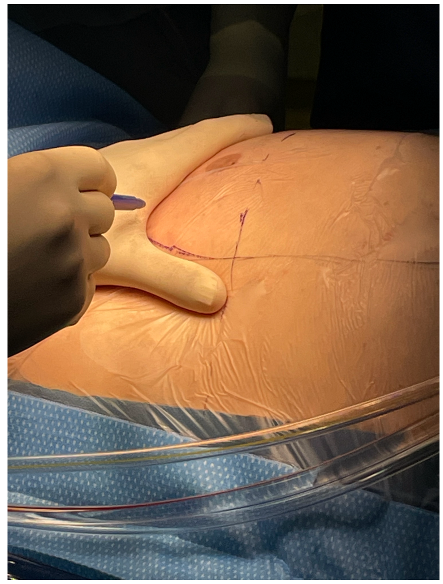
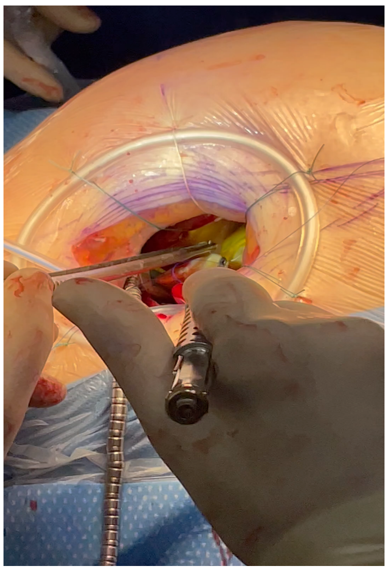
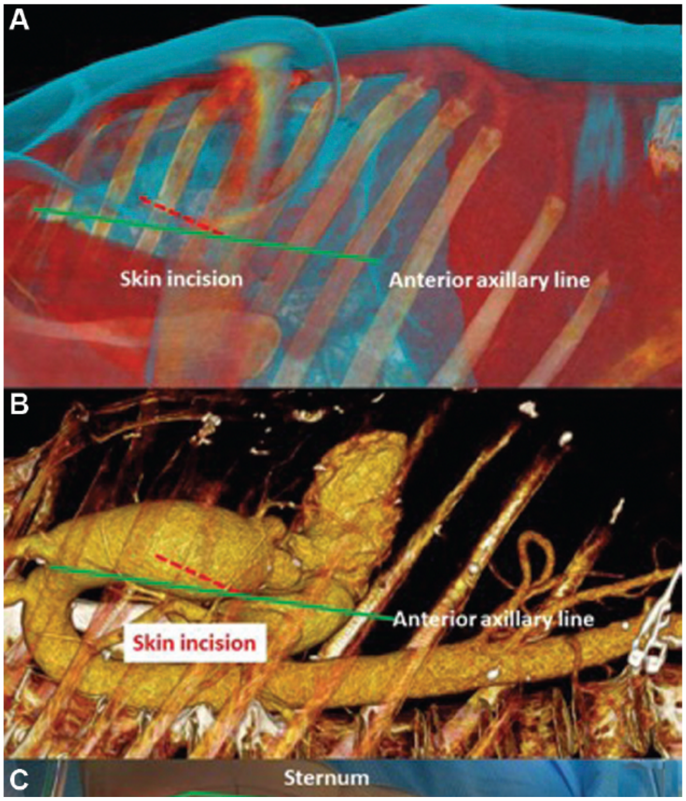
TransAxillary Minimal Access AVR





