

## 2.2.b. Alt Ekstremite Arter

### 2.2.b.1. Alt Ekstremite Arter Patolojilerinin Cerrahi Tedavisi (Femoropopliteal Bölge)

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#### Giriş

İnfrainguinal bölgede tıkalıcı arter hastalıklarına bağlı ekstremite iskemisi dünya çapında hastaların karşılaştığı en yaygın hastalıklardan biridir. Hastaların komorbiditeleri ve çoğunun aterosklerotik etiyolojisinin bulunması; uzuv kaybı, serebrovasküler ve kardiyovasküler komplikasyon şansının artmasına neden olur. Tıkalıcı arter hastalıklarına bağlı ekstremite iskemisinin ayırt edilmesi hayatı önen taşıyan 2 geniş klinik alt kategorisi vardır:

- I. Akut arter tıkanıklığına bağlı ekstremite iskemisi
- II. Kronik tıkalıcı periferik arteriyel hastalığa bağlı ekstremite iskemisi

#### I. Akut Arter Tıkanıklığı

Akut arter tıkanıklığı, ekstremiteye giden kan akımının aniden kesilmesi sonucu akut ekstremite iskemisine ve klinik sendromlara yol açan bir hastalık tablosudur. Alt ekstremitenin akut iskemisi; iskemi süresini mümkün olduğunda kısaltmak ve amputasyon ihtiyacını önlemek için acil bir ortamda hemen tanınmayı ve acil ekstremite revaskülarizasyonunu zorunlu kıلان cerrahi bir acil durumudur. Ekstremite arterlerinin tıkalıcı hastalıklarının çağdaş tedavisindeki büyük ilerlemelere rağmen, alt ekstremitenin akut iskemisi halen has-

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(48). Medikal, endovasküler ve cerrahi tedavilerdeki ilerlemeler sayesinde amputasyon oranlarında azalma görülmektedir. Buna rağmen kritik bacak iskemiği olan PAH hastalarında bu oran %8.4 iken olmayanlarda %1.2'dir (49).

## Sonuç

Alt ekstremitede iskemiye neden olan femoro-popliteal bölge arter tikanıklıkları, dünya çapında hastalarda en yaygın görülen arter tikanıklık bölgelerinden biridir. Bu bölgenin akut veya kronik tikanıklıkları uzuv kaybına, sosyo-ekonomik problemlere ve ölüme neden olabilmektedir. Bu nedenle hastalığın erken tanı ve tedavisi önem arz etmektedir. Tedavide cerrahi, endovasküler ve kombin tedavi seçenekleri bulunmaktadır. Hangi hastaya hangi tedavi seçenekinin uygulanacağına; hasta yaşı, komorbidite durumu, tikanıklığın yeri ve seviyesi gibi faktörler göz önünde bulundurularak karar verilmektedir. Femoro-popliteal bölge arter tikanıklıklarının cerrahi tedavisi modern cerrahi teknik ve greft teknolojisindeki son gelişmeler sayesinde günümüzde halen güvenle uygulanmaya devam etmektedir.

## Kaynaklar

1. Erentuğ V, Mansuroğlu D, Ulusoy Bozbuğa N, ve ark. Akut arteriyel tikanıklarda cerrahi tedavi. Turkish J Thorac Cardiovasc Surg. 2003;11:236-9.
2. Van DH, Boesmans E, Defraigne JO. L'ischémie aiguë des membres inférieurs (Acute limb ischemia). Rev Med Liege. 2018;73(5-6):304-311.
3. Haimovici's Vascular Surgery, Sixth Edition. Edited by Enrico Ascher, Frank J. Veith, Peter Gloviczki. © 2012 Blackwell Publishing Ltd. Published 2012 by Blackwell Publishing Ltd. CHAPTER 55, Acute Arterial Occlusion of the Lower Extremities, p703-709.
4. Abbott WM, Maloney RD, McCabe CC. Arterial embolism: a 44 year perspective. Am J Surg. 1982;143:460.
5. Blecha MJ. Critical limb ischemia. Surg Clin North Am. 2013 Aug;93(4):789-812, viii.
6. Yetkin U, Gürbüz A. Akut Arter Tikanmalarına Genel Bakış. Van Tip Dergisi. 2002;9;1:38-46.
7. Tsujimura T, Takahara M, Iida O, Kohsaka S, Soga Y, Fujihara M, et al. In-hospital outcomes after endovascular therapy for acute limb ischemia: A report from a Japanese Nationwide Registry (J-EVT Registry). J Atheroscler Thromb 2020. (Online ahead of print)
8. Suggested standards for reports dealing with lower extremity ischemia. Prepared by the Ad Hoc Committee on Reporting Standards, Society for Vascular Surgery/North American Chapter, International Society for Cardiovascular Surgery. J Vasc Surg. 1986;4:80-94.
9. Rutherford RB, Baker JD, Ernst C, et al. Recommended standards for reports dealing with lower extremity ischemia: revised version. J Vasc Surg. 1997;26(3):517-38.
10. Gerhard-Herman MD, Gornik HL, Barrett C, et al. 2016 AHA/ACC Guideline on the Management of Patients With Lower Extremity Peripheral Artery Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Circulation. 2017;135:726-79.

