Appendix 1

Interventions

Surgery was preferred in patients with acceptable operative risk and anatomies unsuitable for transcatheter therapy, particularly in cases requiring concomitant cardiac procedures or in the presence of primary tricuspid pathology. Transcatheter tricuspid edge-to-edge repair (T-TEER) was favored in patients with high or prohibitive surgical risk and suitable leaflet anatomy, defined by adequate leaflet tissue, coaptation gap within treatable range, and absence of severe leaflet tethering or severe annular dilatation. Transcatheter tricuspid valve replacement (TTVR) was considered in patients with prohibitive surgical risk unsuitable for T-TEER due to large coaptation gaps, severe tethering, or extreme annular dilation, provided the anatomy was compatible with device specifications as assessed by CT. Low- and intermediate-risk surgical patients are managed in a post-anesthesia care unit, followed by intermediate care setting, and were not routinely admitted to the ICU. Transcatheter patients were extubated in the operating room and managed in intermediate care units, unless complications occurred.

Surgeries were performed either through median sternotomy or through right lateral mini-thoracotomy with cardiopulmonary bypass (CPB) centrally or through the femoral artery and femoral vein (surgical cutdown or percutaneous cannulation) with a flow of 2.4 L/min/m^2. The surgical technique remained roughly standardized over the years. In case of cardioplegia use, antegrade Bretschneider HTK or del Nido solution was applied. Annuloplasty or valve replacement (if repair was not possible due to insufficient valvular tissue) was done in the standard fashion after appropriate sizing. If needed, neochords to the prolapsing segment were implanted. The interrupted annuloplasty or valve sutures were either knotted or fixed with Core-Knot (after 2016, depending on surgeon's preference). Water sealing test was applied to the valve, and if competent, the right heart was filled and the atrium closed with polypropylene sutures. The patient was separated from by-pass and valve function was verified by transesophageal echocardiography. Chest and groin incisions were closed in a usual fashion. In cases of percutaneous cannulation pre-applied ProStyle suture (Abbott, Abbott Park, IL, USA) followed by Angioseal (Terumo Medical Corp., Tokyo, Japan) were utilized. Patients were transferred to the post-anesthesia care unit for postoperative ventilation and were extubated using the fast-track protocol, or transferred to the intensive care unit (ICU), if deemed high risk.

T-TEER was performed through the right femoral vein in the hybrid operating room by a team consisting of a cardiologist and a cardiac surgeon, under TEE guidance. Pre-applied ProStyle suture (Abbott, Abbott Park, IL, USA) was used for vein closure. The TriClip™ system uses a right heart-specific guide and delivery system and the 4th generation implants. The two rigid arms of cobalt-chromium alloy have flexible nitinol-based "grippers" with longitudinally arranged frictional elements [11]. The PASCAL system incorporates three operational catheters, with the device affixed to the distal end of the internal implant catheter. Device is constructed from nitinol and features two paddles equipped with retention elements and a central spacer [11]. EVOQUE Valve (Edwards Lifesciences, Irvine, CA, USA) a trileaflet bovine pericardial tissue valve housed in a nitinol frame (44-52 mm), was implanted via the femoral vein, with careful attention to the positioning and expansion of its nine anchors to ensure stability and minimize paravalvular leaks [11,18]. The LuxValve (Jenscare Scientific, Ningbo Hangzhou Bay New Area, China) was implanted through a transjugular access, employing TEE to verify the coaxial alignment of the delivery catheter within the right ventricle, subsequently deploying the atrial portion of the valve and securing the septal anchor. Each procedural stage necessitates precise imaging of the anchors to ensure accurate positioning and secure deployment of the valve prostheses [19]. All patients were discussed in a Heart Team meeting, consisting of a cardiologist, cardiac surgeon, anesthesiologist and radiologist.

References

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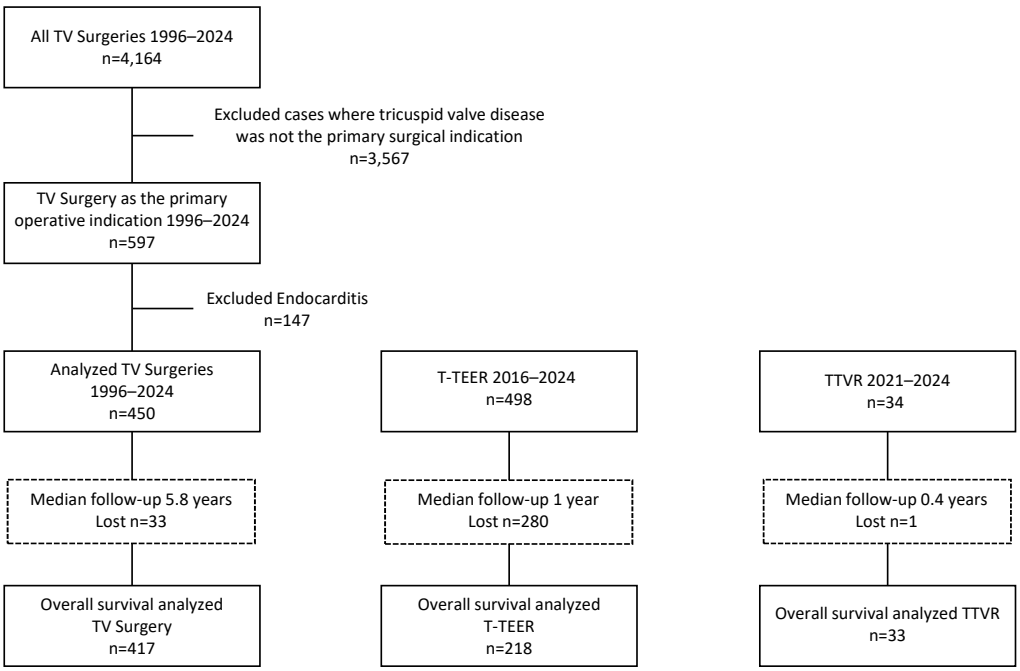

Figure S1 Study flow-chart.

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Table S1 Significant differences in baseline characteristics of T-TEER patients with and without follow-up

Variable	T-TEER patients (n=498)		
	With follow-up (n=218)	Without follow-up (n=280)	P-value
Implantable device lead in RV, n (%)	53 (24)	94 (34)	0.02
Previous cardiac surgery, n (%)	53 (24)	95 (34)	0.02
History of stroke or TIA, n (%)	12 (6)	4 (1)	0.02
Chronic lung disease, n (%)	35 (16)	70 (25)	0.02
Ascites, n (%)	18 (8)	44 (16)	0.01
Pleural effusion, n (%)	24 (11)	62 (22)	0.001
Any symptom of HF, n (%)	140 (64)	204 (73)	0.05
Baseline echocardiography			
Degree of tricuspid regurgitation			<0.001
Moderate	13 (6)	7 (3)	
Severe	144 (66)	143 (51)	
Massive	45 (20)	83 (29)	
Torrential	16 (7)	47 (17)	
Tricuspid annulus diameter (mm)	46 (42–50)	45 (41–49)	0.04
Echo sPAP (mmHg)	38 (30–48.8)	43 (35.8–55)	<0.001
Severity of mitral regurgitation			0.01
None	10 (5)	15 (5)	
Trivial	165 (75)	185 (66)	
Mild	37 (17)	76 (27)	
Moderate	6 (3)	3 (1)	
Severe	0 (0)	1 (0.4)	

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