Mr ADRIAN PICK

A Major Advance in minimal access surgery for patients with aortic valve disease



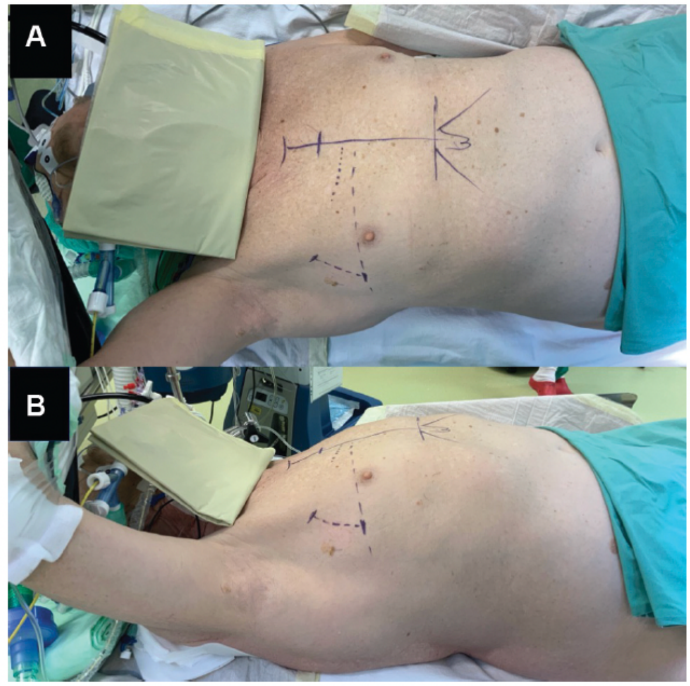


Fig. 2 Markups and anatomical landmarks in (A) frontal and (B) side views for the access in a male patient; skin incision is marked in the right anterior axillary line.