11. Fogarty TJ, Cranley JJ, Krause RJ, et al. A method for extraction of arterial emboli and thrombi. *Surg Gynecol Obstet.* 1963;116:241-244.
12. Costantini V, Lenti M. Treatment of acute occlusion of peripheral arteries. *Thromb Res.* 2002;106:285-294.
13. Bozkurt AK. Akut bacak iskemisi. Şu kitapta: Bozkurt AK, editor. *Periferik Arter ve Ven Hastalıkları-Uluslararası Tedavi Kılavuzu.* 1inci baskı. İstanbul: Bayçınar Tıbbi Yayıncılık; 2016. p. 44-61.
14. Soares TR, Amorim P, Manuel V, et al. A single-center experience in the eversion femoral endarterectomy. *Vascular.* 2020;28(4):348-354.
15. Hill B, Fogarty TJ. The use of the Fogarty catheter in 1998. *Cardiovascular Surgery.* 1999;7:3,273-278.
16. Heider P, Hofmann M, Maurer PC, et al. Semi-closed femoropopliteal thromboendarterectomy: a prospective study. *Eur J Vasc Endovasc Surg.* 1999;18(1):43-47.
17. Moll FL, Ho GH. Endarterectomy of the superficial femoral artery. *Surg Clin North Am.* 1999;79(3):611-622.
18. Timothy RS. Vascular Medicine. Şu kitapta: Mary P. Harward, Editör. *Medical Secrets.* 5inci baskı. Mosby;2012. p.109-21.
19. DeBakey ME. Regarding "A randomized study on eversion versus standard carotid endarterectomy: study design and preliminary results: the Everest trial". *J Vasc Surg.* 1998;28(4):753.
20. Oertli D, Wigger J, Landmann J, et al. Long-term results after semiclosed thrombendarterectomy for aortoiliac occlusive disease. *Eur J Vasc Endovasc Surg.* 1996;11:432-436.
21. Sigvant B, Wiberg-Hedman K, Bergqvist D, et al. A population-based study of peripheral arterial disease prevalence with special focus on critical limb ischemia and sex differences. *J Vasc Surg.* 2007;45(6):1185-1191.
22. Cacoub P, Cambou JP, Kownator S, et al. Prevalence of peripheral arterial disease in high-risk patients using ankle-brachial index in general practice: a cross-sectional study. *Int J Clin Pract.* 2009;63(1):63-70.
23. Jaff MR, Cahill KE, Yu AP, et al. Clinical outcomes and medical care costs among medicare beneficiaries receiving therapy for peripheral arterial disease. *Ann Vasc Surg.* 2010;24(5):577-587.
24. Criqui MH, Fronek A, Barrett-Connor E, et al. The prevalence of peripheral arterial disease in a defined population. *Circulation.* 1985;71(3):510-515.
25. Hiatt WR, Hoag S, Hamman RF. Effect of diagnostic criteria on the prevalence of peripheral arterial disease. The San Luis Valley Diabetes Study. *Circulation.* 1995;91(5):1472-1479.
26. Norgren L, Hiatt WR, Dormandy JA, et al; TASC II Working Group. Inter-society consensus for the management of peripheral arterial disease (TASC II). *J Vasc Surg.* 2007;45 Suppl S:S5-67.
27. Criqui MH, Vargas V, Denenberg JO, et al. Ethnicity and peripheral arterial disease: the San Diego Population Study. *Circulation.* 2005;112(17):2703-2707.
28. Forbang NI, Hughes-Austin JM, Allison MA, et al. Peripheral artery disease and non-coronary atherosclerosis in Hispanics: another paradox? *Prog Cardiovasc Dis.* 2014;57(3):237-243.
29. Kullo IJ, Bailey KR, Kardia SL, et al. Ethnic differences in peripheral arterial disease in the NHLBI Genetic Epidemiology Network of Arteriopathy (GENOA) study. *Vasc Med.* 2003;8(4):237-242.
30. Conte MS, Bradbury AW, Kohl P, et al. Global vascular guidelines on the management of chronic limb-threatening ischemia. *Eur J Vasc Endovasc Surg.* 2019;58(1):S1-S109.e33.
31. Pennywell DJ, Tan TW, Zhang WW. Optimal management of infrainguinal arterial occlusive disease. *Vasc Health Risk Manag.* 2014;10:599-608.
32. Fontaine R, Kim M, Kiernan R. Die chirurgische Behandlung der peripheren Durchblutungsstörungen (Surgical treatment of peripheral circulation disorders). *Helv Chir Acta.* 1954;21(5-6):499-533.

