

Treatment Methods for Abdominal Aortic Aneurysms

Introduction

The wall of the abdominal aorta is made of collagen and elastin which gives it the ability to expand and recoil with pulsating blood. If this expansion occurs beyond 6 cm in diameter, it is diagnosed as an aneurysm.¹ If expansion persists without treatment, it could lead to a fatal rupture. This poster explains two main methods of treatment.

Endovascular Aneurysm Repair

EVAR is a much less invasive procedure that requires an Interventional Radiologist to make a small incision in the groin to access the femoral artery. A catheter is guided to the location of the aneurysm and a stent is placed, also known as an endograft, see figure 1.²

Open Surgical Repair

Open surgery requires a large incision through the abdomen. The aorta is clamped, the aneurysm is resected, and a stent graft is woven into the healthy portion of the aorta, as shown in figures 3 and 4.³

Imaging Post-Treatment

Figure 1. The metal framework of the endografts help keep its shape and shunt blood away from the aneurysm.¹

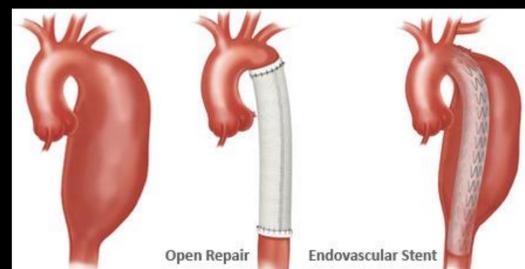
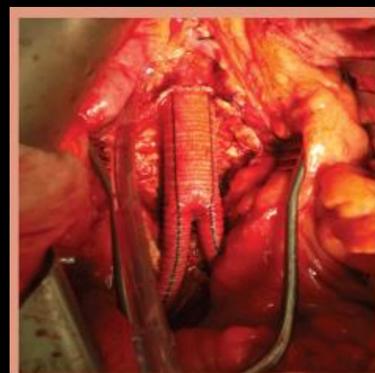


Figure 2. This comparison of treatment options shows an aneurysm (left), treatment with a stent from open surgery (middle), and treatment with endograft (right).⁴



Figures 3 & 4. These images demonstrate the stent grafts made of polyester or autogenous vein. The grafts are made to match the diameter of the healthy aorta and sewn into place.¹

Complications

Benefit versus risk factors must be addressed for each individual case. One of the biggest risk factors is mortality rates. EVAR presents with 3% 30-day mortality rates, and surgery has a 1-7% of mortality rates in elective cases.⁴

Coronary artery disease poses the biggest threat to mortality rates in open surgery, followed by renal failure, lung disease, and liver cirrhosis.⁵

EVAR more commonly results in post-repair complications and infections.⁴

Conclusion

Abdominal aortic aneurysms can be extremely fatal if they rupture, but with proper diagnosis, monitoring, and treatment, patients can have the chance to keep living a successful life.

References
1. 3. Legg J, Legg L. Abdominal Aortic Aneurysms. *Radiologic Technology*. 2016;88(2): 145-163.
2. Iezzi R, Santoro M, Dattesi R, et al. Multi-detector CT angiographic imaging in the follow-up of patients after endovascular abdominal aortic aneurysm repair (EVAR). *Insights into Imaging*. 2012;3(4):313-321.
3. NursingCenter. Care of the endovascular aneurysm repair patient with an endoleak. http://www.nursingcenter.com/journalarticle?Article_ID=1547269&Journal_ID=682710&Issue_ID=1547187&expiredate=1. Reviewed May 2013. Accessed October 28, 2017.
4. Bae M, Chung SW, Lee CW, Song S, Kim E, Kim CW. A Comparative Study of Abdominal Aortic Aneurysm: Endovascular Aneurysm Repair versus Open Repair. *The Korean Journal of Thoracic and Cardiovascular Surgery*. 2017;50(4):263-269.
5. Health Quality Ontario. Endovascular Repair of Abdominal Aortic Aneurysm: An Evidence-Based Analysis. *Ontario Health Technology Assessment Series*. 2002;2(1):1-46.