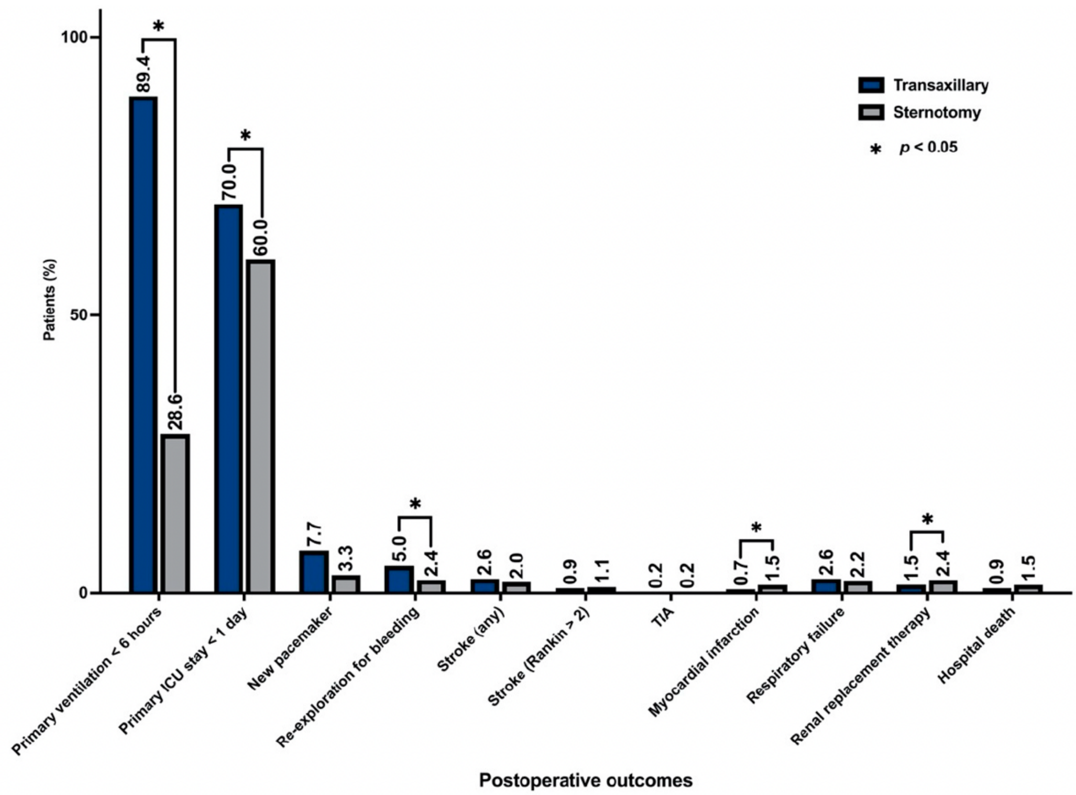
ADVANTAGES

Article

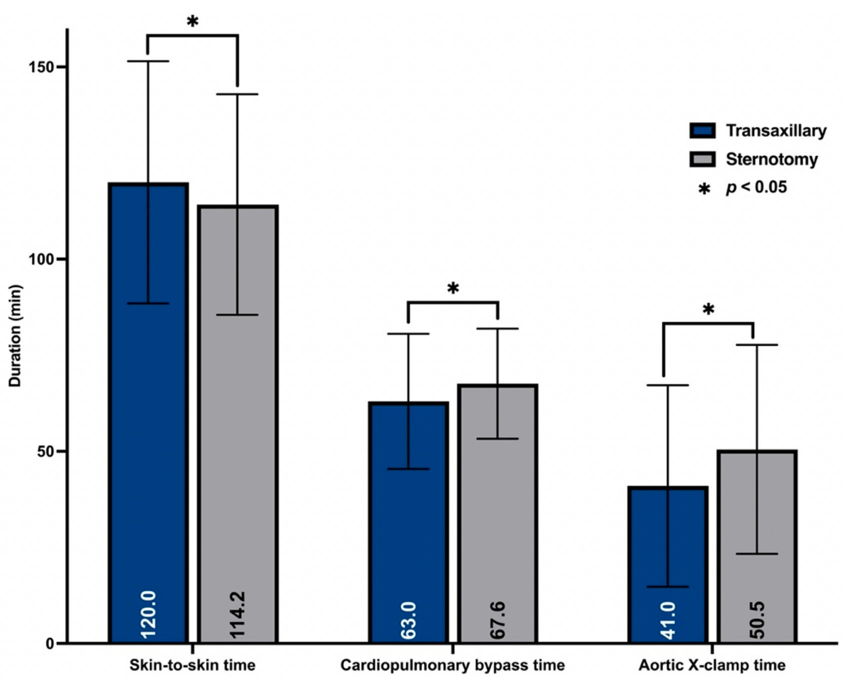
Safety and Efficacy of the Transaxillary Access for Minimally Invasive Aortic Valve Surgery

Manuel Wilbring [1,*,†], Konstantin Alexiou [1,†], Torsten Schmidt [2], Asen Petrov [1], Ali Taghizadeh-Waghefi [1], Efstratios Charitos [3], Klaus Matschke [1], Sebastian Arzt [1,‡] and Utz Kappert [1,‡]

1 Center for Minimally Invasive Cardiac Surgery, University Heart Center Dresden, 01307 Dresden, Germany
2 Department of Cardiac Anesthesiology, University Heart Center Dresden, 01307 Dresden, Germany
3 Department of Cardiac Surgery, Kerckhoff Heart Center, 61231 Bad Nauheim, Germany



Fewer postoperative transfusions, shorter ventilation times, and shorter ICU stays, translating into shorter hospital stays.



Equivalence to sternotomy with respect to procedural times. Savings in Bypass and Cross Clamp Times with use of Sutureless rapid deployment valves.

Observational Study > Innovations (Phila). 2023 Nov-Dec;18(6):547-556.
doi: 10.1177/15569845231205587. Epub 2023 Nov 7.

Minimally Invasive Surgical Versus Transcatheter Aortic Valve Replacement: A Retrospective Observational Single-Center Study in Japan

Hiroyuki Yamamoto [1], Taisuke Nakayama [2], Naoki Ishii [3], Yoshitsugu Nakamura [2]

Affiliations + expand

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Abstract

Objective: This study aimed to compare the outcomes of minimally invasive aortic valve replacement (MICS-AVR) versus transfemoral transcatheter aortic valve replacement (TF-TAVR) in Asian patients.

