



Guide catheter delamination during left main stenting after TAVI

Xavier Armario

Galway University Hospital, Galway, Ireland

 @xarmario

83-year-old male.

Medical history

Arterial hypertension.

Diabetes mellitus.

Hypercholesterolemia.

Stroke and carotid endarterectomy.

Cardiological history

Paroxysmal atrial fibrillation.

Prior PCI to the RCA.

Prior TAVI with a 29mm Evolut PRO.

Clinical presentation

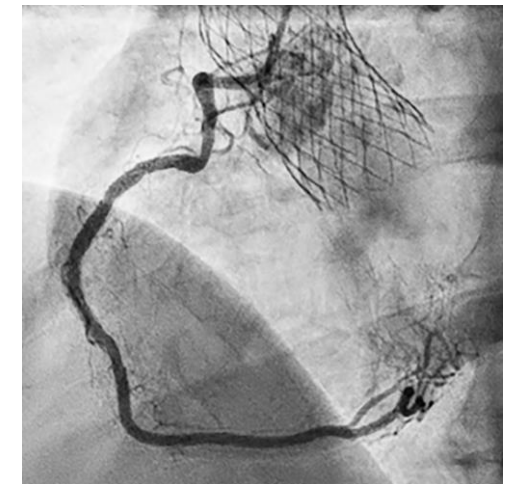
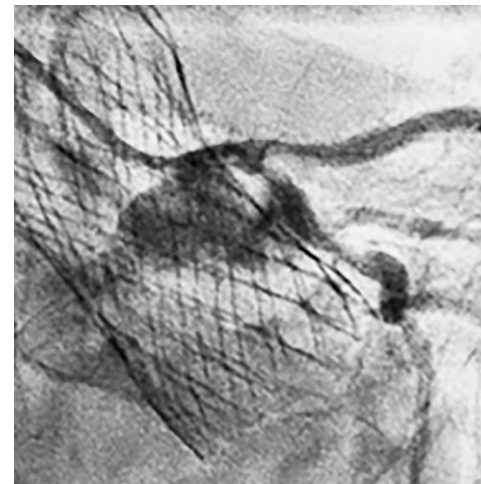
Unstable angina.

Echocardiography

Normal aortic valve function.

Coronariography

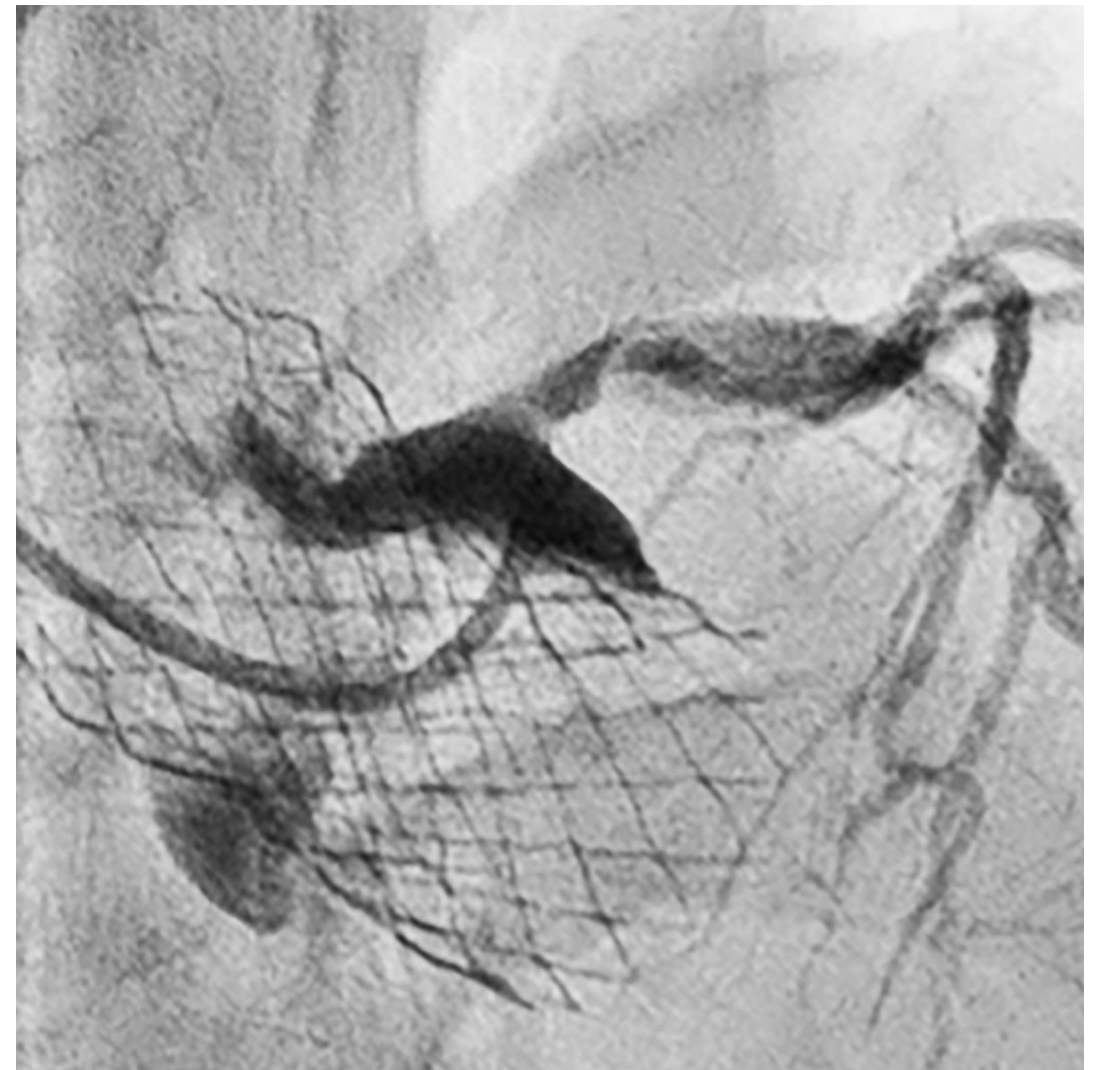
Significant coronary artery disease in the ostial LAD and ostial LCX (Medina 0-1-1).



