Bölüm
11

AORT KOARKTASYONUNA BAĞLI HİPERTANSİYON

Arda Aybars PALA[1]

GİRİŞ

Aort koarktasyonu, aortanın konjenital darlığı olarak tanımlanır. Darlık torasik aortada, sol subklavian arterin distalinde, duktus arteriozusun aortaya bağlandığı yerdedir. Çoğunlukla diskret daralma şeklinde olmakla birlikte nadir olarak uzun segment daralması, transvers aortik ark hipoplazisi veya abdominal aort darlığı ile de ilişkili olabilir (1,2). Konjenital kalp hastalıkları arasında % 4-8 oranında görülür. Erkeklerde daha sık karşılaşılır ve erkek/kadın oranı 1,5:1 dir (3).

Aort koarktasyonu izole bir daralma şeklinde ortaya çıkabilmekle birlikte çoğunlukla eşlik eden başka bir kardiyovasküler anomali mevcuttur. Vakaların % 50-75'inde biküspit aort kapak ile birliktelik vardır. Aortik ark hipoplazisi, subaortik darlık, mitral kapak anomalileri, ventriküler septal defekt, atriyal septal defekt, büyük arterlerin transpozisyonu, hipoplastik sol kalp sendromu ve patent duktus arteriosus ile birliktelikleri de bulunabilir (4). Aort koarktasyonu % 10 oranında 'Berry' tipi intrakraniyal anevrizmalar ile de birlikte bulunabilir (5).

Aort koarktasyonun genetik incelemesinde çoğunlukla sporodik olmakla birlikte genetik etkinin de önemli rol oynağı görülmüştür. Turner sendromu olgularında %10-15 oranında aort koarktasyonu bulunabilir. Ayrıca Williams-Beuren sendromu, maternal fenilketonüri sendromu, doğumsal rubella sendromları, nörofibromatoz, Takayasu aortiti veya travma ile de ilişkili olabilir (6).

Aort koarktasyonu sekonder hipertansiyonun önemli nedenlerinden biridir. Bu hastalık genelde rutin muayenede üfürüm duyulması ya da hipertansiyon sebebiyle tespit edilir. Zayıf femoral nabızlar, üst ve alt ekstremite sistolik kan basınçları arasında üst ekstremite lehine 20 mmHg veya daha fazla kan basıncı farkı saptanması tanı koymada yardımcıdır.

[1] Kalp ve Damar Cerrahisi Uzmanı, Adıyaman Eğitim ve Araştırma Hastanesi, ardaaybars@hotmail.com

KAYNAKLAR

1. Rhodes JF, Hijazi ZM, Sommer RJ. Pathophysiology of congenital heart disease in the adult, part II. Simple obstructive lesions. Circulation. 2008 4;117(9):1228-37.
2. Price TP, Whisenhunt AK, Policha A, et al. Middle aortic coarctation. Ann Vasc Surg 2014;28:1314.e15-1314.e21
3. Hoffman JI, Kaplan S. The incidence of congenital heart disease. J Am Coll Cardiol 2002;39:1890-900.
4. Becker AE, Becker MJ, Edwards JE. Anomalies associated with coarctation of aorta: particular reference to infancy. Circulation 1970;41:1067-1075.
5. Donti A, Spinardi L, Brighenti M, et al. Frequency of intracranial aneurysms determined by magnetic resonance angiography in children (mean age 16) having operative or endovascular treatment of coarctation of the aorta (mean age 3). Am J Cardiol 2015;116:630-3.
6. Silversides CK, Kiess M, Beauchesne L, et al. Canadian Cardiovascular Society 2009 Consensus Conference on the management of adults with congenital heart disease: outflow tract obstruction, coarctation of the aorta, tetralogy of Fallot, Ebstein anomaly and Marfan's syndrome. Can J Cardiol. 2010 Mar;26(3):e80-97.
7. Ho SY, Anderson RH. Coarctation, tubular hypoplasia, and the ductus arteriosus. Histological study of 35 specimens. Br Heart J 1979;41:268-74.
8. Kirklin JW, Barratt-Boyes BG (1993). Coarctation of the aorta and interrupted aortic arch. In: Kirklin JW, Barratt-Boyes BG (Eds.). Cardiac Surgery (2nd ed., pp. 1263-325). USA: Churchill Livingstone.
9. Niwa K, Perloff JK, Bhuta SM, et al. Structural abnormalities of great arterial walls in congenital heart disease: light and electron microscopic analyses. Circulation 2001;103:393-400.
10. Kenny D, Hijazi ZM. Coarctation of the aorta: from fetal life to adulthood. Cardiol J 2011;18:487-95.
11. Alkashkari W, Albugami S, Hijazi ZM. Management of Coarctation of The Aorta in Adult Patients: State of The Art. Korean Circ J. 2019 Apr;49(4):298-313.
12. Warnes CA, Williams RG, Bashore TM, et al. ACC/AHA 2008 Guidelines for the Management of Adults with Congenital Heart Disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (writing committee to develop guidelines on the management of adults with congenital heart disease). Circulation 2008;118:e714-e833.
13. Chessa M, Carrozza M, Butera G, et al: The impact of interventional cardiology for the management of adults with congenital heart defects. Cathet Cardiovasc Interv 2006;67:258.
14. Nielsen JC, Powell AJ, Gauvreau K, et al. Magnetic resonance imaging predictors of coarctation severity. Circulation. 2005;111:622-8.
15. Seirafi PA, Warner KG, Geggel RL, et al. Repair of coarctation of the aorta during infancy minimizes the risk of late hypertension. The Annals of thoracic surgery. 1998;66(4):1378-1382.
16. Baumgartner H, Bonhoeffer P, De Groot NM, et al. ESC guidelines for the management of grown-up congenital heart disease (new version 2010). Eur Heart J 2010;31:2915-57.
17. Dodge-Khatami A, Backer CL, Mavroudis C. Risk factors for recoarctation and results of reoperation: a 40-year review. J Card Surg 2000;15:369-377.
18. Charlton-Ouw KM, Codreanu ME, Leake SS, et al. Open repair of adult aortic coarctation mostly by a resection and graft replacement technique. J Vasc Surg 2015; 61: 66-72.
19. Vergales JE, Gangemi JJ, Rhueban KS, et al. Coarctation of the aorta - the current state of surgical and transcatheter therapies. Curr Cardiol Rev 2013; 9: 211-219.
20. Burch PT, Cowley CG, Holubkov R, et al. Coarctation repair in neonates and young infants: is small size or low weight still a risk factor? J Thorac Cardiovasc Surg 2009;138:547-52.
21. Wada T, Yao H, Miyamoto T, et al. Prevention and detection of spinal cord injury during thoracic and thoracoabdominal aortic repairs. Ann Thorac Surg 2001;72:80-4.
22. Beekman RH, Rocchini AP, Behrendt DM, et al., Long-term outcome after repair of coarctati-

