Failed TAVR: Results from Surgical Explants

Vinod H. Thourani, MD

Bernie Marcus Chair, Department of Cardiovascular Surgery
Marcus Valve and Heart and Vascular Center
Piedmont Heart Institute
Atlanta, GA

NY
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Disclosures

• Abbott Vascular:
  – National Co-PI: SUMMIT MAC trial
  – Steering Comm: Trilumminate trial

• Boston Scientific:
  – Advisor

• Cryolife:
  – Steering Comm: PROACT Xa trial

• Gore Vascular:
  – Advisor
  – Steering Comm: SOAR trial

• JenaValve:
  – National Co-PI: JenaValve AR trial

• Edwards Lifesciences
  – National Co-PI: PASCAL 2F
  – National PI: RESTORE Harpoon Trial
  – Executive Committee: PARTNER 3 trial

• STS/ACC TVT Database
  – Co-Chair
High Risk TAVR Valve Removal

82y male, bioprosthetic infective endocarditis with aortic pseudo-aneurysm

- 29mm self-expanding valve placed 2y prior for AS (high-risk)

- Represented with infective endocarditis (dental source)

Extubated POD #2 and discharged (POD#7)
Low-Risk Patient TAVR

- 58 yo with bicuspid AV and ascending aorta of 3.5 cm, EF 60%, and STS PROM 0.5% underwent TAVR in March 2017.
- Had intraoperative PVR and immediate TAVR valve-in-valve and discharged with mild-to-moderate PVR.
- Over last 2 years, severe PVR and now presents with EF 25% and NYHA class IV and ascending aorta 3.8cm.
Low-Risk Patient TAVR

Aortic crossclamp: 55 mins
CPB time: 62 mins
25mm Inspiris valve implanted
Extubated POD #1, on telemetry POD#3, and discharged (POD#5)
Surgical explantation of transcatheter aortic bioprostheses: Results and clinical implications

Shinichi Fukuhara, MD, Alexander A. Brescia, MD, MSc, Suzuna Shiomi, BS, Carlo M. Rosati, MD, Bo Yang, MD, Karen M. Kim, MD, MSc, and G. Michael Deeb, MD

- **Michigan Database:**
  - 1,442 TAVR, explant rate 1.0% (N=15)
  - Mean Age 73 years, STS score 9.9%
- **Indications**
  - PVR 41.2%
  - TAVR complications 23.5%
  - SVD 23.5%
  - endocarditis 5.9%
- 11.8% in-hospital mortality
SAVR after TAVR: STS Database

- **Median time to explant:** 2.5 months (0.7-13)
- **Indications:**
  - PVR 15%
  - SVD 11%
  - Sizing/position issue 11%
  - Endocarditis 10%
- **Operative mortality** 17.1%
Outcomes of Surgical Explantation of TAVR–A Population-Based, Nationally-Representative Analysis


Hirji SA, et al. JACC 2020;76:1848-1959
SAVR after TAVR: CMS

Incidence, Characteristics, Predictors, and Outcomes of Surgical Explantation After Transcatheter Aortic Valve Replacement – A Population-Based, Nationally Representative Analysis

N=132,515

Mean age 73.7 years

Endocarditis, (%) 47 (20.7)
Bioprosthetic valve failure, (%) 180 (79.3)

Hirji SA, et al. JACC 2020;76:1848-1959
Surgical EXPLANTation After TAVR Failure: Midterm Outcomes from the EXPLANT-TAVR International Registry


on behalf of the EXPLANT-TAVR investigators
SAVR after TAVR: EXPLANT Registry

Key Findings

- Mean patient’s age was 72 years
- At index TAVR, mean STS risk score was 4.8% and 28.0% of patients were deemed low surgical risk
- Unfavorable anatomy for redo-TAVR was present in 19.1% of cases
- Median time to surgical explant was 12.9 months (IQR: 5.1-35.3 months)

Indications for explant include:
- Endocarditis 41.4%
- Structural valve degeneration 23.6%
- Paravalvular leak 15.9%
- Prosthesis-patient mismatch 7.3%
- Valve migration 3.2%
- Other 8.7%
SAVR after TAVR: EXPLANT Registry

Key Findings

- Root replacement (BE 37.5%, S/ME 62.5%) was performed in 14.4% of cases, and 48.0% involved concomitant cardiac procedures.

- Procedural mortality 0.9%, in-hospital mortality 10.8%.
  - Complications included atrial fibrillation (10.1%), new pacemaker (13.9%), major bleed (12.6%) and acute renal failure (8.1%).

- 30-day outcomes:
  - 12.0% mortality, 5.8% stroke, 13.1% readmission.

- 1-year outcomes:
  - 28.6% mortality, 10.1% stroke.
SAVR after TAVR: EXPLANT Registry
Conclusions

• With the increase of TAVR in younger patients with bioprosthetic valves, it is expected for patients to return for re-intervention.

• Decisions for SAVR-after-TAVR or TAVR-in-TAVR will become important decisions for the heart team.

• Patients with endocarditis and severe PVR will be absolute indications for SAVR-after-TAVR; while SVD will be relative indications.
Grateful Patient

Stents are for wimps

Real men have bypass surgery
Thank You!!
Vinod.Thourani@piedmont.org