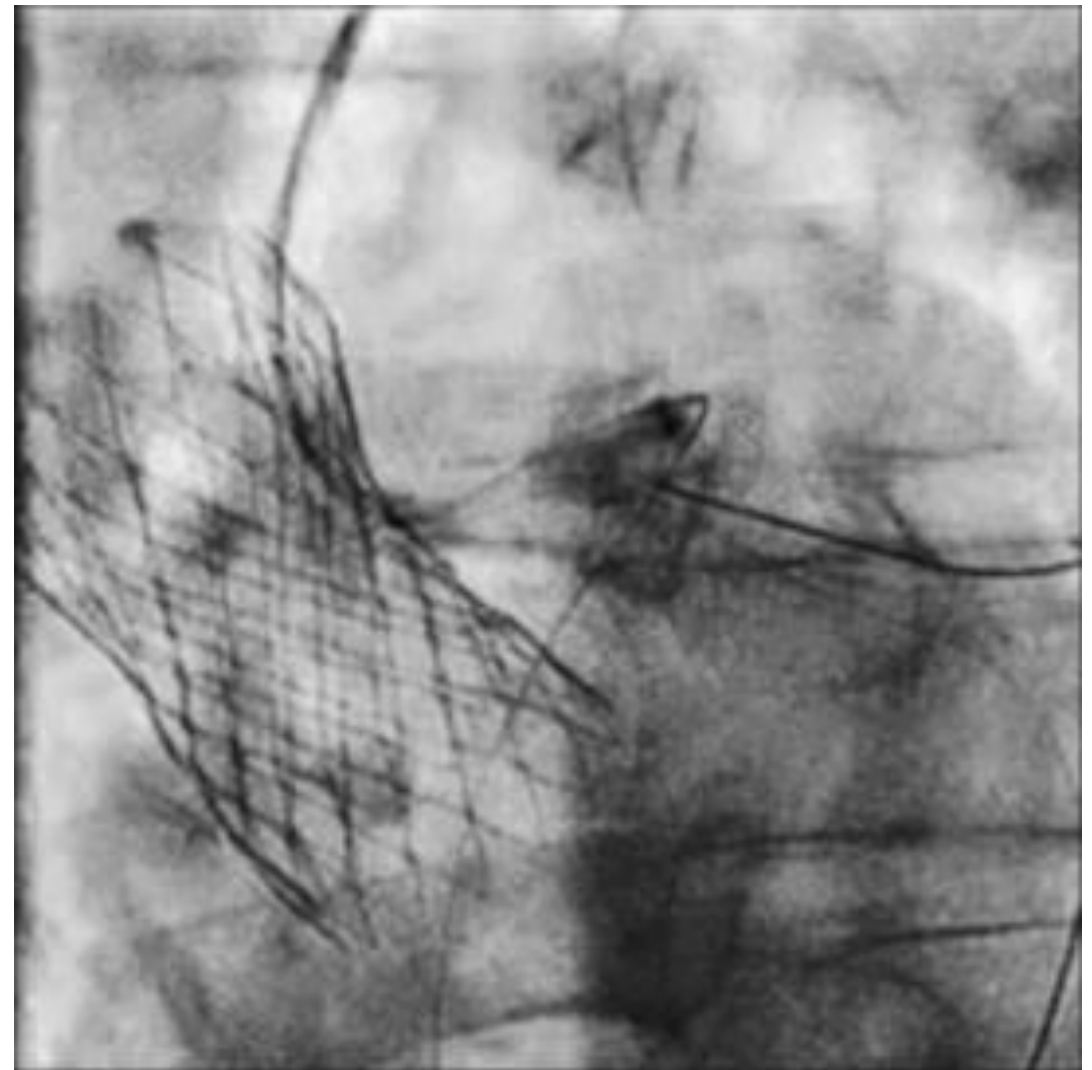
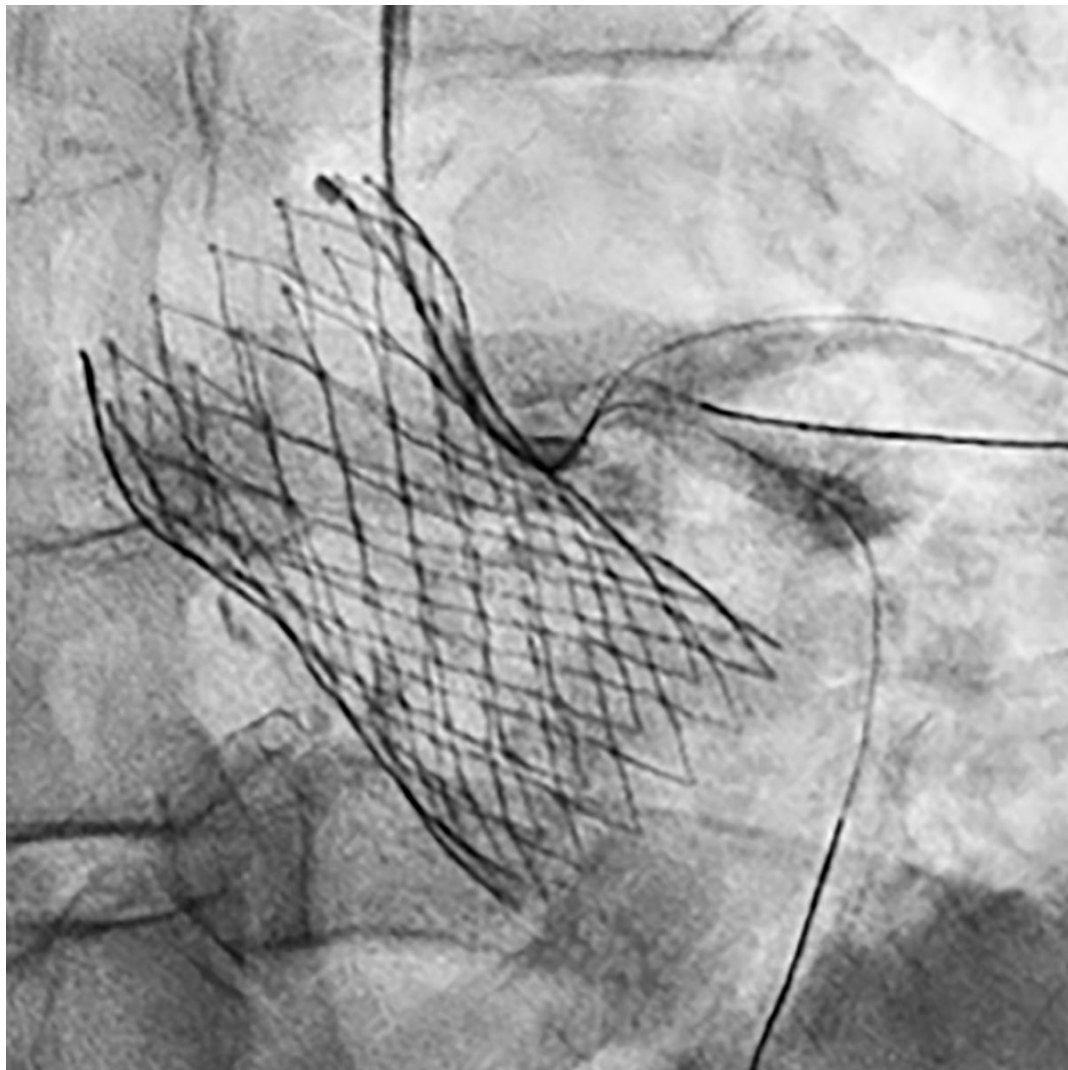
Heart Team