on in infancy: subclavian angioplasty does not reduce the need for reoperation. Journal of the American College of Cardiology. 1986;8(6):1406-1411.
23. Lock JE, Niemi T, Burke BA, et al. Transcutaneous angioplasty of experimental aortic coarctation. Circulation 1982;66:1280-6.
24. Walhout RJ, Suttorp MJ, Mackaij GJ, et al. Long-term outcome after balloon angioplasty of coarctation of the aorta in adolescents and adults: Is aneurysm formation an issue? Catheterization and cardiovascular interventions: official journal of the Society for Cardiac Angiography & Interventions. 2009;73(4):549-556.
25. Harris KC, Du W, Cowley CG, et al. A prospective observational multicenter study of balloon angioplasty for the treatment of native and recurrent coarctation of the aorta. Catheter Cardiovasc Interv 2014;83:1116-1123.
26. Fawzy ME, Awad M, Hassan W, et al. Long-term outcome (up to 15 years) of balloon angioplasty of discrete native coarctation of the aorta in adolescents and adults. Journal of the American College of Cardiology. 2004;43(6):1062-1067.
27. Fawzy ME, Fathala A, Osman A, et al. Twenty-two years of follow-up results of balloon angioplasty for discreet native coarctation of the aorta in adolescents and adults. Am Heart J 2008;156:910-917.
28. O'Laughlin MP, Perry SB, Lock JE, et al. Use of endovascular stents in congenital heart disease. Circulation 1991;83:1923-1939.
29. Forbes TJ, Garekar S, Amin Z, et al. Procedural results and acute complications in stenting native and recurrent coarctation of the aorta in patients over 4 years of age: a multi-institutional study. Catheter Cardiovasc Interv 2007;70:276-85.
30. Sohrabi B, Jamshidi P, Yaghoubi A, et al. Comparison between covered and bare Cheatham-Platinum stents for endovascular treatment of patients with native post-ductal aortic coarctation: immediate and intermediate-term results. JACC Cardiovascular interventions. 2014;7(4):416-423.
31. Baue AE. (1996). Glenn's Thoracic and Cardiovascular Surgery. Connecticut: Appleton&Lange.
32. Kenny D, Polson JW, Martin RP, et al. Hypertension and coarctation of the aorta: an inevitable consequence of developmental pathophysiology. Hypertens Res 2011;34:543-7.
33. Canniffe C, Ou P, Walsh K, et al. Hypertension after repair of aortic coarctation-a systematic review. Int J Cardiol. 2013 Sep 10;167(6):2456-61.
34. Bocelli A, Favilli S, Pollini I, et al. Prevalence and long-term predictors of left ventricular hypertrophy, late hypertension, and hypertensive response to exercise after successful aortic coarctation repair. Pediatr Cardiol 2013;34:620-9.
35. Vriend JW, van Montfrans GA, Romkes HH, et al. Relation between exercise-induced hypertension and sustained hypertension in adult patients after successful repair of aortic coarctation. J Hypertens. 2004 Mar;22(3):501-9.