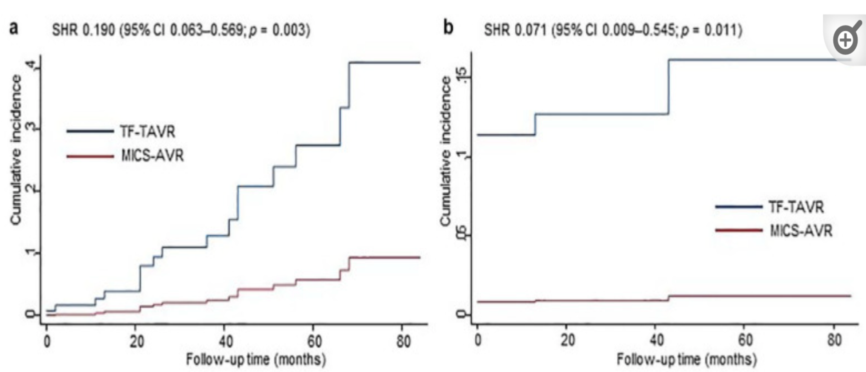
Methods: We conducted a retrospective, observational, single-center study in Japan, including cases of MICS-AVR (n = 202) and TF-TAVR (n = 248) between 2014 and 2021. In a total of 450 cases, propensity score matching was performed at a ratio of 1:1, resulting in 96 pairs. Furthermore, we performed competing-risk regression and mediation analyses to determine the treatment effect on outcomes of interests, considering death as a competing risk, and to evaluate the mediation effect of paravalvular leak (PVL) severity.

Results: There were similar incidences of all-cause death, cardiac death, stroke and cerebral hemorrhage, and aortic valve reintervention between the 2 groups. However, the TF-TAVR cohort had a longer hospital length of stay and higher rates of significant PVL compared with the MICS-AVR cohort. Multivariable-adjusted Cox regression analyses revealed that heart failure hospitalization (hazard ratio [HR] = 0.129, 95% confidence interval [CI]: 0.038 to 0.445, p = 0.001) and permanent pacemaker implantation (HR = 0.050, 95% CI: 0.006 to 0.409, p = 0.005) favored MICS-AVR. Competing-risk regression analyses confirmed similar findings. All outcomes were unrelated to PVL severity.

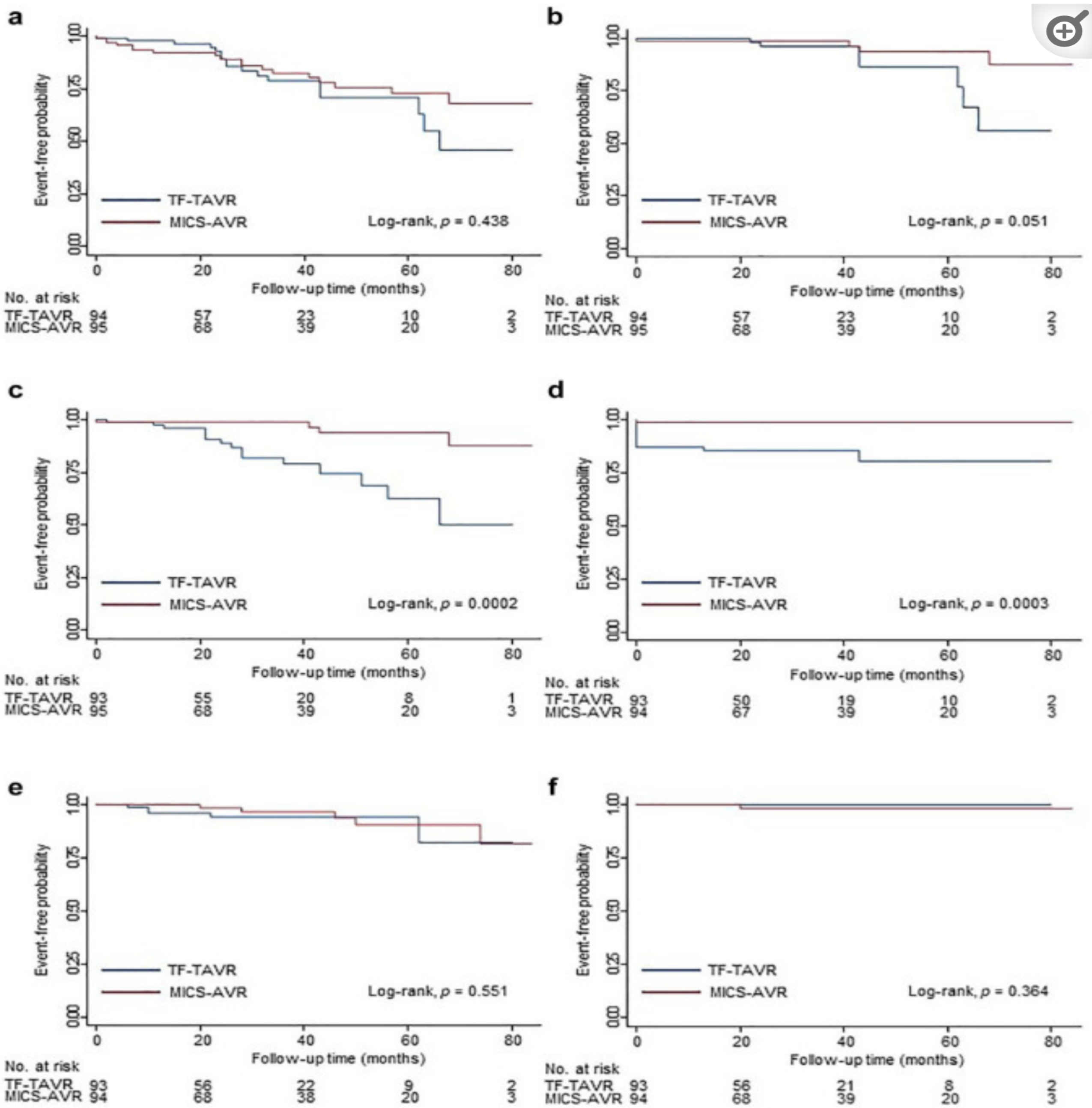
Conclusions: To our knowledge, this is the first comparative study of clinical outcomes in Asian patients undergoing MICS-AVR versus TF-TAVR, revealing that MICS-AVR could be a feasible and efficient alternative to TF-TAVR. Future larger-scale randomized controlled trials are needed to validate the present results.

