

BACKGROUND

- **Trans-septal valve-in-valve transcatheter mitral valve replacement (TMVR)** is a safe intervention for **severely, comorbid patients**, with a history of **open-sternotomy**.
- However, **TMVR** can be compromised in patients with **complicated anatomy**, such as a **hypertrophied interatrial septum (IAS)**.
- In this experience, a **73-year-old woman** with **comorbidities**, a history of **open-sternotomy**, and a **hypertrophied IAS** underwent **trans-septal valve-in-valve TMVR** with a **22 mm interatrial balloon catheter** and a **65 cm extended valve delivery system**.

METHODS

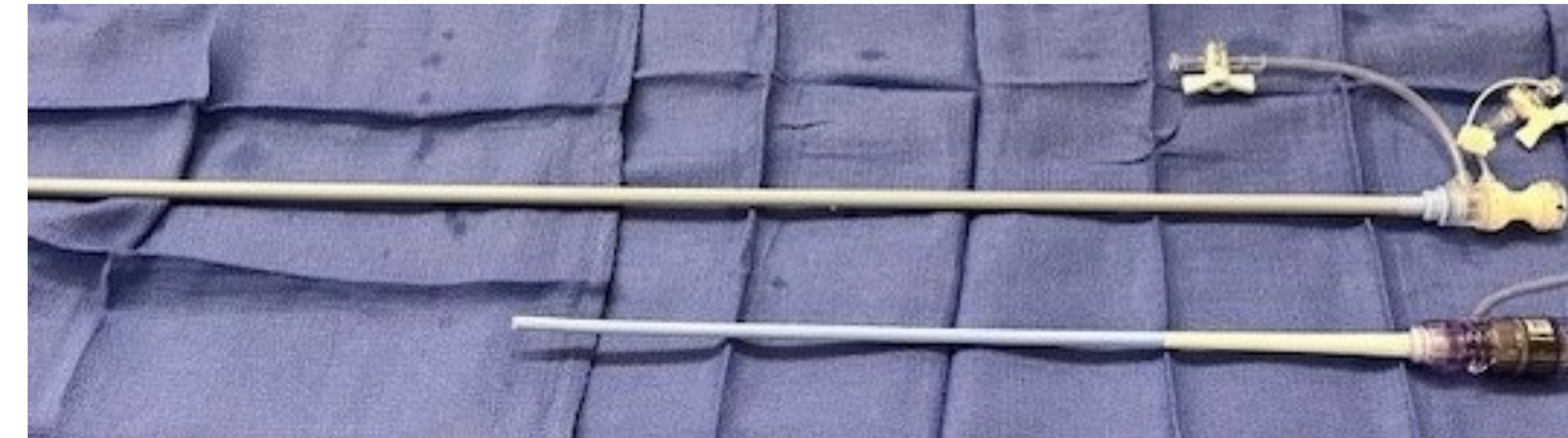
- The patient presented to clinic with a **degenerated bioprosthetic MV**, with **severe stenosis** and **insufficiency**, in addition to a **hypertrophied IAS**.
- Due to her **comorbidities** and history of **open sternotomy**, the surgical team deemed her as a candidate for percutaneous **trans-septal valve-in-valve TMVR**.
- The procedure was performed in a **hybrid operating room**, where the **heart team** used **common femoral vein access** to puncture the **IAS**. This **technique** aids in delivery of the **SAPIEN 3 transcatheter heart valve system** (Edwards LifeSciences Corp., Irvine, CA, USA).
- However, the **thickness** of the **IAS** made attempts at delivering the **replacement MV** through the **IAS** unsuccessful. Traditional technique requires **insertion** of a **14 Fr delivery sheath** and **septostomy** with a **16 mm balloon**.
- Alternatively, the **heart team** dilated the **IAS** with a **larger 22 mm balloon catheter** and used a **65 cm extended valve delivery system** to deliver the **replacement valve**.

