

6. BÖLÜM

ANA KORONER LEZYONLARDA PERKÜTAN KORONER GİRİŞİM

Alper KARAKUŞ¹

GİRİŞ

Sol ana koroner (LMCA) hastalığı ilk kez 1912 yılında akut miyokart enfarktüsü (MI) nedeniyle hayatını kaybeden bir hastada James Herrick tarafından tanımlanmıştır (1). Günümüzde koroner anjiyografi (KAG) yapılan hastaların %5-7'sinde kritik öneme sahip korumasız LMCA lezyonu görülmektedir (2).

Tarihsel olarak kritik öneme sahip korumasız LMCA hastalığı yönetiminde koroner arter bypass greft (CABG) cerrahisi altın standart tedavi iken stent teknolojisindeki ve antitrombotik farmakoterapideki gelişmelere paralel, düşük ve orta anatomik kompleks risk skorlarına sahip hastalarda perkütan koroner girişim de (PKG) optimal revaskularizasyon modaliteleri arasındaki yerini almıştır.

Bu bölümde, yakın zamanda yayımlanan randomize kontrollü çalışmalar ve güncel kılavuzlardan elde edilen veriler ışığında, LMCA lezyonlarında optimal PKG sonucunu elde etmek için gerekli teknik ve ipuçları tartışılacaktır.

ANATOMİ VE FİZYOLOJİ

LMCA, sinotubuler bağlantı noktasının hemen altında sol aortik sünüsten köken alır ve üç anatomik bölgeye ayrılır: Ostium, orta kısım ve distal kısım. LMCA ostiumu adventisya tabakasına sahip değildir ve daha yüksek elastik recoil (büzüşme) özelliği gösterir. Orta ve distal LMCA ise koroner ağacın diğer kısımları gibi trilaminar damar anatomisine sahiptir (3).

Olguların 2/3'te sol ön inen koroner arter (LAD) ve sirkumfleks koroner artere (LCx), 1/3'nde LAD ve LCx yanında ramus intermediusa ayrılır. LMCA, sağ

¹ Kardiyoloji Uzmanı, Adıyaman Besni Devlet Hastanesi, alpkarakus06@gmail.com

KAYNAKÇA

1. Herrick, J. B. (1912). Clinical features of sudden obstruction of the coronary arteries. *Journal of the American Medical Association*, 59(23), 2015-2022.
2. DeMots H, Rosch J, McAnulty J, et al. Left main coronary artery disease. *Cardiovasc Clin*. 1977;8:201 – 211.
3. Macaya C, Alfonso F, Iniguez A, et al. Stenting for elastic recoil during coronary angioplasty of the left main coronary artery. *Am J Cardiol*. 1992; 70:105-7.
4. Reig J, Petit M. Main trunk of the left coronary artery: anatomic study of the parameters of clinical interest. *Clinical anatomy*. 2004;17:6-13.
5. Mohr FW, Morice MC, Kappetein AP, et al. Coronary artery bypass graft surgery versus percutaneous coronary intervention in patients with three-vessel disease and left main coronary disease: 5-year follow-up of the randomised, clinical SYNTAX trial. *Lancet* 2013;381:629–38.
6. Morice MC, Serruys PW, Kappetein AP, et al. Five-year outcomes in patients with left main disease treated with either percutaneous coronary intervention or coronary artery bypass grafting in the synergy between percutaneous coronary intervention with Taxus and cardiac surgery trial. *Circulation* 2014;129:2388–94.
7. Thuijs D, Kappetein AP, Serruys PW, et al. Percutaneous coronary intervention versus coronary artery bypass grafting in patients with three-vessel or left main coronary artery disease: 10-year follow-up of the multicentre randomized controlled SYNTAX trial. *Lancet* 2019; 394:1325–34.
8. Park SJ, Kim YH, Park DW, et al. Randomized trial of stents versus bypass surgery for left main coronary artery disease. *N Engl J Med* 2011;364:1718–27.
9. Ahn JM, Roh JH, Kim YH, et al. Randomized trial of stents versus bypass surgery for left main coronary artery disease: 5-year outcomes of the PRECOMBAT Study. *J Am Coll Cardiol* 2015;65:2198–206
10. Stone GW, Sabik JF, Serruys PW, et al. Everolimus-eluting stents or bypass surgery for left main coronary artery disease. *N Engl J Med* 2016;375:2223–35.
11. Stone GW, Kappetein AP, Sabik JF, et al. Five-year outcomes after PCI or CABG for left main coronary disease. *N Engl J Med* 2019;381:1820–30.
12. Mäkipallio T, Holm NR, Lindsay M, et al. Percutaneous coronary angioplasty versus coronary artery bypass grafting in treatment of unprotected left main stenosis (NOBLE): a prospective, randomised, open-label, non-inferiority trial. *Lancet* 2016;388:2743–52.
13. Holm NR, Mäkipallio T, Lindsay MM, et al. Percutaneous coronary angioplasty versus coronary artery bypass grafting in the treatment of unprotected left main stenosis: updated 5-year outcomes from the randomised, non-inferiority NOBLE trial. *Lancet* 2020;395:191–9.
14. Neumann FJ, Sousa-Uva M, Ahlsson A, et al. (2019). 2018 ESC/EACTS guidelines on myocardial revascularization. *European heart journal*, 40(2), 87-165.
15. Levine GN, Bates ER, Blankenship JC, et al. (2011). 2011 ACCF/AHA/SCAI guideline for percutaneous coronary intervention: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Society for Cardiovascular Angiography and Interventions. *Circulation*, 124(23), e574-e651.
16. De la Torre Hernandez JM, Hernandez Hernandez F, Alfonso F, et al. Prospective application of pre-defined intravascular ultrasound criteria for assessment of intermediate left main coronary artery lesions results from the multicenter LITRO study. *J Am Coll Cardiol*. 2011;58:351-8.
17. Kang SJ, Mintz GS, Oh JH, et al. Intravascular ultrasound assessment of distal left main bifurcation disease: The importance of the polygon of confluence of the left main, left anterior descending, and left circumflex arteries. *Catheter Cardiovasc Interv*. 2011 Jul 29.
18. Fujino Y, Attizzani GF, Bezerra HG, et al. Serial assessment of vessel interactions after drug-eluting stent implantation in unprotected distal left main coronary artery disease using frequency-domain optical coherence tomography. *JACC Cardiovasc Interv*. 2013;6:1035-45

