Bicuspid Aetiology and Rapid Deployment Aortic Valve Implantation in Minimally Invasive Aortic Valve Replacement: Ballet en Pointe.

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Background and Objective

- Bicuspid aortic valve (BAV) morphology is the predominant cause of severe aortic valve stenosis in patients ≤ 70 years.
- Minimally-invasive aortic valve replacement (MIAVR) is greatly facilitated by the use of a rapid deployment stented bioprosthesis (RDSBP).
- However, BAV forms a relative contraindication for the use of these protheses due to the anatomical derangements of the aortic root and the risk of paravalvular leakage (PVL).
- Modifications of the implant technique of a RDSBP in BAV morphology can facilitate MIAVR without an increased risk for PVL.

Methods

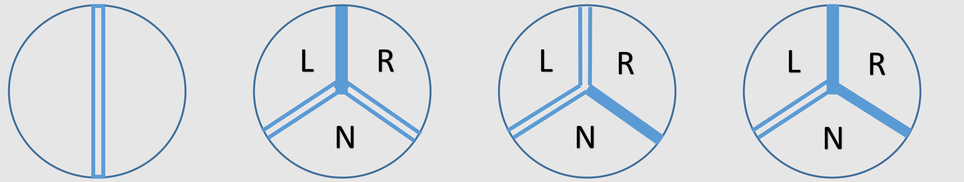
- Retrospective analysis of our single center experience with the Intuity Elite RDSBP in MIAVR for BAV morphology.
- With growing experience, additional guiding-sutures were placed depending on valve morphology.

Results

- Between May 2015 and December 2021, 32 consecutive patients were operated.
- Mean age of operated patients was 69±7 years, 69% of patients were male.
- Perioperative mild PVL occurred in one patient and increased over time, after which successful percutaneous closure was performed.
- Two patients required permanent pacemaker implantation.
- One patient had a stroke with full functional recovery.

Procedural Data

Upper hemi-sternotomy	29 (91%)
Anterior right thoracotomy	3 (9%)
Valve size	25 (23-25)
Cardiopulmonary bypass time	70 ± 18 min
Aortic cross clamping time	47 ± 11 min
Conversion	0 (0%)

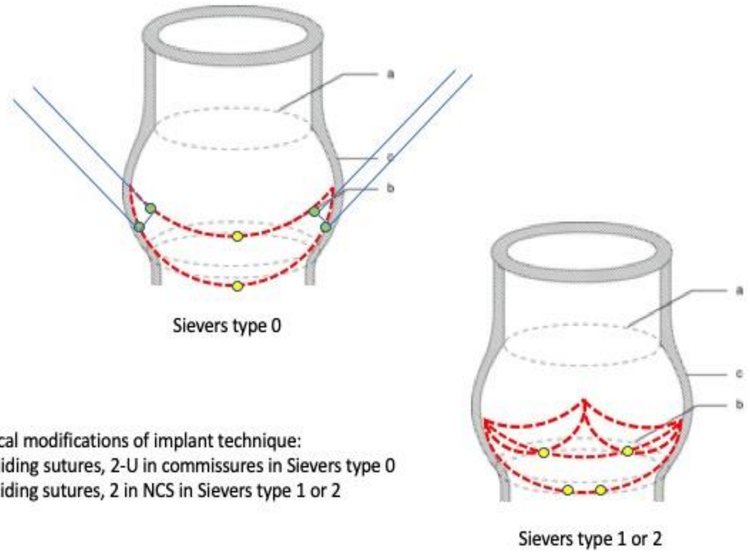


Sievers type 0
1 (3%)

Sievers type 1a
24 (75%)

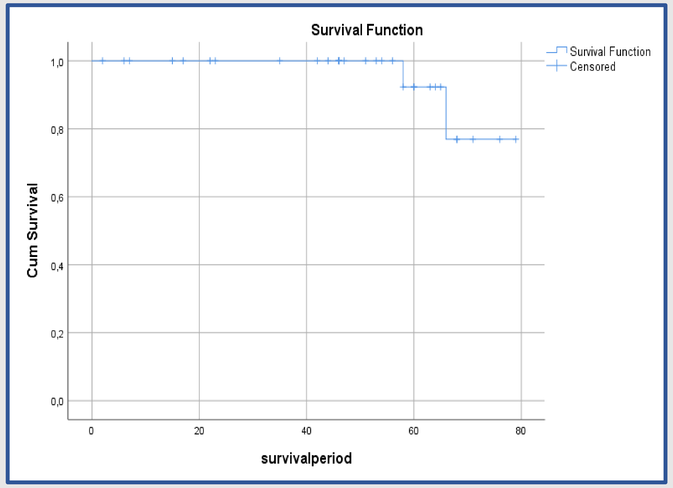
Sievers type 1b
5 (16%)

Sievers type 2
2 (6%)



Adverse Events

Hospital Mortality	0 (0%)
PVL	1 (3%)
Pacemaker	2 (6%)
Atrial fibrillation	10 (31%)



Conclusions

Small modifications of the implant technique of the Intuity Elite RDSBP can facilitate safe implantation also in BAV morphology, enabling a minimally invasive approach in these potentially challenging patients.

Disclosures

PK is a consultant and proctor for Edwards.