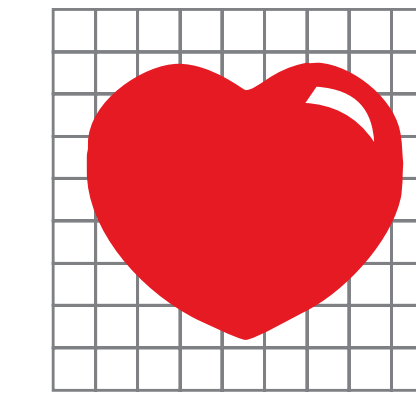


Evolving Transcatheter Aortic Valve Implantation (TAVI) - Mercy Experience 2008-2016



MERCY
ANGIOGRAPHY



AUCKLAND
HEART
GROUP

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BACKGROUND

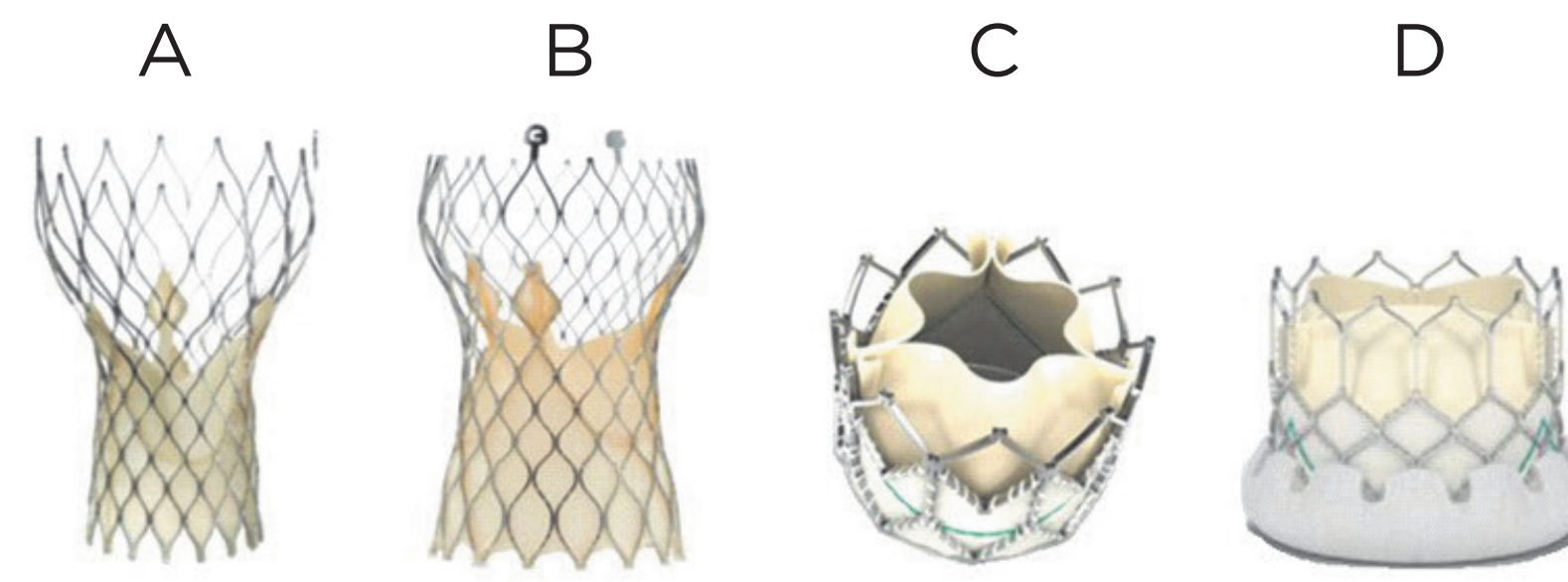
TAVI has evolved considerably since Asia Pacific's first procedure was performed at Mercy Angiography in 2008. Broadened indications, device modification, and procedural improvements have expanded the role of TAVI as the procedure of choice in high and intermediate risk patients with severe symptomatic aortic stenosis.

