

BÖLÜM 1

1.1. PERİFERİK DAMAR CERRAHİSİ GELİŞİM SÜREÇLERİ

Sameh ALAGHA¹

Giriş

Damar cerrahisi, vasküler sistem hastalıklarının medikal tedavi, minimal invazif kateter girişimleri ve cerrahi rekonstrüksiyon prosedürleri kapsayan bir uzmanlık alanıdır. Modern tarihte alanın ilk liderleri arasında, erken cerrahi teknikler geliştirmesiyle tanınan Rus cerrah Nikola Korotkov yer almaktadır (1), minimal invazif anjioplastiyi 1964'te icat etmekle tanınan Amerikalı girişimsel radyolog Charles Theodor Dotter ve alanın bir uzmanlık alanı olarak tanınmasına yardımcı olan Avustralyalı Robert Paton vardır (2). Edwin Wylie, damar cerrahisinde ileri eğitim geliştiren ve 1970'lerde Amerika Birleşik Devletlerinde bir uzmanlık alanı olarak tanınmasını sağlayan ilk öncülerden biriydi (3).

Bazı kaynaklar Guy de Chauliac veya Ambroise Paré cerrahinin babaları olarak adlandırılması gerektiğini iddia etse de, John Hunter modern damar cerrahinin öncüsüdür .

John Hunter pek çok şeyle hatırlanır, ancak özellikle, bir geyiğin boynundaki ana arterleri kestikten sonra boynuzlarını besleyen damarlarda tanımladığı kollateral arteriyel dolaşımın dinamikleri ve verimliliği üzerine yaptığı çalışmalarla hatırlanır. John, bir popliteal anevrizmanın proksimalinde bulunan ve

¹ Dr. Öğr. Üyesi, Yozgat Bozok Üniversitesi Hastanesi/Kalp ve Damar Cerrahisi AD., samehalagha@gmail.com

edilmiştir. Benzer şekilde, 1966'da Mahoney ve Whelan (71), kasıkta bulunan bir enfeksiyonu önlemek için obturatör bypass'ı uygulamıştır. Vetto 1962'de femorofemoral bypass gibi biraz farklı bir anatomik varyant tanıtmıştır (72).

Aort greftinin değiştirilmesi için önemli endikasyonlardan biri aortoente-rik fistül gelişimidir. Elliott ve arkadaşları, bu sorunun anlaşılmasına yönelik ilk önemli makalelerden birine katkıda bulunmuşlardır (73).

Türkiye'de Damar Cerrahisinin Gelişimi

Türkiye'de damar cerrahisinin gelişimi oldukça yavaş gerçekleşmiştir. Bu süreci dört evrede ele almak mümkündür; 1960 öncesi, damar cerrahisi genel cerrahiye bağlıydı, uygulamalar genellikle travmatik lezyonlara yönelik olup tıkaçıcı arter hastalıklarında nadiren ve bir kısmı bugün terkedilmiş olan pal-yatif girişimler uygulanmaktaydı. Bu dönemde rekonstruktif girişimler yaygın değildi. 1960-1975 yıllarını kapsayan evrede damar cerrahisiyle ilgilenen grupların, ünitelerin, kliniklerin oluştuğu görülmektedir. Bu dönemde rekonstruktif girişimler rutin olarak uygulanmaktaydı. Cerrahi girişimlere ait komplikasyonların önlenmesi, tedavileri ve uzun dönem sonuçların takibi önem kazanmış, fizyolojik tanı yöntemleri gündeme gelmiştir. 1975-1990 yılları arasında ülkemizde damar cerrahisinin kurumsallaştığı dönemdir. Fizyolojik ve noninvazif tanı yöntemleri yaygınlaşmıştır. Bu dönemde rekonstruktif girişim olanaklarının yokluğu ile ekstraanatomik bypass yöntemlerinin yaygınlaştığı görülmektedir. 1990'lı yıllardan itibaren minimal invazif uygulamaların yanında endovasküler girişimlerin ön plana çıkıp girişimsel radyolojinin giderek cerrahiye alternatif bir yöntem haline geldiği dönemdir. Bu dönemde torakal aort cerrahisine yönelik uygulamalara duyulan ilgideki artış gözlenmiştir. (74)