33. Aboyans V, Ricco JB, Bartelink MEL, et al. 2017 ESC Guidelines on the diagnosis and treatment of peripheral arterial diseases, in collaboration with the European Society for Vascular Surgery (ESVS): Document covering atherosclerotic disease of extracranial carotid and vertebral, mesenteric, renal, upper and lower extremity arteriesEndorsed by: The European Stroke Organization (ESO) The task force for the diagnosis and treatment of peripheral arterial diseases of the European Society of Cardiology (ESC) and of the European Society for Vascular Surgery (ESVS). *Eur Heart J.* 2018;39:763-816.
34. European Stroke Organisation, Tendera M, Aboyans V, et al. ESC Guidelines on the diagnosis and treatment of peripheral artery diseases: Document covering atherosclerotic disease of extracranial carotid and vertebral, mesenteric, renal, upper and lower extremity arteries: the task force on the diagnosis and treatment of peripheral artery diseases of the European Society of Cardiology (ESC). *Eur Heart J.* 2011;32(22):2851-2906.
35. Savolainen H, Hansen A, Diehm N, et al. Small is beautiful: why profundaplasty should not be forgotten. *World J Surg.* 2007;31(10):2058-2061.
36. Malgor RD, Ricotta JJ, Bower TC, et al. Common femoral artery endarterectomy for lower-extremity ischemia: evaluating the need for additional distal limb revascularization. *Ann Vasc Surg.* 2012;26(7):946-956.
37. Ballotta E, Gruppo M, Mazzalai F, et al. Common femoral artery endarterectomy for occlusive disease: an 8-year single center prospective study. *Surgery.* 2010;147(2):268-274.
38. Boufi M, Ejargue M, Gaye M, et al. Systematic review and meta-analysis of endovascular versus open repair for common femoral artery atherosclerosis treatment. *J Vasc Surg.* 2021;73(4):1445-1455.
39. O'Riordain DS, Buckley DJ, O'Donnell JA. Polytetrafluoroethylene in above-knee arterial bypass surgery for critical ischemia. *Am J Surg.* 1992;164(2):129-131.
40. Quinones-Baldrich WJ, Prego AA, Ucelay-Gomez R, et al. Long-term results of infrainguinal revascularization with polytetrafluoroethylene: a ten-year experience. *J Vasc Surg.* 1992;16(2): 209-217.
41. Ballotta E, Renon L, Toffano M, et al. Prospective randomized study on bilateral above-knee femoropopliteal revascularization: Polytetrafluoroethylene graft versus reversed saphenous vein. *J Vasc Surg.* 2003;38(5):1051-1055.
42. Poletti LF, Matsuura JH, Dattilo JB, et al. Should vein be saved for future operations? A 15-year review of infrainguinal bypasses and the subsequent need for autogenous vein. *Ann Vasc Surg.* 1998;12(2):143-147.
43. Sharrock M, Antoniou SA, Antoniou GA. Vein versus prosthetic graft for femoropopliteal bypass above the knee: A systematic review and meta-analysis of randomized controlled trials. *Angiology.* 2019;70(7):649-661.
44. Yilmaz S, Yilmaz C, Aksoy E, ve ark. Dizüstü arteriyel baypas greftleme operasyonlarında expanded politetrafloroetilen ve büyük safen ven greftlerinin karşılaştırılması. *Damar Cer Derg.* 2015;24(1):29-34.
45. Rychlik IJ, Davey P, Murphy J, et al. A meta-analysis to compare Dacron versus polytetrafluoroethylene grafts for above-knee femoropopliteal artery bypass. *J Vasc Surg.* 2014;60(2):506-515.
46. van de Weijer MA, Kruse RR, Schamp K, et al. Morbidity of femoropopliteal bypass surgery. *Semin Vasc Surg.* 2015;28(2):112-121.
47. Badak TO, Uncu H, Uçak HA, ve ark. Greft trombozuna hibrid cerrahi yaklaşımı. *Turk Gogus Kalp Dama.* 2015;23(4):744-747.
48. Barnes JA, Eid MA, Creager MA, et al. Epidemiology and risk of amputation in patients with diabetes mellitus and peripheral artery disease. *Arterioscler Thromb Vasc Biol.* 2020;40(8):1808-1817.
49. Long CA, Mulder H, Fowkes FGR, et al. Incidence and factors associated with major amputation in patients with peripheral artery disease: Insights from the EUCLID Trial. *Circ Cardiovasc Qual Outcomes.* 2020;13(7):e006399.