CHAPTER 8

ENDOVASCULAR TREATMENT OF AORTIC PATHOLOGIES

Nail KAHRAMAN¹ Sadık Ahmet SÜNBÜL²

INTRODUCTION

Endovascular treatment option in aortic pathologies is an alternative to open surgery. Endovascular interventions are identified vessel angioplasty and vessel reconstruction. Endovascular treatments have been used primarily in high-risk patients for open surgery. As the experience in this field increased, endovascular procedures started to be used routinely in daily practice in aortic pathologies. By definition, endovascular intervention covers all types of intravenous device use and performed procedures. Endovascular procedures may come to the fore for any patient with an indication for surgery.

ENDOVASCULAR INTERVENTION INDICATIONS

The selection of patients proper for endovascular aortic replacement (EVAR) should be multidisciplinary. The patient's advanced age, coronary artery disease, severe respiratory disease, renal dysfunction, obesity, and anatomical suitability are part of this evaluation. Coronary artery disease is associated

¹ Associate Professor, Department of Cardiovascular Surgery; University of Health Science, Bursa City Hospital, nailkahraman1979@gmail.com

² Assistant Doctor, Department of Cardiovascular Surgery; University of Health Sciences, Bursa Yuksek Ihtisas Education and Research Hospital, sas@sadikahmet.com

REFERENCES

- 1. Lazaris AM. Regarding "The Society for Vascular Surgery practice guidelines on the care of patients with an abdominal aortic aneurysm". Journal of vascular surgery. 2019;69(3):975.
- 2. Patel R, Powell JT, Sweeting M, Epstein DM, Barrett J, Greenhalgh RM. The UK EndoVascular Aneurysm Repair (EVAR) randomised controlled trials: long-term follow-up and cost-effectiveness analysis. 2018.
- 3. Patel MS, Brown DA, Wilson SE. Relevance of the ADAM and UK Small Aneurysm trial data in the age of endovascular aneurysm repair. Archives of Surgery. 2009;144(9):806-10.
- 4. Elefteriades JA. Indications for aortic replacement. The Journal of thoracic and cardiovascular surgery. 2010;140(6):S5-S9.
- 5. Demetriades D, Velmahos GC, Scalea TM, Jurkovich GJ, Karmy-Jones R, Teixeira PG, et al. Operative repair or endovascular stent graft in blunt traumatic thoracic aortic injuries: results of an American Association for the Surgery of Trauma Multicenter Study. Journal of Trauma and Acute Care Surgery. 2008;64(3):561-71.
- 6. Cerna M, Kocher M, Thomas RP. Acute aorta, overview of acute CT findings and endovascular treatment options. Biomedical Papers of the Medical Faculty of Palacky University in Olomouc. 2017;161(1).
- 7. Coady MA, Rizzo JA, Hammond GL, Pierce JG, Kopf GS, Elefteriades JA. Penetrating ulcer of the thoracic aorta: what is it? How do we recognize it? How do we manage it? Journal of vascular surgery. 1998;27(6):1006-16.
- 8. Greenberg RK, Lytle B. Endovascular repair of thoracoabdominal aneurysms. Circulation. 2008;117(17):2288-96.
- 9. Torsello GB, Kasprzak B, Klenk E, Tessarek J, Osada N, Torsello GF. Endovascular suture versus cutdown for endovascular aneurysm repair: a prospective randomized pilot study. Journal of vascular surgery. 2003;38(1):78-82.
- 10. Svetlikov AV. Unknown pages in the history of vascular stent grafting. Journal of vascular surgery. 2014;59(3):865-8.
- 11. Parodi J, Palmaz J, Barone H. Transfemoral intraluminal graft implantation for abdominal aortic aneurysms. Annals of vascular surgery. 1991;5(6):491-9.
- 12. Macía I, de Blas M, Legarreta JH, Kabongo L, Hernández Ó, Egaña JM, et al. Standard and fenestrated endograft sizing in EVAR planning: description and validation of a semi-automated 3D software. Computerized Medical Imaging and Graphics. 2016;50:9-23.
- 13. Georgiadis GS, van Herwaarden JA, Antoniou GA, Giannoukas AD, Lazarides MK, Moll FL. Fenestrated stent grafts for the treatment of complex aortic aneurysm disease: A mature treatment paradigm. Vascular Medicine. 2016;21(3):223-38.
- 14. Biancari F, Mariscalco G, Mariani S, Saari P, Satta J, Juvonen T. Endovascular treatment of degenerative aneurysms involving only the descending thoracic aorta: systematic review and meta-analysis. Journal of Endovascular Therapy. 2016;23(2):387-92.

- 15. Baldassarre D, Pepi M. Aortic atherosclerosis as an embolic source. Pharmacotherapy in Aortic Disease: Springer; 2015. p. 1-64.
- Gabriel EA, Locali RF, Matsoka PK, Romano CC, Duarte AJdS, Buffolo E. First inflammatory risk score for aortic endoprostheses. Brazilian Journal of Cardiovascular Surgery. 2008;23:512-8.
- 17. Makaroun M. Dillavou ED Wheatley GH Cambria RP; Gore TAG Investigators. Five-year results of endovascular treatment with the Gore TAG device compared with open repair of thoracic aortic aneurysms J Vasc Surg. 2008;47(5):912-8.
- McDonnell C, Halak M, Bartlett A, Baker S. Abdominal aortic aneurysm neck morphology: proposed classification system. Irish journal of medical science. 2006;175(3):4-8.
- Tadros RO, Lipsitz EC, Chaer RA, Faries PL, Marin ML, Cho J-S. A multicenter experience of the management of collapsed thoracic endografts. Journal of vascular surgery. 2011;53(5):1217-22.
- 20. Curren O. Acute Aortic Dissection: Update On D. 2017.
- 21. White GH, Yu W, May J, Chaufour X, Stephen MS. Endoleak as a complication of endoluminal grafting of abdominal aortic aneurysms: classification, incidence, diagnosis, and management. Journal of Endovascular Therapy. 1997;4(2):152-68.