Kaynaklar

1. Samokhvalov IM, Reva VA, Fomin NF, Rasmussen TE. Contributions of the surgeon Nikolai Korotkov (1874-1920) to the management of extremity vascular injury. *Journal of Trauma and Acute Care Surgery*. 2016;80(2): 341-346. <https://doi.org/10.1097/TA.0000000000000919>.
2. Kostić J, Beleslin B, Nedeljković M, Ostojić M. Pioneers of invasive cardiovascular medicine - Charles Theodore dotter and colleagues: Short historical review. *Srpski Arhiv za Celokupno Lekarstvo*. 2014;142(1-2): 131-137. <https://doi.org/10.2298/SARH1402131K>.
3. Blaisdell FW, Stoney RJ. Vascular Surgeon Edwin J. Wylie, MD (1918-1982), Pioneer and Visionary. *Vascular and Endovascular Surgery*. 2001;35(3): 213-219. <https://doi.org/10.1177/153857440103500309>.

4. Wiley F. Barker. A History of Vascular Surgery. In: Moore WS, Lawrence PF, Oderich GS (eds.) *Moore's vascular and endovascular surgery: a comprehensive review*. 9. edition. Los Angeles: Elsevier USA; 2018. p. 1–16.
5. Rich NM, Leppaniemi A. Vascular trauma: A 40-year experience with extremity vascular emphasis. *Scandinavian Journal of Surgery*. 2002;91(1): 109–126. <https://doi.org/10.1177/145749690209100117>.
6. Barker WF. A Century's Worth of Arterial Sutures. *Annals of Vascular Surgery*. 1988;2(1): 85–91. [https://doi.org/10.1016/S0890-5096\(06\)60785-1](https://doi.org/10.1016/S0890-5096(06)60785-1).
7. Laios K, Bontinis V, Bontinis A, Mavrommatis E, Lytsikas-Sarlis P, Tsoucalas G, et al. Mathieu Jaboulay (1860-1913) and His Innovations in Vascular and General Surgery. *Surgical Innovation*. 2020;27(1): 120–123. <https://doi.org/10.1177/1553350619875926>.
8. Levin SM. Alexis Carrel's historic leap of faith. *Journal of Vascular Surgery*. 2015;61(3): 832–833. <https://doi.org/10.1016/j.jvs.2013.09.012>.
9. Brock RC. Astley Cooper and carotid artery ligation. *Guy's Hospital reports*. 1968;117(3): 219–224.
10. Power D. The palliative treatment of aneurysm by 'wiring' with Colt's apparatus. *British Journal of Surgery*. 1921;9(33): 27–36. <https://doi.org/10.1002/bjs.1800093305>.