METHODS

We describe longitudinal practice changes over an eight year period, using 2 different prostheses, with a changing risk profile.

RESULTS

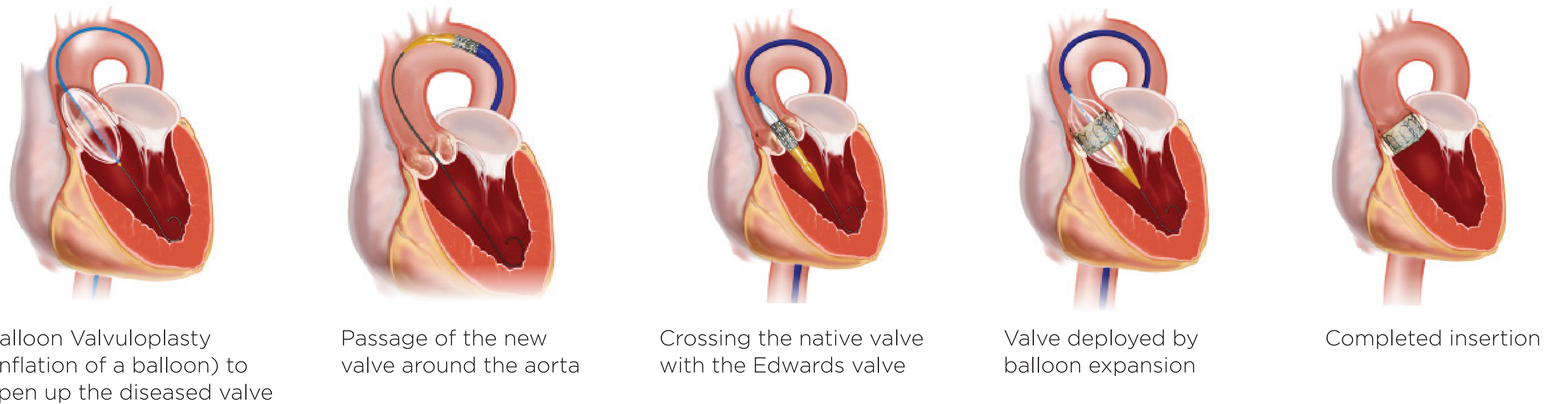
CoreValve[®] used for the first 40 patients and Edwards SAPIEN XT and SAPIEN 3 since 2010 (31 patients). Procedural and 30-day complications are low. No conversion to open heart surgery has occurred. Pacemaker requirement is much lower in the Edwards group. A lower risk cohort now treated, and local anaesthesia and sedation has superseded general.



A: MedtronicCoreValve
B: Medtronic CoreValve Evolut R
C: Edwards SAPIEN XT
D: Edwards SAPIEN 3