IVUS-guided PCI to LM-LAD-LCX.

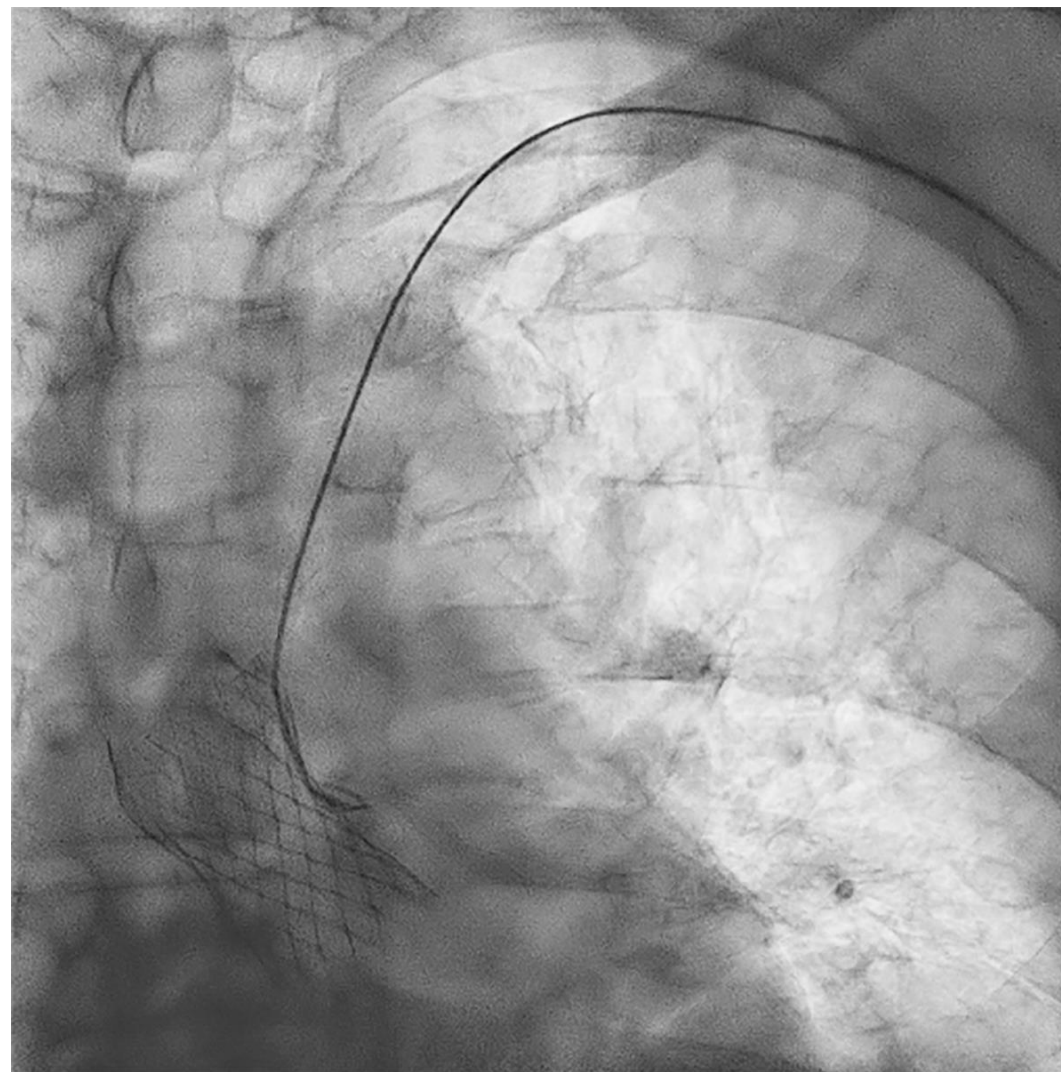
Guide catheter engaging via the **THV cell directly opposite the LM** not possible.
A 7-F JL4 guide catheter positioned via the **THV cell below the LM** successfully.