11. Matas R. Ligation of the Abdominal Aorta: Report of the Ultimate Result, One Year, Five Months and Nine Days After Ligation of the Abdominal Aorta for Aneurism At the Bifurcation. *Annals of surgery*. 1925;81(2): 457–464. <https://doi.org/10.1097/00000658-192502010-00004>.
12. Reid MR. Aneurysms in the Johns Hopkins Hospital. *Archives of Surgery*. 1926;12(1): 1. <https://doi.org/10.1001/archsurg.1926.01130010005001>.
13. De takats G, Reynolds JT. The surgical treatment of aneurysms of the abdominal aorta. *Surgery*. 1947;21(4): 443–454. <https://doi.org/10.1097/00000658-194011000-00003>.
14. Crafoord C, Nylin G. Congenital Coarctation of the Aorta and Its Surgical Treatment. *Journal of Thoracic Surgery*. 1945;14(5): 347–361. [https://doi.org/10.1016/s0096-5588\(20\)31801-8](https://doi.org/10.1016/s0096-5588(20)31801-8).
15. Tuffier M: De l'intubation dans le plaies de grosses artères. *Bull Acad Med* 1915; 74: pp. 455-460.
16. Elkin D. Aneurysm of the Abdominal Aorta: Treatment By Ligation. *Annals of Surgery*. 1940;112(5): 895–908. <https://doi.org/10.1097/00000658-194011000-00004>.
17. Hufnagel CA. Permanent intubation of the thoracic aorta. *Archives of surgery*. 1947;54(4): 382–389. [https://doi.org/10.1016/0002-8703\(47\)90384-0](https://doi.org/10.1016/0002-8703(47)90384-0).
18. Hufnagel CA: Preserved homologous arterial transplants. *Bull Am Coll Surg* 1947; 32: pp. 231.
19. Swan H, Maaske C, Johnson M, Grover R. Arterial homografts. II. Resection of thoracic aortic aneurysm using a stored human arterial transplant. *A.M.A. archives of surgery*. 1950;61(4): 732–737. <https://doi.org/10.1001/archsurg.1950.01250020738013>.
20. Edwards WS, Tapp JS: Chemically treated nylon tubes as arterial grafts. *Surgery* 1955; 38: pp. 61-76.
21. Girvin GW, Wilhem MC, Alvin Merendino K. The use of teflon fabric as arterial grafts an experimental study in dogs. *The American Journal of Surgery*. 1956;92(2): 240–247. [https://doi.org/10.1016/S0002-9610\(56\)80066-4](https://doi.org/10.1016/S0002-9610(56)80066-4).
22. Szilagyi DE, France LC, Smith RF, Whitcomb JG. The Clinical Use of an Elastic Dacron Prosthesis. *A.M.A Archives of Surgery*. 1958;77(4): 538–551. <https://doi.org/10.1001/archsurg.1958.04370010070006>.

