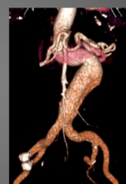
Reasons For And Outcomes Of Open Aortic Repair In A High Volume Endovascular Center



Athanasios Katsargyris, MD, PhD, Eric LG Verhoeven MD, PhD
Paracelsus Medical University Klinikum Nuremberg, Germany

Disclosures

- *Cook Medical*
  - *Speaker fees*
- *W.L. Gore*
  - *Speaker fees*
- *Bentley Innomed GmbH*
  - *Consultant*
- *Artivion GmbH*
  - *Speaker fees*

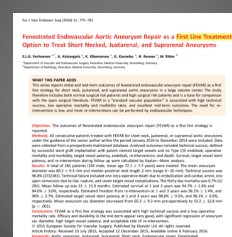
Endovascular Aortic Repair

Nuremberg Experience since 2011

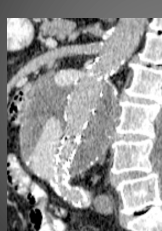
- EVAR: 1083
- TEVAR: 330
- Arch Repair: 52
- **FEVAR for Pararenal AAA: 760**
- **F/BEVAR for TAAA: 540**

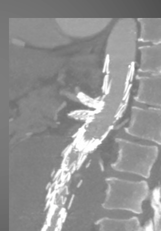
Total: N=2765

FEVAR for Pararenal AAA: First Line Treatment

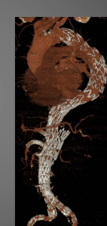


FEVAR to repair failed EVAR





F/BEVAR to repair failed FEVAR

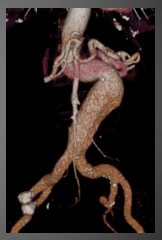


Potential Reasons for OPEN Repair

- Anatomical
- Concomitant AAA & Iliac PAD
- Previous EVAR with complications
- Large pararenal AAA (risk to wait for CMD)
- Patient's age/preference
- Infected grafts

Example #1

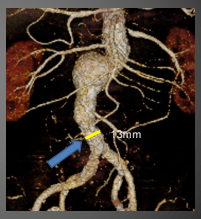
- Double 90º neck angulation



O199

Example #2

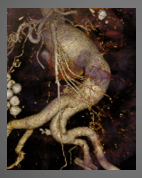
- Short neck
- Narrow distal aorta

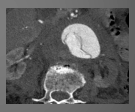


O197

Example #3

- Rupture
- Dissection
- No Neck

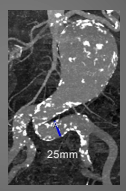


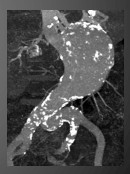


O196

Example #4

- Short & angulated neck
- Aneurysmatic Iliacs
- No thrombus in sac
  - (Risk for Type II Endoleak)

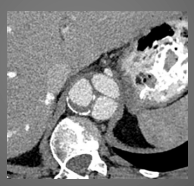




O195

Example #5

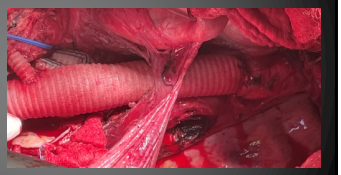
- Young patient
- Marfan
- Dissection
  - 3 Lumens



Courtesy Prof. Klonaris

Example #5

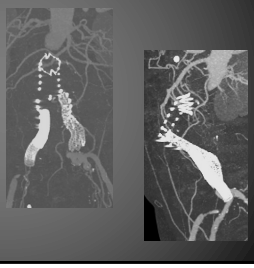
- Open repair with seperate revascularisation of visceral arteries



Courtesy Prof. Klonaris

Example #6

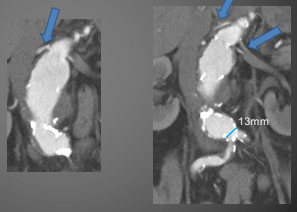
- Stent-graft collapse with occlusion
  - Acute Conversion