Keywords: Japan; heart failure hospitalization; minimally invasive aortic valve replacement; permanent pacemaker implantation; transfemoral transcatheter aortic valve replacement.

Fig. 2.



Competing-risk regression of (a) heart failure hospitalization and (b) PPM implantation after treatment. Patients undergoing TF-TAVR were more likely to develop heart failure hospitalization and require postprocedural PPM implantation. CI, confidence interval; MICS-AVR, minimally invasive aortic valve replacement; SHR, subdistribution hazard ratio; PPM, permanent pacemaker; TF-TAVR, transfemoral transcatheter aortic valve replacement.



Kaplan–Meier survival curves for clinical outcomes in propensity score-matched patients treated with MICS-AVR versus TF-TAVR. (a) All-cause death, (b) cardiac death, (c) heart failure hospitalization, (d) PPM implantation after treatment, (e) stroke or cerebral hemorrhage, and (f) aortic valve reintervention. The *p* values were calculated using Cox proportional hazards models. The numbers of participants at risk are below the horizontal axis. MICS-AVR, minimally invasive aortic valve replacement; PPM, permanent pacemaker; TF-TAVR, transfemoral transcatheter aortic valve replacement.

- Suitable for all patients
- Advantages in patients with increased body mass index
- Less post operative pain
- Faster recovery and return to full activity
- Superior cosmetic result
- No risk of sternal complications
- Ideal for double valve (Mitral +/- Tricuspid)
- Less PVL and pacemaker requirement Compared to TAVI
- Less repeat hospitalization compared to TAVI
- Non-Inferiority With respect to Mortality Compared to TAVI

MR ADRIAN W PICK

Suite 25 Cabrini Medical Centre

177 Wattletree road Malvern 3144

Suite 14 Peninsula Private Hospital

525 McLelland Drive Langwarrin 3910

Email apick@ctsurg.com.au

Website www.adrianpick.com.au

Phone 95099577

Fax 95002221

Day 1 post op