

Supplementary data

Table S1. Detailed perioperative and postoperative outcomes. Symbols ¹ and ² refer to the same 2 patients. *: underwent reintervention on both aortic valve and the aorta. °: this patient first underwent a reoperation on the aortic valve, and later on the mitral valve. Continuous variables compared using Student's t-test, categorical variables compared using Chi square, Fisher's exact test or Log Rank test as appropriate. Ao Asc=ascending aorta, AS=aortic stenosis, AR=aortic regurgitation, FET=frozen elephant trunk, MVP=mitral valve plasty, RCA=right coronary artery, TEVAR=thoracic endovascular aneurysm repair, TRR=total root replacement.

IN-HOSPITAL OUTCOMES	PEARS (n=159)	VSRR (n=142)	P-value
Intraoperative conversion	2 (1.2%) 1 VSRR - very thin aorta 1 Florida sleeve - haematoma on RCA	0 (0%)	1.00
Reoperation for bleeding	0 (0%)	10 (7%)	<0.001
Coronary revascularization	7 (4.4%) 3 CABG after RCA injury 1 mesh reopened urgently for RV stunning ¹ 1 CABG, ECMO after coronary injury ² 1 CABG due to VFib 1 CABG for LV failure after PEARS + MVP	1 (0.7%) 1 stent to right coronary artery	0.07
Myocardial infarction	3 (1.9%)	0 (0%)	0.25
Stroke	1 (0.6%)	2 (1.4%)	0.60
Perioperative dissection	1 (0.6%)	1 (0.7%)	1.00
Perioperative death	1 (0.6%) ²	0 (0%)	1.00
AR grade postop			<0.001
0/4	144 (92.3%)	100 (72.5%)	
1/4	12 (7.7%)	34 (24.6%)	
2/4	0 (0%)	4 (2.9%)	
Length of stay (d)	6 (5 - 7)	7 (6 - 10)	<0.001
POSTOPERATIVE OUTCOMES	PEARS (n=159)	VSRR (n=142)	P-value
Cardiac / aortic reintervention	3 (1.9%)	11 (7.7%)	0.17
Aortic valve reintervention	1 (0.6%) 1 TRR because mesh was reopened urgently (6y) ¹	7 (4.9%) 1 endocarditis (1m) 4 due to AR (1, °2, 4 and *16y) 1 due to mixed AS/AR (8y) 1 TRR and Ao Asc replacement (14y) *	0.12
Cardiac / Ao Asc / Arch reintervention	3 (1.9%) 1 redo-PEARS for faulty use - incomplete coverage (3y) 1 TRR because mesh was reopened urgently (6y) ¹ 1 redo-PEARS for bulge around RCA (9y)	7 (4.9%) 1 for mitral valve endocarditis (4m) 1 for mitral para-prosthetic leak (3y) ° 2 Ao Asc & Arch replacement + FET (4 and 5y) 1 debranching + TEVAR (6y) 1 TRR and Ao Asc replacement (14y) * 1 TRR + Ao Asc + Arch + debranching (16y) *	0.71
Type A dissection	0 (0%)	0 (0%)	-
Type B dissection	1 (0.6%)	5 (3.5%)	0.26
Death	2 (1.2%) 1 unknown (1y) 1 arrhythmia (4y)	4 (2.8%) 2 non cardiac (2m and 18y) 1 unknown (13y) 1 post-aortic reintervention (5y)	0.96
AR grade at last follow-up			<0.001
0/4	129 (89.6%)	64 (49.6%)	
1/4	14 (9.7%)	51 (39.5%)	
2/4	1 (0.7%)	4 (3.1%)	
3 and 4/4		10 (7.8%)	