Tab. 3. *Peri- and post-procedural details*

	Intervention (%)	Mean CPB time (min)	Mean aortic clamping time (min)	IHM (%)	Survival rate 1y (%)	Survival rate 5y (%)	Survival rate 10y (%)
Atik et al. (8)	Tube graft 77 Repair/patch 23	173 ± 74	112 ± 50	6	94	74	60
Dumont et al. (9)	Dacron graft 45 Bovine pericardial patch 36 Homograft 9 Primary closure 9	178 ± 51	38 ± 18	18	N/A	N/A	N/A
Katsumata et al. (6)	Direct suture repair 50 Root/AA homograft 40 Root/AA Dacron graft 10	N/A	N/A	20	80	N/A	N/A
Malvindi et al. (10)	Direct suture 63 Bentall 21 AAR 12 ArchR 4	152 ± 75	96 ± 58	16	83	62	N/A
Malvindi et al. (5)	Bentall/CABG/ Arch/ET 37 Direct suture 32 AA / proximal ArchR 16 Arch / TAAAR 7 AVR + AA + ArchR 2 Debranching + endoprosthesis 2 TAAAR 2	188 ± 69	102 ± 52	6	94	79	68
Mohammadi et al. (11)	Complete revision 75) Direct suture repair 25 Other 1	103a	85a	17	N/A	N/A	N/A
Razzouk et al. (12)	Interposition tube grafts 70 Patch aortoplasty or primary repair 30	N/A	N/A	41	N/A	N/A	N/A
Sullivan et al. (2)	Repaira	N/A	N/A	29	N/A	N/A	N/A
Villavicencio et al. (13)	Graft replacement 47 Composite root 18 Direct suture 18 Patch repair 18	145 ± 72	85 ± 45	7	N/A	77	63

TAFA treatment

Every surgical intervention must be thoroughly planned to avoid TAFA rupture during resternotomy or periprocedural bleeding during the release of adhesions between the heart and the sternum. The surgical treatment options for TAFA mostly included repair with a Dacron graft, pericardial patch, or direct suture repairs. The different types of surgeries are detailed in Table 3 and vary depending on the size and location of the TAFA. The average cardiopulmonary bypass time was 104 minutes, and the average aortic clamping time was 57 minutes.

Patients with an anteriorly located TAFA close to the sternum are considered to be high-risk patients for repeated sternotomy, which entails the risk of TAFA rupture or cerebral embolism. To prevent this situation, the authors agree on different techniques such as extramediastinal cardiopulmonary bypass followed by deep hypothermic circulatory arrest, left ventricular venting, inflation of an endoclamp aortic catheter followed by retrograde cardioplegia, or approach to opening the chest (partial sternotomy, thoracotomy, clamshell incision) (5, 6, 8, 9, 11–13).

The choice of the technique also greatly depends on the surgeon's experience. If any bleeding occurs while adhesions are being released, the overall recommendation is to insert a Foley catheter inside the TAFA and inflate it to help control the bleeding (15).

It is not possible to choose one type of surgery which should be performed uniformly on every patient. The authors agree that TAFA repair or aortic replacement depends on the size of the aortic pseudoaneurysm lumen and the overall quality of the remaining aorta. If the aorta shows fragility and has a tendency to tear, a Dacron tube graft replacement should be performed. However, if the aortic tissue is healthy, patch repair with Dacron or bovine pericardium is recommended. For small TAFA lumens, primary repair is a viable solution. Despite a thorough preparation before and during surgery, in-hospital mortality is as much as 41 %.

Conservative treatment is used for patients with a small, stable TAFA, for those who are unsuitable for reoperation or endovascular repair, or those who refuse surgery. However, most studies do not report the number of patients treated conservatively (2, 5, 8–13).

All authors came to the conclusion that each patient must be discussed by a cardiac interdisciplinary team of experts and each treatment must be tailored individually (2, 5, 6, 8–13).

In-hospital mortality and survival

In-hospital mortality of surgical TAFA repair ranged between 6 % and 41 %, and survival rates after surgery reached 94 %, 79 %, and 68 % at 1, 5, and 10 years, respectively.

Factors predicting complications and mortality

The main predictors for complications of the surgical approach were established as follows: active infective endocarditis, New York Heart Association (NYHA) class III–IV, urgent