

2023 대한심장혈관흉부외과학회

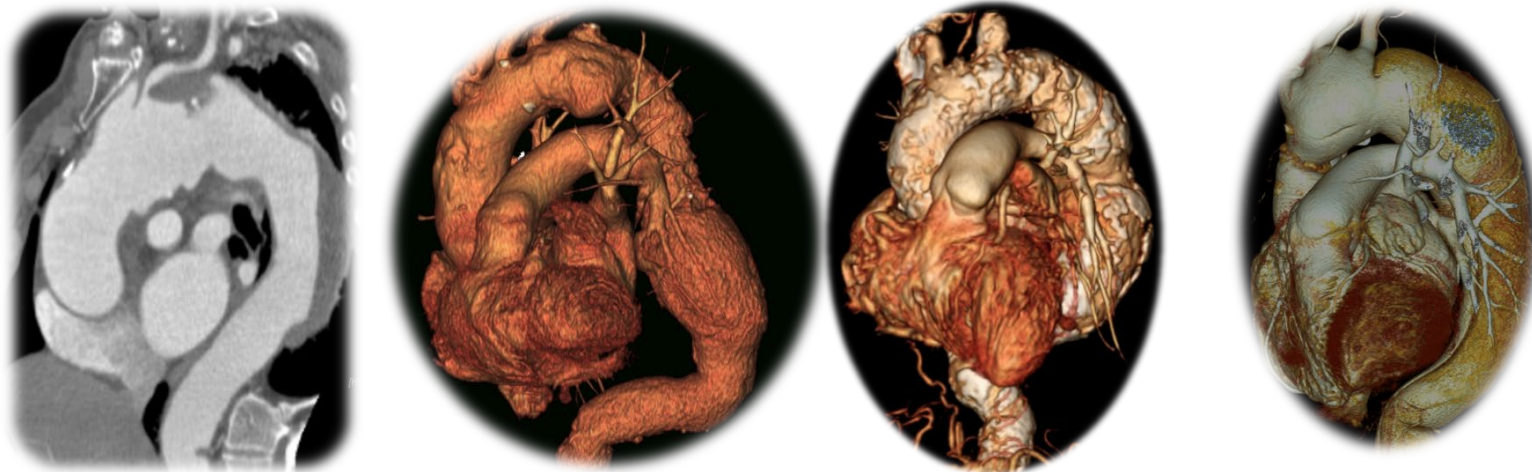
제55차 추계학술대회 & APELSO 2023

2023. 11. 02 (Thu) - 11. 04 (Sat), 그랜드 인터컨티넨탈 파르나스 서울

Early outcomes of different options for repair of extended aortic arch aneurysm

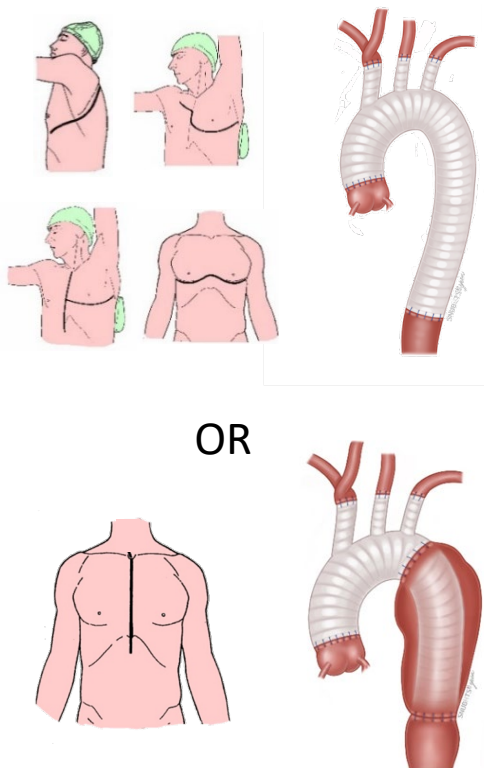


- Surgical repair of aneurysms involving **the aortic arch and the descending aorta (+/- the ascending aorta)** is still considered to be a challenge.
- There are different options including **one-stage open surgery**, **two-stage open repair** using the classic elephant trunk technique, and the **hybrid approach** using the frozen elephant trunk and/or endovascular stent graft.
- This study aimed to evaluate the advantages and limitations of each technique by comparing the early postoperative outcomes.

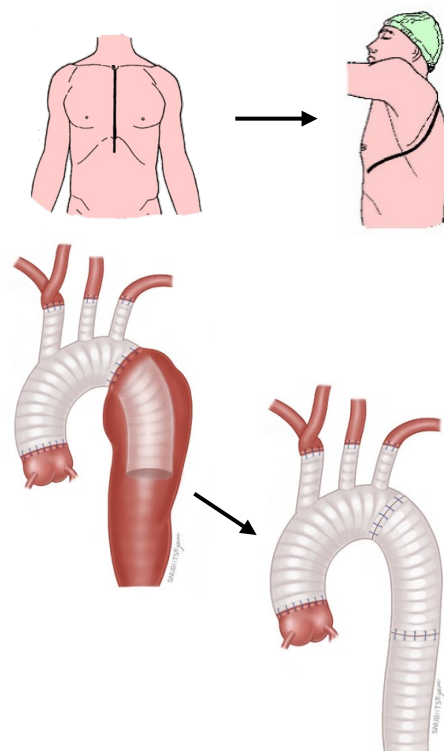


January 2006 to November 2022
Extended aortic arch aneurysm (n = 100)

