VEITH SYMPOSIUM
Connecting The Vascular Community

Open and endovascular treatment of aortic arch aneurysms following **aortic coarctation repairs**

Andrea Kahlberg

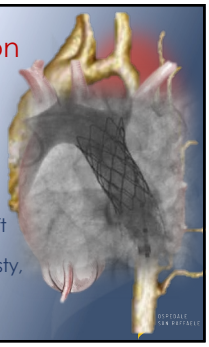
Associate Professor of Vascular Surgery
Vita-Salute University, San Raffaele Scientific Institute
Milano, Italy

Disclosures

- Investigator for trials sponsored by CID/Alvimedica, Boston Scientific, Cook Medical, Getinge, Medtronic, W.L. Gore
- Teaching / speaking at courses or symposia hosted by CID/Alvimedica, Terumo, Getinge
- Member of Advisory Board of Boston Scientific, Medtronic

Aortic coarctation

- 5– 8% of all congenital heart defects
- Association with **BAV (↑ risk)**, RSA anomalies, IC aneurysms
- **OPEN repair options:** end-to-end, subcl. flap, patch aortoplasty, bypass graft
- **ENDO repair options:** balloon angioplasty, stents, covered stents

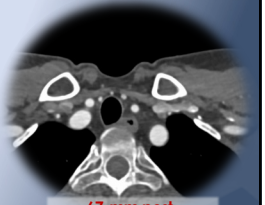


Post-coarctation aneurysm (pCoAA)

- Lifetime incidence of **up to 47%**
- Often saccular, with increased risk of rupture, ↑ **mortality rate**
- **Literature search**: case series, small cohorts, short follow-up

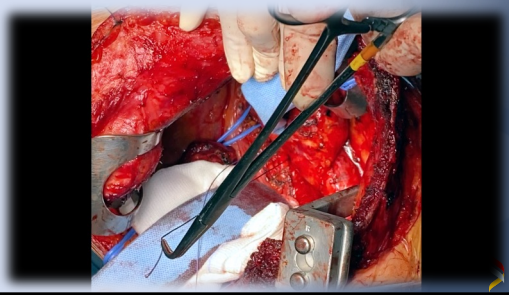
pCoAA treatment: case example

- Man, 56 y.o.
- Active smoker
- At the age of 19: aortic coarctation open repair with Dacron Patch aortoplasty
- Bicuspid aortic valve



67-mm post-coarctation aneurysm

OPEN repair: Surgical technique

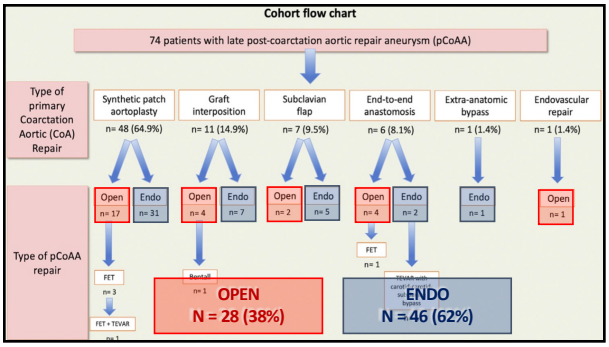


Post-operative course

- No need for ICU
- Uneventful
- Discharge on POD 7
- Follow-up CT-scan @ 2 years

pCoAA International Multicenter Study

- **2000–2021: 74 patients**
- 14 high-volume centers
- median age: 44 years
- BAV association: 9.5%



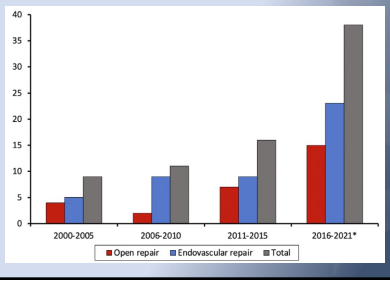
pCoAA Results

Variable	Total (n = 74)	Open repair (n = 28)	Endovascular repair (n = 46)
30-Day mortality	2 (2.7)	1 (3.6)	1 (2.2)
Stroke	1 (1.4)	0	1 (2.2)
Prolonged ventilation (>48 hours)	3 (4.1)	2 (7.1)	1 (2.2)
Postoperative hemodialysis	2 (2.7)	1 (3.6)	1 (2.2)
Focal cord paralysis	2 (2.7)	2 (7.1)	0
Pulmonary embolism	1 (1.4)	1 (3.6)	0
Arrhythmia	2 (2.7)	2 (7.1)	0
Access complications (pseudoaneurysm)	1 (1.4)	1 (3.6)	0
In-hospital reintervention	5 (6.8)	3 (10.7)	2 (4.3)
Cause for reintervention			
Bleeding	3 (4.1)	3 (10.7)	0
Type IA endoleak	2 (2.7)	NA	2 (4.3)
Type of reintervention			
TEVAR	1 (1.4)	0	1 (2.2)
Open surgical conversion	1 (1.4)	NA	1 (2.2)
Length of stay, days	6 (5-8)	8 (7-12)	5 (4-7)
Reintervention during follow-up	2 (2.7)	1 (3.6)	1 (2.2)
Cause for reintervention			
Type IB endoleak with aneurysm growth	1 (1.4)	NA	1 (2.2)
Left brachial artery thrombosis	1 (1.4)	1 (3.6)	0
Peg puncture site pseudoaneurysm	1 (1.4)	1 (3.6)	0

pCoAA Results

- **OPEN repair:**
  - Clinical success 96% (1 in-hospital death)
- **ENDO repair:**
  - Clinical success 92.5%
  - 2 type IA endoleak (1 open conversion + 1 proximal TEVAR extension)

pCoAA Trend



Conclusions

POST-COARCTATION ANEURYSM REPAIR

- Both Open and Endo repair are safe
- Good early and midterm results
- Endo often requires associated surgical debranching and/or customized grafts
- Very long-term durability of stent-grafts remains unknown (young patients)