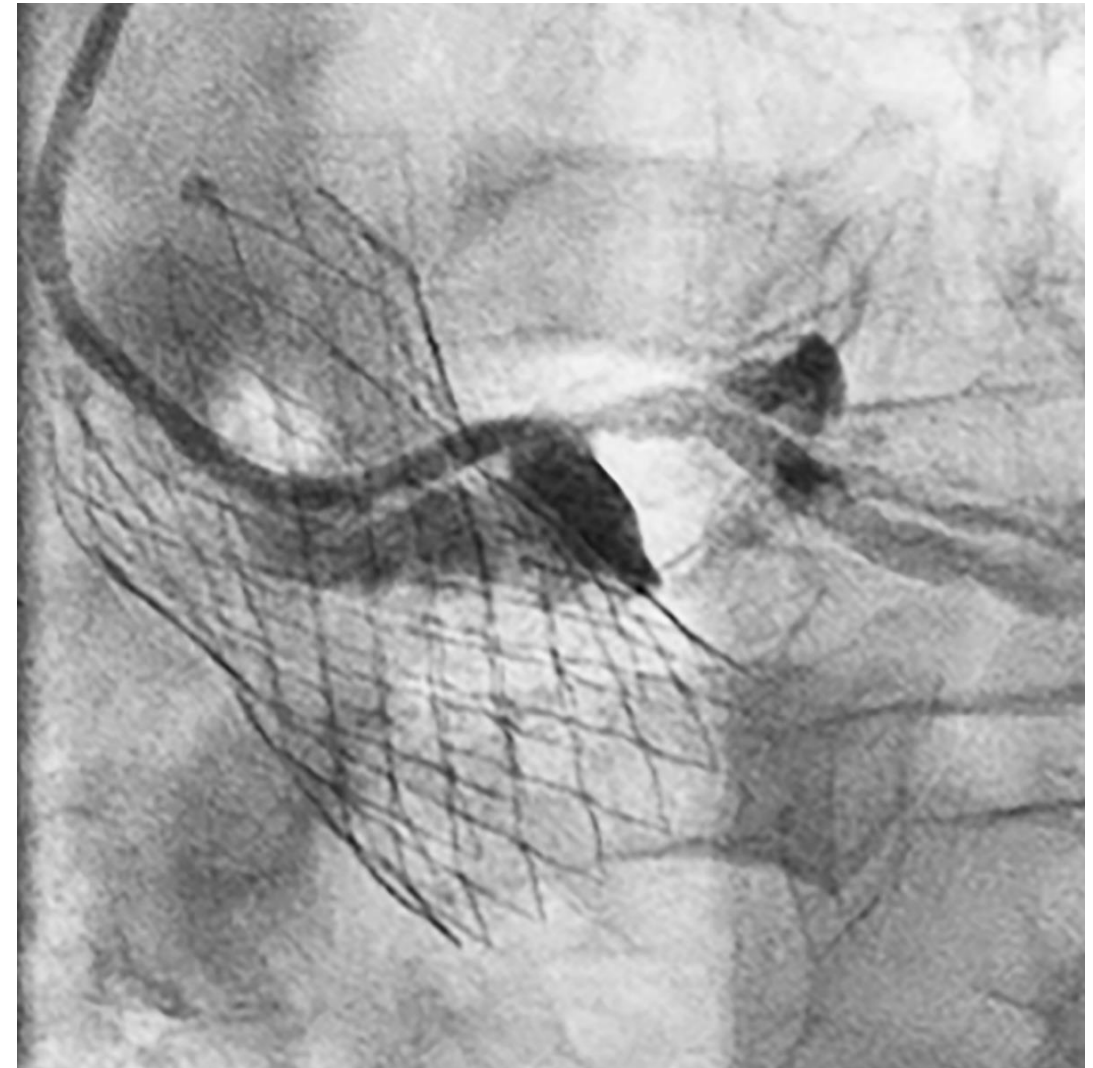
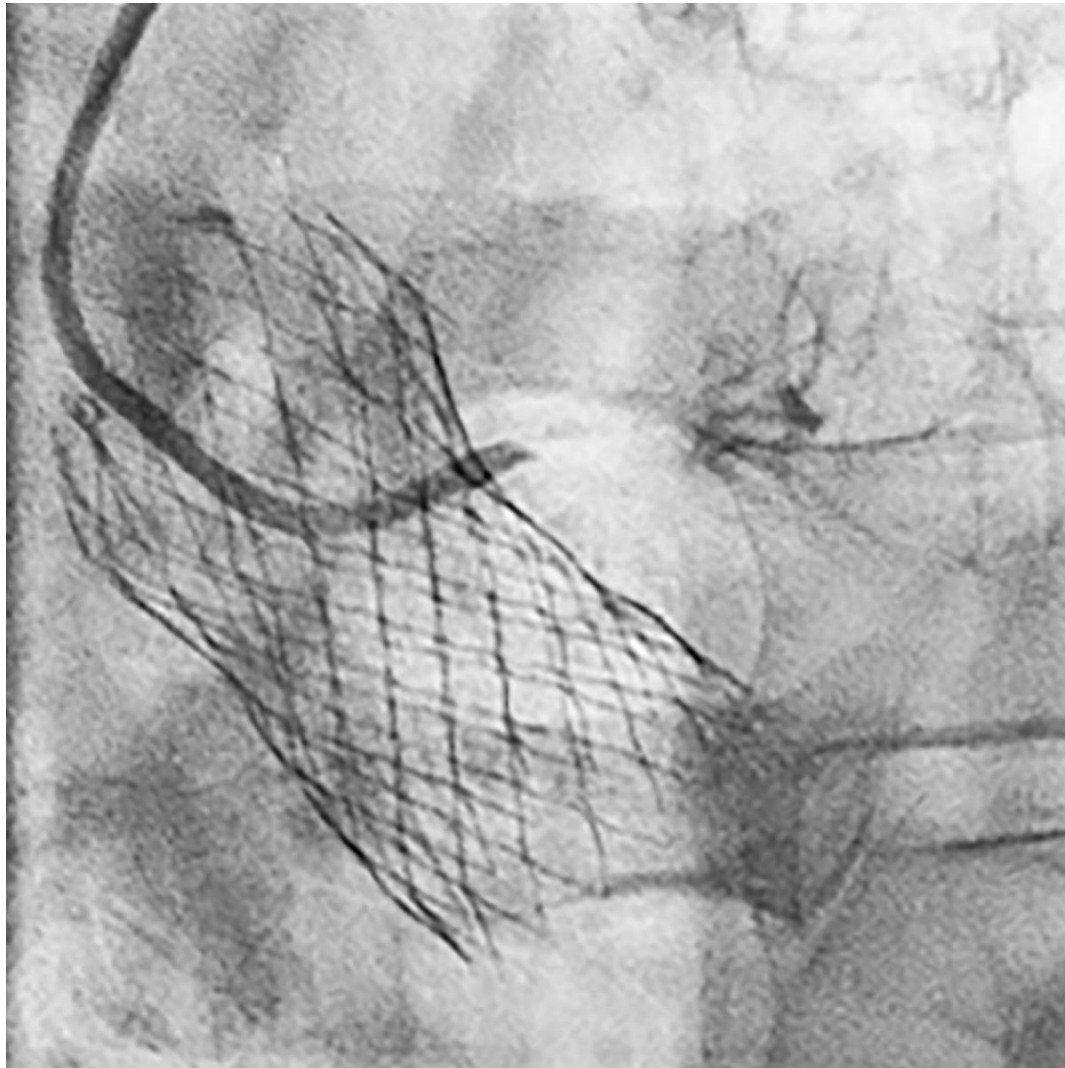
Guide catheter trapped on the THV struts. **Guide catheter and guide wire manipulation** unsuccessful in releasing the guide catheter.



