral thigh fasciocutaneous flap in the difficult perineogenital reconstruction. *Plastic and Reconstructive Surgery*. 2000;105(1):171-3.
62. Gill PS, Hunt JP, Guerra AB, Dellacroce FJ, Sullivan SK, Boraski J, et al. A 10-year retrospective review of 758 DIEP flaps for breast reconstruction. *Plastic and Reconstructive Surgery*. 2004;113(4):1153-60.
63. Hallock GG. The complete classification of flaps. *Microsurgery*. 2004;24(3):157-61.
64. Hallock GG, Ahmadzadeh R, Morris S. Classification of Flaps. *Flaps and Reconstructive Surgery*. 2016;1.
65. Bulstrode N, Kotronakis I, Lotz N, Baldwin M. The use of the siamese combined free flap to reconstruct challenging defects: Twin and triplet variants. *British Journal of Plastic Surgery*. 2005;58(4):449-54.
66. Hallock GG. Further clarification of the nomenclature for compound flaps. *Plastic and Reconstructive Surgery*. 2006;117(7):151e-60e.
67. Horta R, Valença-Filipe R, Monteiro D, Silva A, Amarante JM. Chimeric flaps and "their variations": different options for immediate reconstruction of massive facial defects. *Facial Plastic Surgery*. 2014;30(05):578-80.

68. Bullocks J, Naik B, Lee E, Hollier Jr L. Flow-through flaps: A review of current knowledge and a novel classification system. *Microsurgery: Official Journal of the International Microsurgical Society and the European Federation of Societies for Microsurgery*. 2006;26(6):439-49.
69. Semple JL. Retrograde microvascular augmentation (turbocharging) of a single-pedicle TRAM flap through a deep inferior epigastric arterial and venous loop. *Plastic and Reconstructive Surgery*. 1994;93(1):109-17.
70. Tan O, Atik B, Bekerecioglu M. Supercharged reverse-flow sural flap: A new modification increasing the reliability of the flap. *Microsurgery: Official Journal of the International Microsurgical Society and the European Federation of Societies for Microsurgery*. 2005;25(1):36-43.
71. Pribaz JJ, Fine NA. Prefabricated and prelaminated flaps for head and neck reconstruction. *Clinics in Plastic Surgery*. 2001;28(2):261-72.
72. Liu X, Li S, Li Y. Prefabricated cervical flap for facial reconstruction. *Plastic and Reconstructive Surgery*. 2008;121(5):342e-4e.
73. Pribaz JJ, Fine NA. Prefabricated and prelaminated flaps for head and neck reconstruction. *Clinics in Plastic Surgery*. 2001;28(2):261-72, vii.
74. Kim RY, Bae SS, Feinberg SE. Soft Tissue Engineering. *Oral and Maxillofacial Surgery Clinics of North America*. 2017;29(1):89-104.
75. Suszynski T. Individualized Bioengineered Flap Design and the Importance of Oxygenation. *Plastic and Reconstructive Surgery*. 2021;147(4):723e-4e.