RESULTS

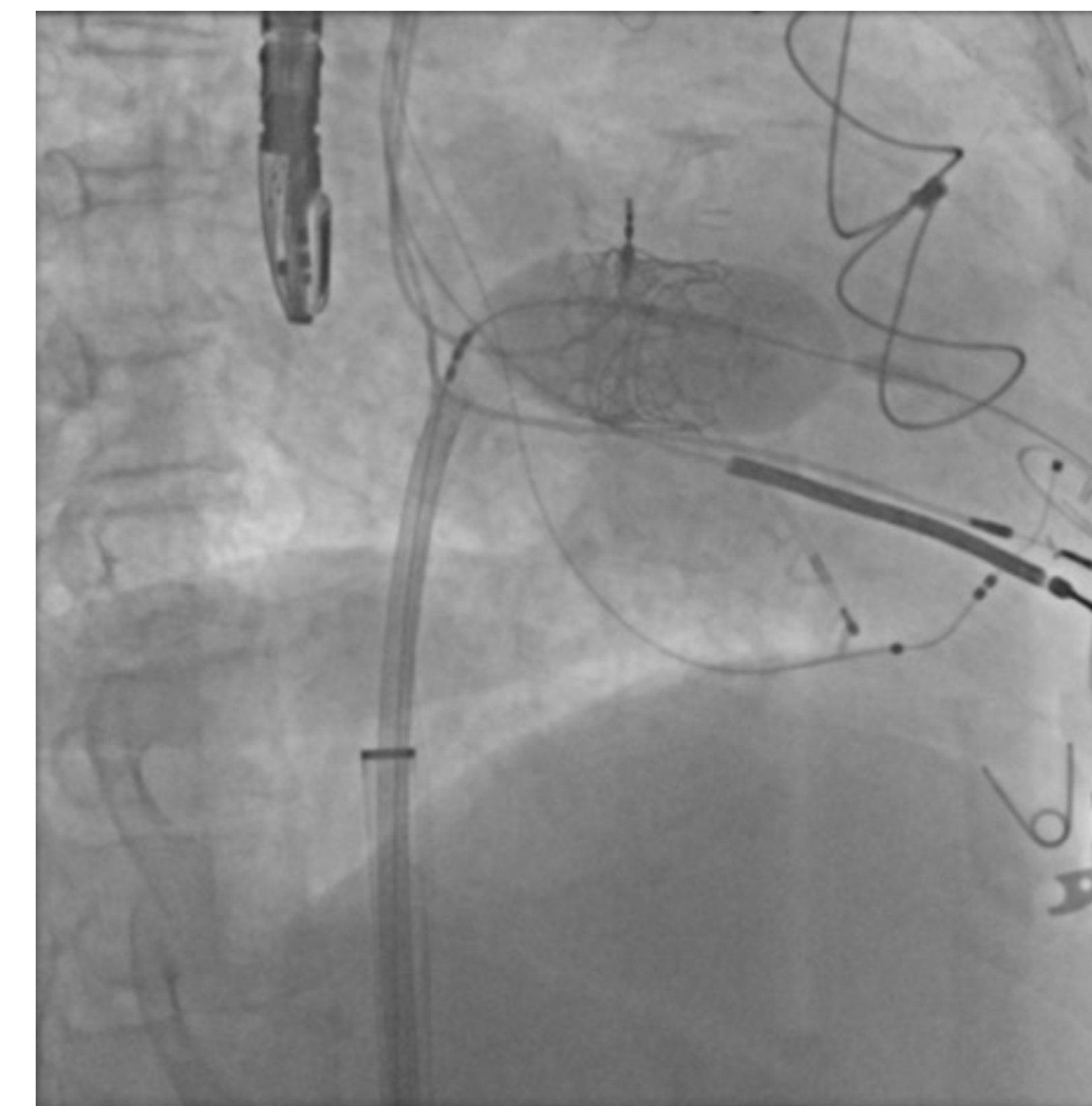
- The patient tolerated the TMVR **well**, in which a post-operative **transesophageal echocardiography** showed a **well-seated valve** with **no evidence of paravalvular leak**, **MV stenosis**, or **MV insufficiency**. She was discharged in **stable condition** on a beta blocker.
- **One month later**, an echo showed **minimal mitral valve insufficiency**, with **no evidence of paravalvular leak** or **MV stenosis**.

CONCLUSIONS

- Performing **trans-septal valve-in-valve TMVR** via dilating the **IAS** with a **larger balloon catheter** and using an **extended valve delivery system** is **safe** in **severely, comorbid patients** with **complicated septal anatomy**.
- **Implementing** this technique may allow **life-saving surgical access** for **high-risk patients**.



Side-by-side comparison of the extended valve delivery (top) and the standard delivery sheath (bottom). The extended valve delivery sheath is generally used for pulmonary valve deliveries and aortic stent graft deliveries for tortuous aortas.



Dilation of the interatrial septum with a 22 mm balloon catheter.

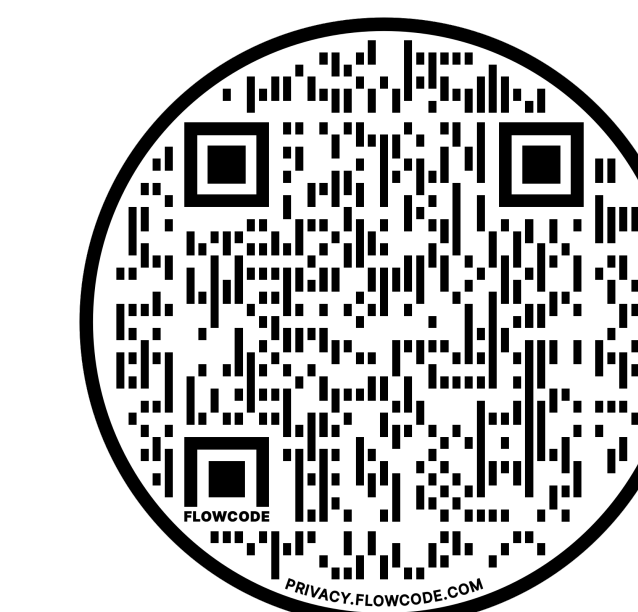


Well-seated mitral valve with no evidence of paravalvular leak or valve insufficiency.

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Presentation