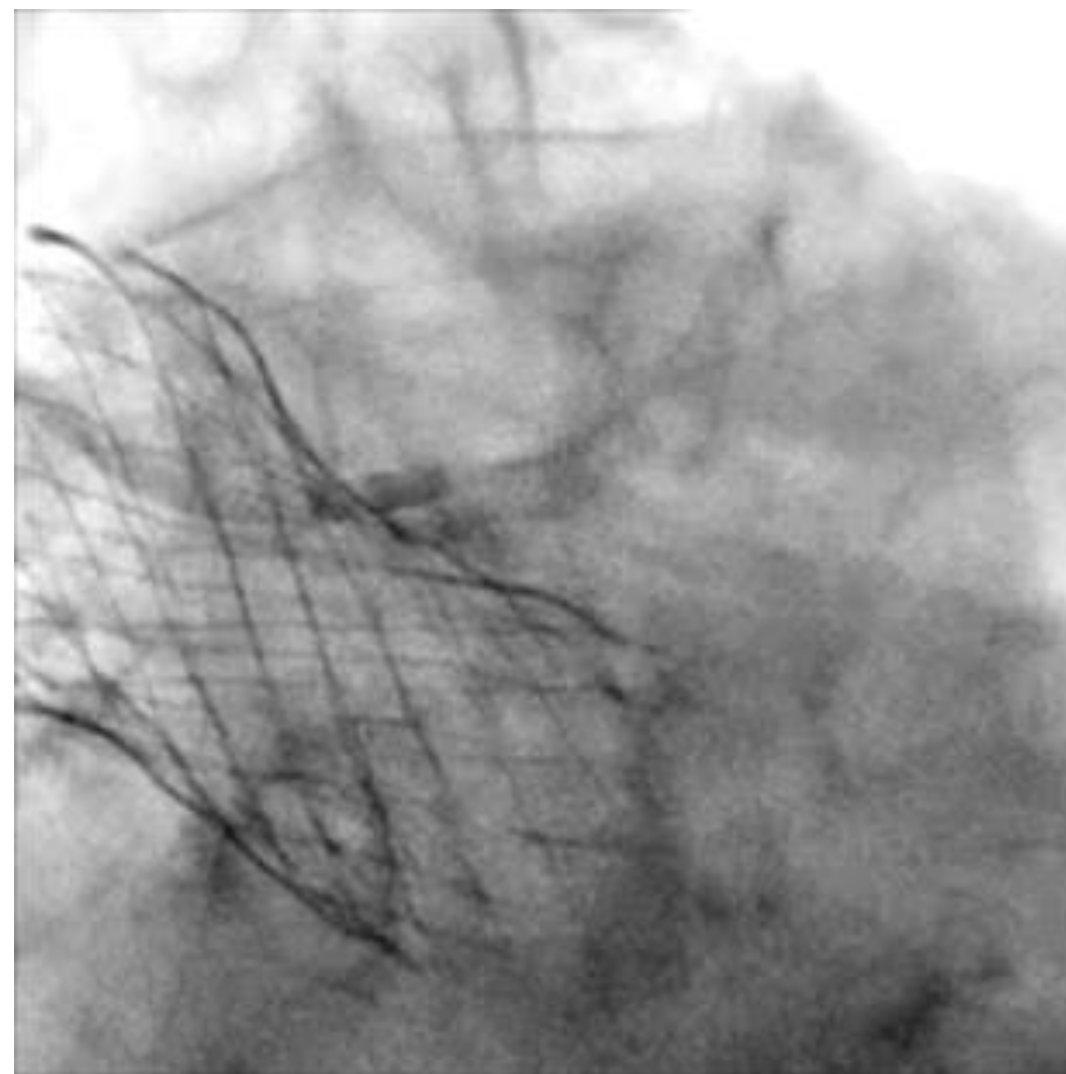
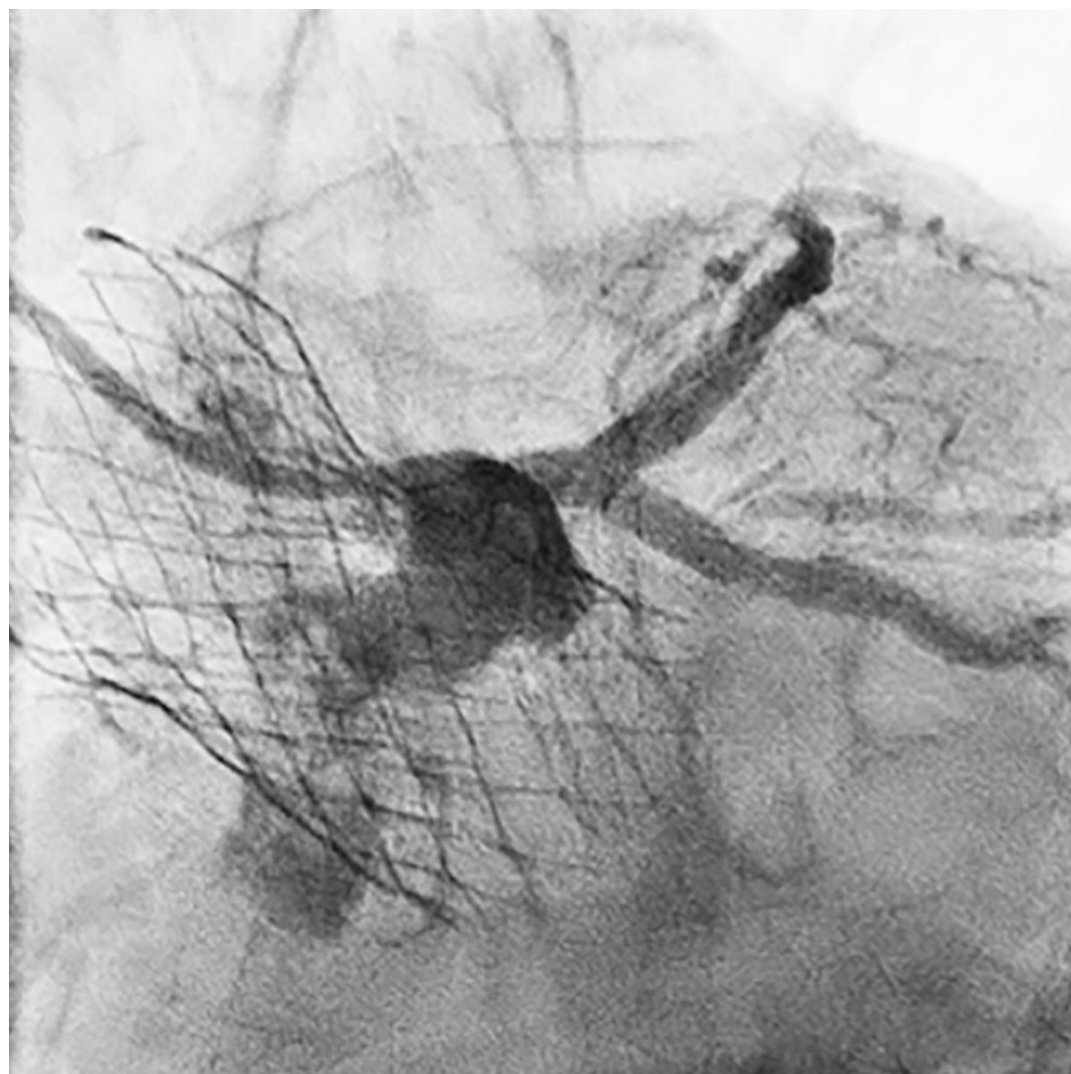
Guide wires removed and a **5-F multipurpose catheter advanced** into the aortic sinus over an extra-stiff wire facilitating release of the guide catheter.