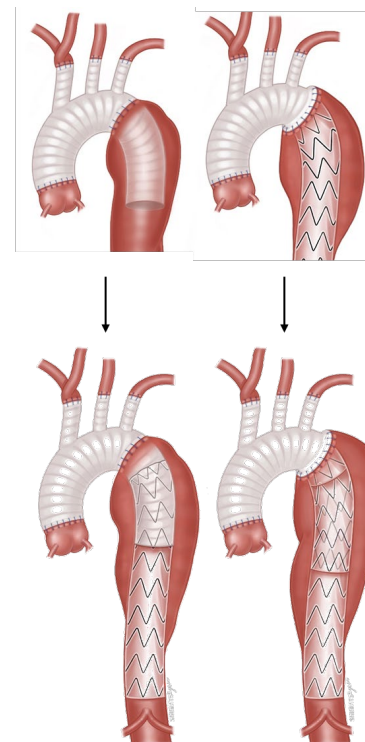
1-stage open repair
(n = 53)



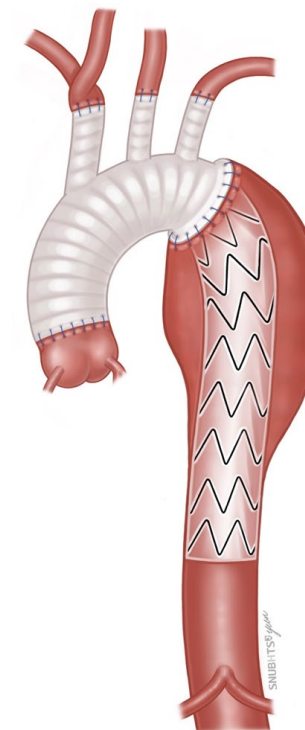
2-stage open repair
using classic ET
(n = 24)



2-stage hybrid
(TAR + CET / FET → TEVAR)
(n = 6)



1-stage hybrid
TARFET +/- TEVAR
(n = 17)



■ Baseline characteristics and operative details

	1-stage open repair (n = 53)		2-stage open repair (n = 24)		2-stage hybrid (n = 6)	1-stage hybrid (n = 17)
	Thoraco- or throaco sternotomy (n = 40)	Median sternotomy* (n = 13)	1 st op (n = 24)	2 nd op completion (n = 20)	CET (n = 3) FET (n = 3)	FET (n = 15) TEVAR (n = 2)
Mean age (year)	66.0	65.0	61.5		79.3	67.0
Dissection	13/40 (32.5%)	8/13 (61.5%)	14/24 (60.9%)		2/6 (33.3%)	10/17 (58.8%)
Emergency	7/40 (17.5%)	0/13 (0.0%)	2/24 (8.3%)	0/20 (0.0%)	0/6 (0.0%)	5/17 (29.4%)
Concomitant cardiac procedures	4/40 (10.0%)	5/13 (38.5%)	5/24 (20.1%)	3/20 (15.0%)	2/6 (33.3%)	5/17 (29.4%)
Previous sternotomy	13/40 (32.5%)	9/13 (69.2%)	4/24 (16.7%)	N/A	0/6 (0.0%)	1/17 (5.9%)

*transmediastinal approach to the descending aorta & aneurysm exclusion with a intraluminal graft

■ Early postoperative outcomes

	1-stage open repair (n = 53)		2-stage open repair (n = 24)		2-stage hybrid (n = 6)	1-stage hybrid (n = 17)
	Thoraco- or throaco sternotomy (n = 40)	Median sternotomy (n = 13)	1 st op (n = 24)	2 nd op (n = 20)	CET (n = 3) FET (n = 3)	FET (n = 15) TEVAR (n = 2)
Operation/ CPB (min)	331 / 158	358 / 204	316 / 143	318 / 105	271 / 141	303 / 169
1. Early mortality	6/40 (15.0%)	1/13 (7.7%)	1/24 (4.2%)	1/20 (5.0%)	0/6 (0.0%)	2/17 (11.8%)
2. Interstage mortality	N/A	N/A	2/24 (8.3%)		0/6 (0.0%)	N/A
3. Stroke	3/40 (7.5%)	0/13 (0.0%)	0/24 (0.0%)	0/20 (0.0%)	0/6 (0.0%)	1/17 (5.9%)
4. Respiratory complication	12/40 (30.0%)	2/13 (15.4%)	1/24 (4.2%)	2/20 (10.0%)	0/6 (0.0%)	1/17 (5.9%)
5. Paraplegia	0/40 (0.0%)	2/13 (15.4%)	0/24 (0.0%)	1/20 (5.0%)	0/6 (0.0%)	1/17 (5.9%)
6. Bowel ischemia	2/40 (5.0%)	1/13 (7.7%)	0/24 (0.0%)	0/20 (0.0%)	0/6 (0.0%)	1/17 (5.9%)
7. Endoleak	N/A	N/A	N/A	N/A	2/6 (33.3%)	0/17 (0.0%)
Satisfactory recovery without above (1~6)	24/40 (60.0%)	10/13 (76.9%)	17/24 (70.8%)		6/6 (100.0%)	12/17 (70.6%)

- There is **no universally satisfactory solution** to extended arch aneurysm.
- Choice of strategy should be based on the pathoanatomy and patient status such as comorbidity, frailty and life expectancy.
 - For both open and hybrid approaches, 2-stage repair showed better outcome. However, they were not feasible in many patients.
 - Any strategy requiring thoracotomy approach carried a higher risk of respiratory complications and stroke, especially in case of one-stage repair.
 - On the contrary, one-stage repair using only the median sternotomy carried a higher risk of spinal cord ischemia.