23. Julian OC, Deterling RA, Dye WS, Bhonslay S, Grove WJ, Belio ML, et al. Dacron Tube and Bifurcation Arterial Prostheses Produced to Specification: II. Continued Clinical Use and the Addition of Microcrimping. *A.M.A Archives of Surgery*. 1959;78(2): 260–270. <https://doi.org/10.1001/archsurg.1959.04320020082012>.
24. Wesolowski SA, Fries CC, Karlson KE, Bakey M De, Sawyer PN. Porosity: primary determinant of ultimate fate of synthetic vascular grafts. *Surgery*. 1961;50(1): 91–96. <https://doi.org/10.1097/00006534-196201000-00083>.
25. Bakey ME, Cooley DA, Crawford ES, Morris GC. Clinical Application of a New Flexible Knitted Dacron Arterial Substitute. *A.M.A Archives of Surgery*. 1958;77(5): 713–724. <https://doi.org/10.1001/archsurg.1958.01290040061008>.
26. Sauvage LR, Berger K, Wood SJ, Nakagawa Y, Mansfield PB. An external velour surface for porous arterial prostheses. *Surgery*. 1971;70(6): 940–953.
27. Soyer T, Lempinen M, Cooper P, Norton L, Eiseman B. A new venous prosthesis. *Surgery*. 1972;72(6): 864–872. <https://doi.org/10.5555/uri:pii:0039606072901882>.
28. ESTES JE. Abdominal aortic aneurysm; a study of one hundred and two cases. *Circulation*. 1950;2(2): 258–264. <https://doi.org/10.1161/01.CIR.2.2.258>.
29. Alexander J, Byron FX. Aortectomy for thoracic aneurysm. *Journal of the American Medical Association*. 1944;126(18): 1139–1145. <https://doi.org/10.1001/jama.1944.02850530017005>.
30. Oudot J: La greffe vasculaire dans les thromboses du carrefour aortique. *Presse Med* 1951; 59: pp. 234–236.
31. Dubost C, Allary M, Oeconomos N. Resection of an aneurysm of the abdominal aorta: Reestablishment of the Continuity by a Preserved Human Arterial Graft, with Result After Five Months. *A.M.A Archives of Surgery*. 1952;64(3): 405–408. <https://doi.org/10.1001/archsurg.1952.01260010419018>.
32. Ellis FH, Helden RA, Hikes EA. Aneurysm of the Abdominal Aorta Involving the Right Renal Artery. *Annals of Surgery*. 1955;142(6): 992–996. <https://doi.org/10.1097/0000658-195512000-00012>.
33. DeBakey ME, Creech O, Morris GC. Aneurysm of thoracoabdominal aorta involving the celiac, superior mesenteric, and renal arteries; report of four cases treated by resection and homograft replacement. *Annals of surgery*. 1956;144(4): 549–573. <https://doi.org/10.1097/0000658-195610000-00004>.
34. Stoney RJ, Wylie EJ. Surgical management of arterial lesions of the thoracoabdominal aorta. *American Journal of Surgery*. 1973;126(2): 157–164. [https://doi.org/10.1016/S0002-9610\(73\)80147-3](https://doi.org/10.1016/S0002-9610(73)80147-3).
35. Crawford ES. Thoraco-abdominal and abdominal aortic aneurysms involving renal, superior mesenteric, celiac arteries. *Annals of surgery*. 1974;179(5): 763–772. <https://doi.org/10.1097/0000658-197405000-00032>.
36. Dotter CT, Buschmann RW, McKinney MK, Rosch J. Transluminal expandable nitinol coil stent grafting: Preliminary report. *Radiology*. 1983;147(1): 259–260. <https://doi.org/10.1148/radiology.147.1.6828741>.
37. Edmunds LH, Darling RC, Linton RR. Surgical management of popliteal aneurysms. *Circulation*. 1965;32(4): 517–523. <https://doi.org/10.1161/01.CIR.32.4.517>.
38. Leriche R, Morel A. The Syndrome of Thrombotic Obliteration of the Aortic Bifurcation. *Annals of surgery*. 1948;127(2): 193–206. <https://doi.org/10.1097/0000658-194802000-00001>.
39. Murphy JB. Removal of an embolus from the common iliac artery, with re-establishment of circulation in the femoral. *Journal of the American Medical Association*. 1909;LII(21): 1661–1663. <https://doi.org/10.1001/jama.1909.25420470027001g>.