A 7-F JL3.5 guide catheter positioned via the **THV cell above the LM** successfully.



Final result.



Severely delaminated guide catheter.



No embolisation occurred because the coating was still attached to the guide catheter.

Coronary angiography and **PCI** after TAVI are technically **challenging** and potentially **hazard**, specially in the setting of **tall and supra-annular THVs** that extend above the coronary ostia (e.g., Evolut), rarely in the presence of **short and intra-annular THVs** that remain below the coronary ostia (e.g., Sapien).

Evolut Pro



Narrow cells

Supra-annular leaflets

Acurate Neo 2



Wide cells

Supra-annular leaflets

Portico



Wide cells

Intra-annular leaflets

Tips and tricks when performing a coronary angiography and/or PCI through THVs:

- Consider an **aortic angiography** with a pigtail catheter to identify the coronary ostia in relation to the THV.
- Use **short-tip catheters** such as JL for the LCA and JR for the RCA. Avoid long-tip catheters like EBU/XB/Voda for the LCA and AR/AL for the RCA.
- Use **undersized shapes** by 0.5 for the LCA.
- Consider a **non-selective engagement** of the guide catheter if selective engagement is not possible.
- If non-selective engagement, consider **coronary artery wiring** from the aortic root and **guide catheter extension** through the THV cell.
- Perform the **guide catheter disengagement** over the wire.

When performing a coronary angiography and/or PCI through THVs, use **JL3** (right radial artery) or **JL3.5** (left radial artery or femoral artery) for the LCA and use **JR4** for the RCA.



When performing a coronary angiography and/or PCI through tall THVs, specially with the Evolut THV (Medtronic), use the cells **opposite** the coronary ostia, consider the cells **above** the coronary ostia but avoid the cells **below** the coronary ostia.

