BÖLÜM 15

DİĞER BİFURKASYON STENTLEME TEKNİKLERİ

Ahmet GÜNER
Ezgi Gültekin GÜNER

1.Skirt (Y-Stent) Teknikleri

"Skirt" tekniği olarak da adlandırılan Y-stentleme, ilk olarak 1996 yılında, medina 1,0,0 lezyonları, yani bifurkasyonun hemen proksimalinde bulunan lezyonlar için yayınlandı [1]. Tanımlanan ilk bifurkasyon stentleme tekniği olması nedeniyle tarihsel öneme sahiptir. 2006 yılında, bu teknikle tedavi edilen 30 bifurkasyon lezyon serisi bildiren Helqvist ve ark., bu tekniği karinanın kapsamını iyileştiren bir dizi modifiye eklemelerle güncelledi [2]. 2021 yılında, Ying Jia Ding ve ark. tarafından daha da modifiye edilerek, 6 Fr kılavuz kateter kullanımına izin veren ve radyal arter yoluyla yapılan geçici bir Y-stent yaklaşımı tanımladılar [3]. Bu teknik kullanılarak yapılan ardışık 167 koroner bifurkasyon stentleme prosedürünün uzun dönem sonuçları raporladılar. Üç yıllık takipte, modifiye skirt tekniği, %6 kardiyovasküler mortalite, %7 miyokard enfarktüsü (MI), %1 hedef lezyon revaskülarizasyonu, %0.6 stent trombozu (ST) insidansına sahipti [4]. Ayrıca, hedef damar revaskülarizasyonu (TVR) gerektiren hasta olmadı.

1.1. Adım Adım Skirt Stentleme Tekniği (Şekil 15.1)

Adım #1

Anjiyografik görüntü değerlendirmesi, ana dal (AD), yan dal (YD) ve bifurkasyon karinasını açıkça gösteren en az iki ortogonal poz içermelidir. Özellikle bifurkasyon karinası **için foreshortening veya overlap'den** kaçınılmalıdır.

Adım #2

Hem AD hem de YD kılavuz teller ile geçilir. Gerekirse kissing balon (KB) dilatasyonu da dahil olmak üzere balon anjiyoplasti ile AD ve YD lezyonlarını predilete edilebilir.

Sağlık Bilimleri Üniversitesi, İstanbul Mehmet Akif Ersoy Göğüs Kalp ve Damar Cerrahisi Eğitim ve Araştırma Hastanesi, Kardiyoloji Kliniği