40. Murray GDW. Heparin in thrombosis and embolism. *British Journal of Surgery*. 1940;27(107): 567–598. <https://doi.org/10.1002/bjs.18002710718>.
41. Linton RR. Some practical considerations in the surgery of blood vessel grafts. *Surgery*. 1955;38(5): 817–834. <https://doi.org/10.5555/uri:pii:0039606055901185>.
42. Dotter CT, Judkins MP. Percutaneous Transluminal Treatment of Arteriosclerotic Obstruction. *Radiology*. 1965;84: 631–643. <https://doi.org/10.1148/84.4.631>.
43. Grüntzig A, Hopff H. Perkutane Rekanalisation chronischer arterieller Verschlüsse mit einem neuen Dilatationskatheter: Modifikation der Dotter-Technik. *Deutsche Medizinische Wochenschrift*. 1974;99(49): 2502–2505. <https://doi.org/10.1055/s-0028-1108161>.
44. Greenstone SM, Shore JM, Heringman EC, Massell TB. Arterial Endoscopy (Arterioscopy). *Archives of Surgery*. 1966;93(5): 811–812. <https://doi.org/10.1001/archsurg.1966.01330050115016>.
45. Mintz GS, Popma JJ, Pichard AD, Kent KM, Satter LF, Wong SC, et al. Arterial Remodeling after Coronary Angioplasty: A Serial Intravascular Ultrasound Study. *Circulation*. 1996;94(1): 35–43. <https://doi.org/10.1161/01.CIR.94.1.35>.
46. Kensey KR, Nash JE, Abrahams C, Zarins CK. Recanalization of obstructed arteries with a flexible, rotating tip catheter. *Radiology*. 1987;165(2): 387–389. <https://doi.org/10.1148/radiology.165.2.3659363>.
47. Bowers TR, Stewart RE, O'Neill WW, Reddy VM, Safian RD. Effect of rotablator atherectomy and adjunctive balloon angioplasty on coronary blood flow. *Circulation*. 1997;95(5): 1157–1164. <https://doi.org/10.1161/01.CIR.95.5.1157>.
48. Parodi JC, Palmaz JC, Barone HD. Transfemoral Intraluminal Graft Implantation for Abdominal Aortic Aneurysms. *Annals of Vascular Surgery*. 1991;5(6): 491–499. <https://doi.org/10.1007/BF02015271>.
49. Buerger L. Thrombo angiitis obliterans: a study of the vascular lesions leading to presenile spontaneous gangrene. *American Journal of the Medical Sciences*. 1973;266(4): 278–291. <https://doi.org/10.1097/00000441-197310000-00006>.
50. Fogarty TJ, Cranley JJ, Krause RJ, Strasser ES, Hafner CD. A method for extraction of arterial emboli and thrombi. *Surgery, gynecology & obstetrics*. 1963;116: 241–244. https://www.unboundmedicine.com/medline/citation/13945714/A_method_for_extraction_of_arterial_emboli_and_thrombi_
51. Mitchell SW, Morehouse GR, Keen WW. Gunshot wounds and other injuries of nerves. 1864. *Clinical orthopaedics and related research*. 2007;458: 35–39. <https://doi.org/10.1097/BLO.0b013e31803df02c>.
52. Savory WS. Case of a Young Woman in Whom the Main Arteries of Both Upper Extremities and of the Left Side of the Neck Were Throughout Completely Obliterated. *Journal of the Royal Society of Medicine*. 1856;MCT-39(1): 205–219. <https://doi.org/10.1177/095952875603900114>.
53. Hunt BJR. Hunt: The role of the carotid arteries. *American Journal of the Medical Sciences*. 2013;346(6): 504–509. <https://doi.org/10.1097/MAJ.0b013e31829aaad0>.
54. Fisher M. Occlusion of the internal carotid artery. *Archives of Neurology And Psychiatry*. 1951;65(3): 346–377. <https://doi.org/10.1001/archneurpsyc.1951.02320030083009>.
55. Carrea R, Mullins M, Murphy G. Surgical treatment of spontaneous thrombosis of the internal carotid artery in the neck. Carotid-carotideal anastomosis: Report of a case. *Acta Neurol Latinoam* 1955; 1: pp. 71-78.
56. DeBakey ME. Successful Carotid Endarterectomy For Cerebrovascular Insufficiency: Nineteen-Year Follow-up. *JAMA: The Journal of the American Medical Association*. 1975;233(10): 1083–1085. <https://doi.org/10.1001/jama.1975.03260100053020>.