19. Park SJ, Ahn JM, Kang SJ, et al. Paradigm shift to functional angioplasty: new insights for fractional flow reserve- and intravascular ultrasound-guided percutaneous coronary intervention. *Circulation.* 2011;124:951-7
20. Rab T, Sheiban I, Louvard Y, et al. (2017). Current interventions for the left main bifurcation. *JACC: Cardiovascular Interventions,* 10(9), 849-865.
21. Medina A, Suarez de Lezo J, Pan M, et al. A new classification of coronary bifurcation lesions. *Rev Esp Cardiol* 2006; 59: 183.
22. Chen S.L., Sheiban I., Xu B, et al. Impact of the complexity of bifurcation lesions treated with drug-eluting stents: the DEFINITION study (Definitions and Impact of Complex Bifurcation Lesions on Clinical Outcomes After Percutaneous Coronary Intervention Using Drug-Eluting Stents). *J Am Coll Cardiol Intv* 2014; 7: 1266.
23. Garcia-Lara J, Pinar E, Valdesuso R, et al. Percutaneous coronary intervention with rotational atherectomy for severely calcified unprotected left main: immediate and two-years follow-up results. *Catheter Cardiovasc Interv* 2012; 80: 215.
24. Sjauw KD, Konorza T, Erbel R, et al. Supported high-risk percutaneous coronary intervention with the Impella 2.5 device: the Europella registry. *J Am Coll Cardiol* 2009; 54: 2430.
25. Hahn JY, Chun WJ, Kim JH, et al. Predictors and outcomes of side branch occlusion after main vessel stenting in coronary bifurcation lesions: results from the COBIS II Registry (Coronary Bifurcation Stenting). *J Am Coll Cardiol* 2013; 62: 1654.
26. Pan M, Ojeda S, Villanueva E, et al. Structural damage of jailed guidewire during the treatment of coronary bifurcation lesions: a microscopic randomized trial. *J Am Coll Cardiol Intv* 2016; 9: 1917.
27. Percutaneous coronary intervention for the left main stem and other bifurcation lesions: 12th consensus document from the European Bifurcation Club
28. D'Ascenzo F, Iannaccone M, Giordana F, et al. Provisional vs. two-stent technique for unprotected left main coronary artery disease after ten years follow up: a propensity matched analysis. *Int J Cardiol* 2016; 211: 37.
29. Wassef AW, Liu S, Yanagawa, B, et al. (2020). Percutaneous management of coronary bifurcation lesions: current perspective. *Current Opinion in Cardiology,* 35(5), 574-582.
30. Lefèvre T, Girasis C, Lassen JF, et al. Differences between the left main and other bifurcations. *EuroIntervention J Eur Collab Work Group Interv Cardiol Eur Soc Cardiol.* 2015;11 Suppl V:V106–10.
31. Burzotta F, Dzavik V, Ferenc M, et al. Technical aspects of the T and small protrusion (TAP) technique. *EuroIntervention* 2015; 11: V91.
32. Hildick-Smith D, Lassen JF, Albiero R, et al. Consensus from the 5th European Bifurcation Club meeting. *EuroIntervention J Eur Collab Work Group Interv Cardiol Eur Soc Cardiol.* 2010 May;6(1):34–8
33. Chen SL, Xu B, Han YL, et al. Comparison of double kissing crush versus Culotte stenting for unprotected distal left main bifurcation lesions: results from a multicenter, randomized, prospective DKCRUSH-III study. *J Am Coll Cardiol.* 2013;61:1482-8
34. Chen SL, Zhang JJ, Han Y, et al. Double Kissing Crush Versus Provisional Stenting for Left Main Distal Bifurcation Lesions: DKCRUSH-V Randomized Trial. *J Am Coll Cardiol.* 2017;70::2605-2617.
35. Chen SL, Santoso T, Zhang JJ, et al. A randomized clinical study comparing double kissing crush with provisional stenting for treatment of coronary bifurcation lesions: results from the DKCRUSH-II (Double Kissing Crush versus Provisional Stenting Technique for Treatment of Coronary Bifurcation Lesions) trial. *J Am Coll Cardiol.* 57 (2011), pp. 914–920
36. Chen SL, Ye F, Zhang JJ, et al. DK crush technique: modified treatment of bifurcation lesions in coronary artery. *Chin Med J (Engl).* 2005;118:1746 –50.
37. Kubo S., Kadota K., Sabbah M, et al. Clinical and angiographic outcomes after drug-eluting stent implantation with triple-kissing-balloon technique for left main trifurcation lesion: comparison of single-stent and multi-stent procedures. *J Invasive Cardiol* 2014; **26:** 571.