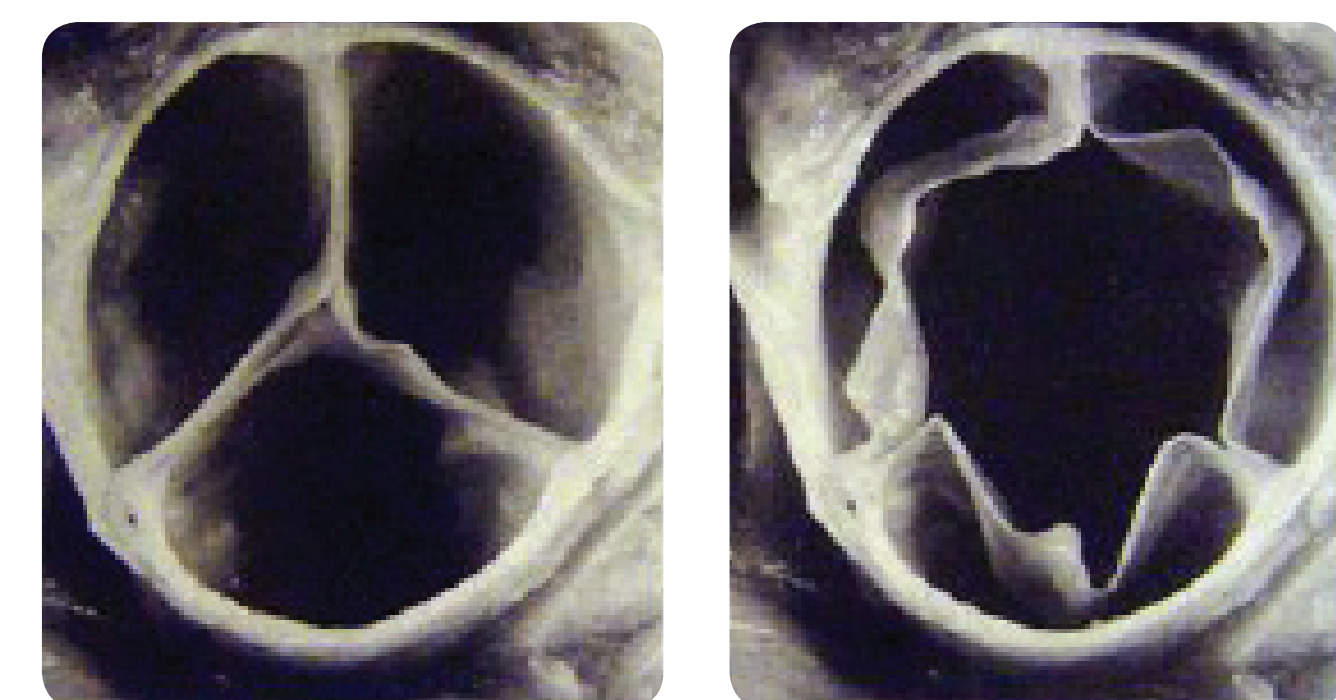
Severe aortic stenosis due to marked thickening and calcification, with immobility of the leaflets.