57. Dixon S, Pais SO, Raviola C, Gomes A, Machleder HI, Baker JD, et al. Natural History of Nonstenotic, Asymptomatic Ulcerative Lesions of the Carotid Artery: A Further Analysis. *Archives of Surgery*. 1982;117(11): 1493–1498. <https://doi.org/10.1001/archsurg.1982.01380350079011>.
58. Berguer R, Sieggreen MY, Lazo A, Hodakowski GT. The silent brain infarct in carotid surgery. *Journal of Vascular Surgery*. 1986;3(3): 442–447. <https://doi.org/10.1067/mva.1986.avs0030442>.
59. Yasargil MG, Krayenbuhl HA, Jacobson JH: II: Microneurosurgical arterial reconstruction. *Surgery* 1970; 67: pp. 221–223.
60. EC/IC Bypass Study Group. Failure of Extracranial–Intracranial Arterial Bypass to Reduce the Risk of Ischemic Stroke. *New England Journal of Medicine*. 1985;313(19): 1191–1200. <https://doi.org/10.1056/nejm198511073131904>.
61. Longmire WP, Cannon JA, Kattus AA. Direct-Vision Coronary Endarterectomy for Angina Pectoris. *New England Journal of Medicine*. 1958;259(21): 993–999. <https://doi.org/10.1056/nejm195811202592101>.
62. Favalaro RG. Saphenous Vein Autograft Replacement of Severe Segmental Coronary Artery Occlusion: Operative Technique. *Annals of Thoracic Surgery*. 1968;5(4): 334–339. [https://doi.org/10.1016/S0003-4975\(10\)66351-5](https://doi.org/10.1016/S0003-4975(10)66351-5).
63. Johnson WD, Flemma RJ, Lepley D, Ellison EH. Extended treatment of severe coronary artery disease: a total surgical approach. *Annals of surgery*. 1969;170(3): 460–470. <https://doi.org/10.1097/00000658-196909010-00014>.
64. Goldblatt H. Studies on experimental hypertension: III. The production of persistent hypertension in monkeys (macaque) by renal ischemia. *Journal of Experimental Medicine*. 1937;65(5): 671–676. <https://doi.org/10.1084/jem.65.5.671>.
65. Freeman NE, Leeds FH, Elliott WG, Roland SI. Thromboendarterectomy for hypertension due to renal artery occlusion. *Journal of the American Medical Association*. 1954;156(11): 1077–1079. <https://doi.org/10.1001/jama.1954.02950110039012>.
66. Dunphy JE. Abdominal Pain of Vascular Origin. *The American Journal of the Medical Sciences*. 1936;192(1): 109–113. <https://doi.org/10.1097/00000441-193607000-00014>.
67. Klass AA. Embolectomy in acute mesenteric occlusion. *Annals of surgery*. 1951;134(5): 913–917. <https://doi.org/10.1097/00000658-195111000-00016>.
68. Shaw RS, Rutledge RH. Superior-Mesenteric-Artery Embolectomy in the Treatment of Massive Mesenteric Infarction. *New England Journal of Medicine*. 1957;257(13): 595–598. <https://doi.org/10.1056/nejm195709262571303>.
69. Blaisdell FW, DeMattei GA, Gauder PJ. Extraperitoneal thoracic aorta to femoral bypass graft as replacement for an infected aortic bifurcation prosthesis. *The American Journal of Surgery*. 1961;102(4): 583–585. [https://doi.org/10.1016/0002-9610\(61\)90568-2](https://doi.org/10.1016/0002-9610(61)90568-2).
70. Blaisdell FW, Hall AD: Axillary-femoral artery bypass for lower extremity ischemia. *Surgery* 1963; 54: pp. 563–568.
71. Mahoney WD, Whelan TJ. Use of obturator foramen in iliofemoral artery grafting: case reports. *Annals of surgery*. 1966;163(2): 215–220. <https://doi.org/10.1097/00000658-196602000-00009>.
72. Vetto RM: The treatment of unilateral iliac artery obstruction with a transabdominal subcutaneous femorofemoral graft. *Surgery* 1962; 52: pp. 342–345.
73. Elliott JP, Smith RE, Szilagyi DE. Aortoenteric and Paraprostatic-Enteric Fistulas: Problems of Diagnosis and Management. *Archives of Surgery*. 1974;108(4): 479–490. <https://doi.org/10.1001/archsurg.1974.01350280083014>.
74. Tokcan A, Yalınız H. Ülkemizdeki Damar Cerrahisinin Tarihi. In: Duran Enver (ed.) *kalp ve damar cerrahisi*. 1.baskı. Edirne: Çapa Tıp Kitabevi; 2004. p. 21.