Kaynaklar

1. Fort S, Lazzam C, Schwartz L. Coronary "Y" stenting: a technique for angioplasty of bifurcation stenoses. Can J Cardiol. 1996:12(7):678-682.
2. Helqvist S, Jørgensen E, Kelbæk H, et al. Percutaneous treatment of coronary bifurcation lesions: a novel "extended Y" technique with complete lesion stent coverage. Heart. 2006;92(7):981-982.
3. Ding PYJ, Webber B, Ormiston J, Webster M. Proximal to distal Y-stenting for coronary bifurcation lesions using radial access: A modern bifurcation technique. Catheter Cardiovasc Interv. 2021 Jun 1;97(7):E951-E955.
4. Ding PYJ, George S, Ormiston JA, Webber B, Dimalapang E, Webster M. Proximal to Distal Y-Stent Deployment for Coronary Bifurcation Lesions: Procedure and Three-Year Clinical Outcomes. J Invasive Cardiol. 2022 May;34(5):E397-E407.
5. Schampaert E, Fort S, Adelman AG, Schwartz L. The V-stent: a novel technique for coronary bifurcation stenting.. Cathet Cardiovasc Diagn. 1996 Nov;39(3):320-6.
6. Sharma SK. Simultaneous kissing drug-eluting stent technique for percutaneous treatment of bifurcation lesions in large-size vessels. Catheter Cardiovasc Interv 2005 May;65(1):10-6.
7. Morris PD, Iqbal J, Chiastra C, Wu W, Migliavacca F, Gunn JP. Simultaneous kissing stents to treat unprotected left main stem coronary artery bifurcation disease; stent expansion, vessel injury, hemodynamics, tissue healing, restenosis, and repeat revascularization. E381-E392. Catheter Cardiovasc Interv. 2018; 92:E381-E392.
8. Ghosh P, Shah A, Sporn D, Kaluski E. Two-step V-stenting and simultaneous kissing stent via 6F guides: Simple just got simpler. Cardiovasc Revasc Med. 2022 Jun 9:S1553-8389(22)00297-4. doi: 10.1016/j.carrev.2022.06.005. Online ahead of print.
9. Girasis C, Onuma Y, Wong CK, Kukreja N, van Domburg R, Serruys P.Long-term outcome after the V stenting technique in de novo bifurcation lesions using drug-eluting stents. EuroIntervention. 2009 Jun;5(2):197-205.
10. Colombo A, Gaglione A, Nakamura S, Finci L. "Kissing" stents for bifurcational coronary lesion. Catheter Cardiovasc Diagn 1993;30: 327–330.
11. Teirstein PS. Kissing Palmaz-Schatz stents for coronary bifurcation stenoses. Catheter Cardiovasc Diagn 1996;37:307–310.
12. Sharma SK, Choudhury A, Lee J, Kim MC, Fisher E, Steinheimer AM, Kini AS. Simultaneous kissing stents (SKS) technique for treating bifurcation lesions in medium-to-large size coronary arteries. Am J Cardiol 2004;94:913.
13. Morton AC, Siotia A, Arnold ND, Korgul P, Bowles J, Heppenstall J, Gunn J. Simultaneous kissing stent technique to treat left main stem bifurcation disease. Catheter Cardiovasc Interv 2007;69:209–215.
14. Lassen JF, Albiero R, Johnson TW, Burzotta F, Lefèvre T, Iles TL, Pan M, Banning AP, Chatzizisis YS, Ferenc M, Dzavik V, Milasinovic D, Darremont O, Hildick-Smith D, Louvard Y, Stankovic G. Treatment of coronary bifurcation lesions, part II: implanting two stents. The 16th expert consensus document of the European Bifurcation Club. EuroIntervention. 2022 May 15:EIJ-D-22-00166. doi: 10.4244/EIJ-D-22-00166. Online ahead of print.
15. Lunardi M, Louvard Y, Lefèvre T, Stankovic G, Burzotta F, Kassab GS, Lassen JF, Darremont O, Garg S, Koo BK, Holm NR, Johnson TW, Pan M, Chatzizisis YS, Banning AP, Chieffo A, Dudek D, Hildick-Smith D, Garot J, Henry TD, Dangas G, Stone G, Krucoff MW, Cutlip D, Mehran R, Wijns W, Sharif F, Serruys PW, Onuma Y. Definitions and Standardized Endpoints for Treatment of Coronary Bifurcations. EuroIntervention. 2022 May 18:EIJ-E-22-00018. doi: 10.4244/EIJ-E-22-00018. Online ahead of print.
16. Kinoshita Y, Katoh O, Matsubara T, et al. First clinical experience of "flower petal stenting": a novel technique for the treatment of coronary bifurcation lesions. JACC Cardiovasc Interv 2010; 3: pp. 58-65.
17. Çaylı M, Şahin DY, Elbasan Z, Gür M, Çağlıyan CE, Kıvrak A, Şeker T, Ballı M. Modified flower petal technique: a new technique for the treatment of Medina type 1.1.1 coronary bifurcation lesions. JACC Cardiovasc Interv. 2013;6:516-2.
18. Çayli M, Elbasan Z, Gür M, Seker T, Uçar H, Kuloglu O, Sen Ö, Sahin DY, Kalkan GY. Modified flower petal technique in the treatment of Medina type 0,0,1 or 0,1,0 lesions. EuroIntervention. 2015 Nov;11(7):772-9.
19. Murasato Y, Meno K, Ura Y, Takenaka K. Napkin ring formation in culotte stenting using current-generation drug-eluting stents in left main coronary artery bifurcation. EuroIntervention. 2022 Apr 22;17(18):1488-1489.
20. Kern MJ, Ouellette D, Frianeza T. A new technique to anchor stents for exact placement in ostial stenoses: the stent tail wire or Szabo technique. Catheter Cardiovasc Interv. 2006;68:901–6. 17.
21. Gutiérrez-Chico JL, Villanueva-Benito I, Villanueva-Montoto L, VázquezFernández S, Kleinecke C, Gielen S, et al. Szabo technique versus conventional angiographic placement in bifurcations 010-001 of Medina and in aorto-ostial stenting: angiographic and procedural results. EuroIntervention. 2010;5:801–8.
22. Yang H, Qian J, Huang Z, Ge J. Szabo 2-stent technique for coronary bifurcation lesions: procedural and short-term outcomes. BMC Cardiovasc Disord. 2020 Jul 7;20(1):325.
23. Catakoglu AB, Aytekin V. The Highway Technique: a new stenting technique to treat coronary bifurcation lesions. EuroIntervention. 2010 Feb;5(7):821-5.
24. Khoja A, Ozbek C, Bay W, Heisel A.Trouser-like stenting: a new technique for bifurcation lesions. Cathet Cardiovasc Diagn.1997 Jun;41(2):192-6.