0136

Example #7

- Juxtarenal AAA
- Multiple small RAs
- Narrow distal aorta



0229

Example #8

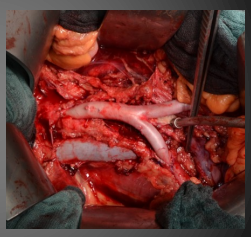
- Juxtarenal AAA
- Occlusion EIA bilateral

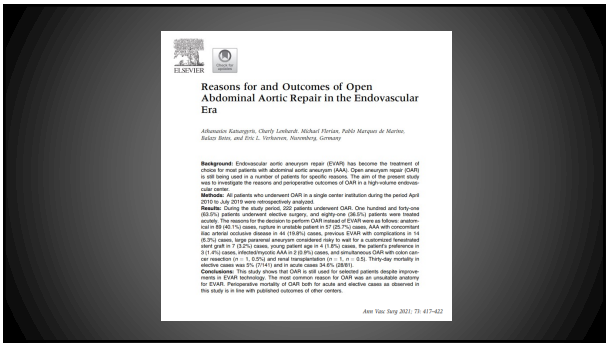
0236

Example #9

- Graft Infection
  - 10 years after aorto-bi-iliac Graft

- Replacement with cryopreserved homograft





Reasons for and Outcomes of Open Abdominal Aortic Repair in the Endovascular Era

Athanasios Katsargyris, Charly Lenhardt, Michael Florian, Pablo Marques de Marino, Balazs Botos, and Eric L. Verhoeven, Nuremberg, Germany

Background: Endovascular aortic aneurysm repair (EVAR) has become the treatment of choice for most patients with abdominal aortic aneurysm (AAA). Open aneurysm repair (OAR) is still being used in a number of patients for specific reasons. The aim of the present study was to investigate the reasons and perioperative outcomes of OAR in a high-volume endovascular centre.

Methods: All patients who underwent OAR in a single center institution during the period April 2010 to July 2019 were retrospectively analyzed.

Results: During the study period, 222 patients underwent OAR. One hundred and forty-one (63.5%) patients underwent elective surgery, and eighty-one (36.5%) patients were treated acutely. The reasons for the decision to perform OAR instead of EVAR were as follows: anatomical in 89 (40.1%) cases, rupture in unstable patient in 57 (25.7%) cases, AAA with concomitant iliac arterial occlusive disease in 44 (19.8%) cases, previous EVAR with complications in 14 (6.3%) cases, large pararenal aneurysm considered risky to wait for a customized fenestrated stent graft in 7 (3.2%) cases, young patient age in 4 (1.8%) cases, the patient's preference in 3 (1.4%) cases, infected/mycotic AAA in 2 (0.9%) cases, and simultaneous OAR with colon cancer resection (n = 1, 0.5%) and renal transplantation (n = 1, n = 0.5). Thirty-day mortality in elective cases was 3.4% (9/268) and in acute cases 30.3% (40/132).

Conclusions: This study shows that OAR is still used for selected patients despite improvements in EVAR technology. The most common reason for OAR was an unsuitable anatomy for EVAR. Perioperative mortality of OAR both for acute and elective cases as observed in this study is in line with published outcomes of other centers.

Ann Vasc Surg 2021; 71: 417–422

OPEN AAA Nuremberg Experience

2011-2024

- OPEN AAA Repair: N=400
  - 67% (N=268) Elective, 33% (N=132) Acute
  - 30d Mortality
    - Elective: 3.4% (9/268)
    - Acute: 30.3% (40/132)

Reasons for OPEN Repair*

- Anatomical: 42%
- Rupture in unstable patient not suitable for EVAR: 28%
- AAA & Iliac PAD: 15%
- Previous EVAR with complications: 4%
- Large pararenal AAA (risk to wait for CMD): 3.5%
- Young Pt age or Pt preference: 4%
- Infected grafts/mycotic AAA: 1.6%
- Other reason: 1.9%

** Often combination of >1 reasons*

Conclusions

- Open repair
  - Still necessary in specialized endovascular centers
  - Most common reasons
    - Unsuitable Anatomy for ENDO in relatively younger pts
    - Rupture in unstable pts not suitable for stEVAR
  - Outcomes: in line with published literature
    - Increased complexity of AAA left to be treated OPEN