Deployment of the Transcatheter Aortic Valve

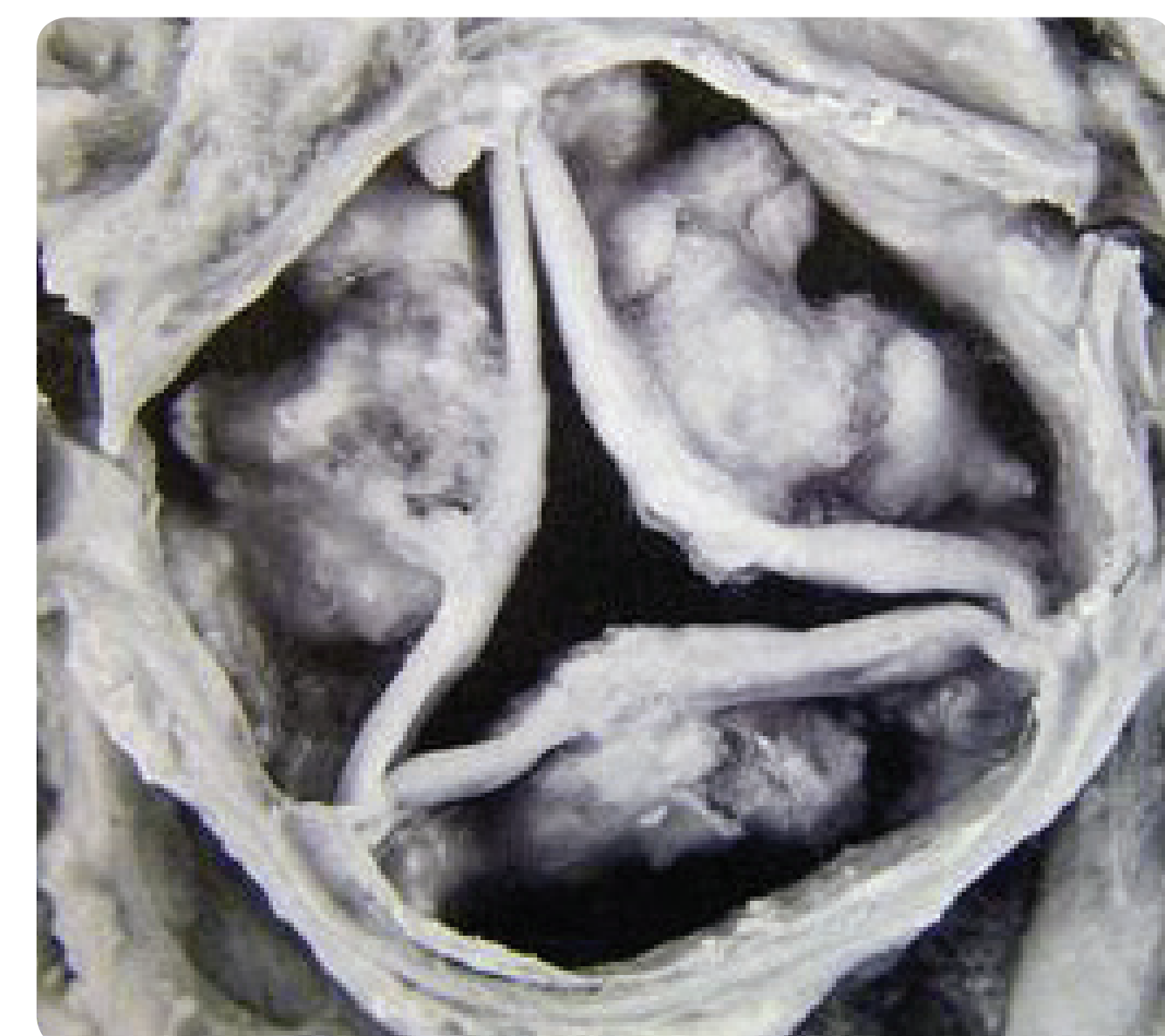


OUTCOME FOLLOWING TAVI IN COREVALVE AND EDWARDS PATIENTS

	CoreValve	Edwards
Patients, n	40	34
Age, mean (range)	85.2 (44-96)	83.1 (67-95)
Male/female	25/15	23/11
Euroscore,% mean (range)	22.2 (7.4-52.3)	10.86 (0.88-41.2)
Symptoms, class III and IV	37 (93%)	19 (55%)
Ejection fraction <50%	12 (30%)	8 (23%)
Aortic Valve Area, cm ² (SD)	0.7 (0.4-1.3)	0.8 (0.4-1.3)
Peak gradient mmHg (SD)	80 (38-132)	75 (43-122)
Mean gradient mmHg (SD)	49 (23-85)	45 (28-75)
General anaesthesia	40/40	26/34
Procedural duration, mins	80 (49-122)	74 (43-169)
Conversion to cardiac surgery	0	0
Peripheral vascular surgery	0	4 (11%)
Pacemaker	11/40 (27%)	1/34
Stroke/TIA	1/40 (0.2%)	0/34
Death procedural	1	0
In hospital	1	1
AR post TAVI		
None or gr I	20 (51%)	29 (85%)
gr II	14 (36%)	5 (14%)
gr III	5 (13%)	0
Hospital stay, days	7.2 (4-23)	5.7 (2-23)
5 year actuarial survival	44%	60%



Normal aortic valve with thin supple leaflets.



In calcific aortic stenosis, leaflets are thick and rigid. They do not open properly.

CONCLUSION

Our results are consistent with international standards: TAVI was performed with good acute results and few major complications. The risk of procedural death or stroke is very low and pacemaker need and aortic regurgitation grade have decreased. Other drivers of cost, eg procedural time and length of stay are reducing and intermediate risk patients are now recruited.

References

1. Thourani VH et al, Transcatheter aortic valve replacement versus surgical valve replacement in intermediate-risk patients: a propensity score analysis, Lancet April 03 2016
2. Leon MB et al, Transcatheter or Surgical Aortic-Valve Replacement in Intermediate-Risk Patients, N Engl J Med 2016; 374:1609-1620
3. Reardon MJ et al, 2-Year Outcomes in Patients Undergoing Surgical or Self-Expanding Transcatheter Aortic Valve Replacement, J Am Coll Cardiol 2015; 66:113-21

SURVIVAL CURVE

