

My Tips and Tricks for Prevention and Management of Aortic Valve Embolizations

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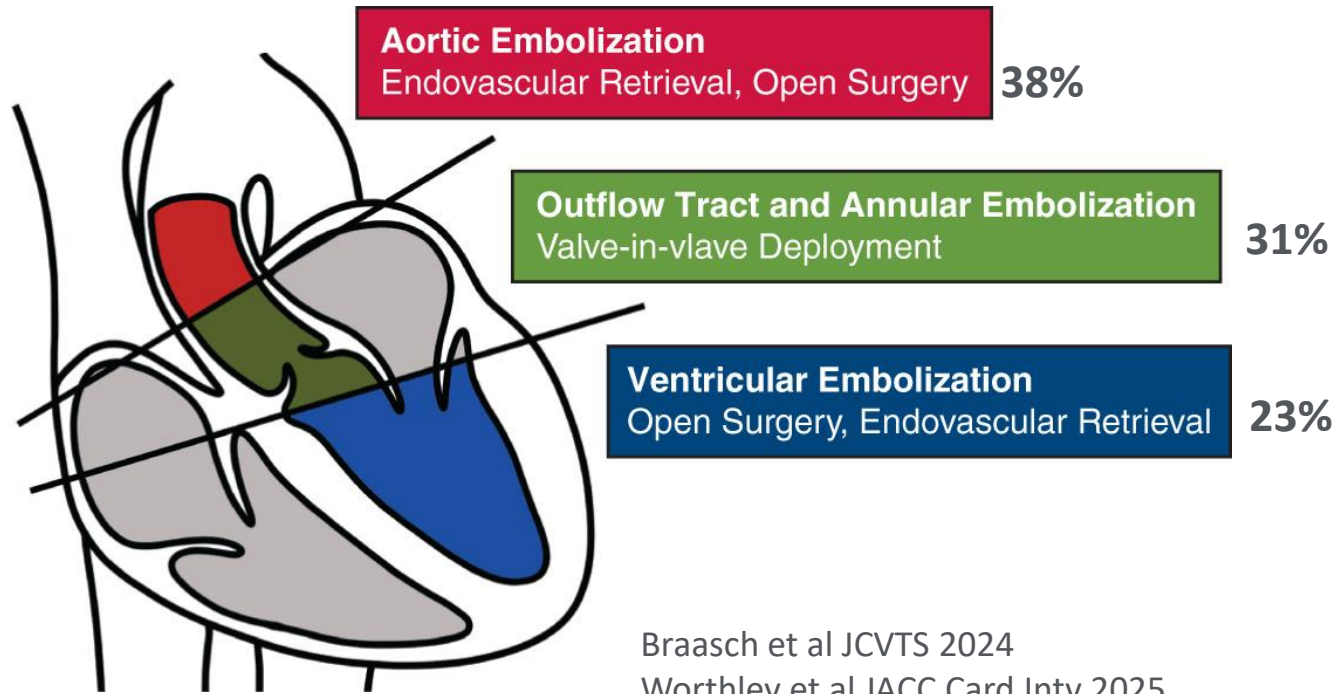
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<u>Nature of Financial Relationship</u>	<u>Ineligible Company</u>
Grant/Research Support	N/A
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Individual Stock(s)/Stock Options	N/A
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Executive Role/Ownership Interest	N/A
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TAVR Embolization

- TAVR Embolization: 0.1-3.7% (Historic Data)
- TRAVEL Registry (2010-17, 26 sites): 1%
- **Evolut Fx: 0.4%**
- **Edwards Sapien S3 Ultra Resilia: 0.1%**
- **Abbott Navitor: 0.9%**



Braasch et al JCVTS 2024
Worthley et al JACC Card Intv 2025
Kim et al EHJ 2019
Zaid et al JACC Card Intv 2023
Stinis et al JACC Card Intv 2024

Reasons for TAVR Embolization

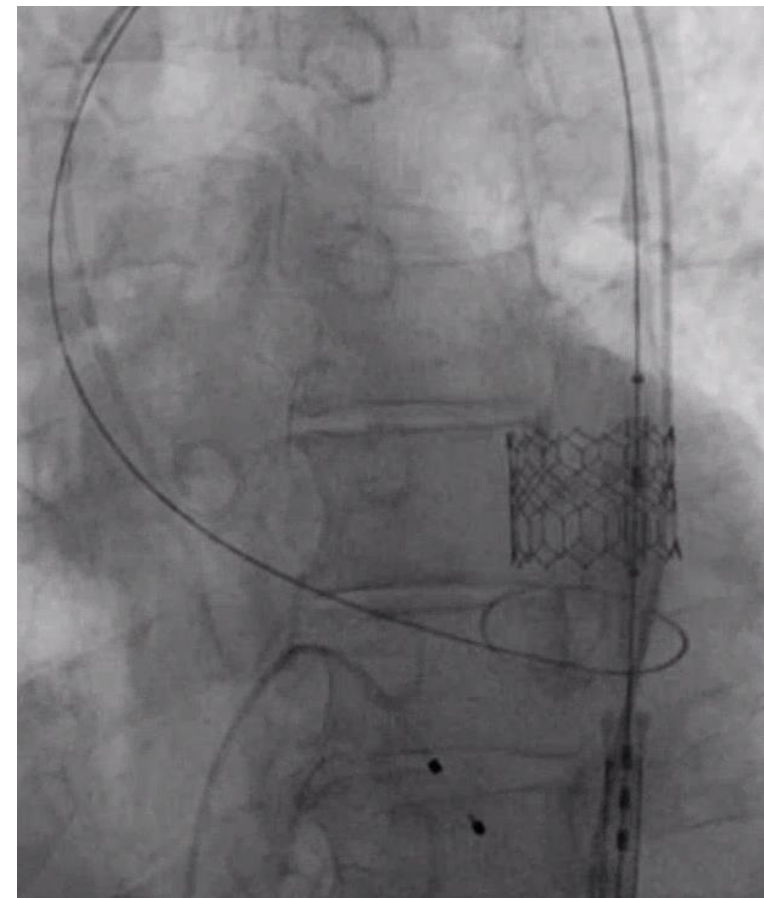
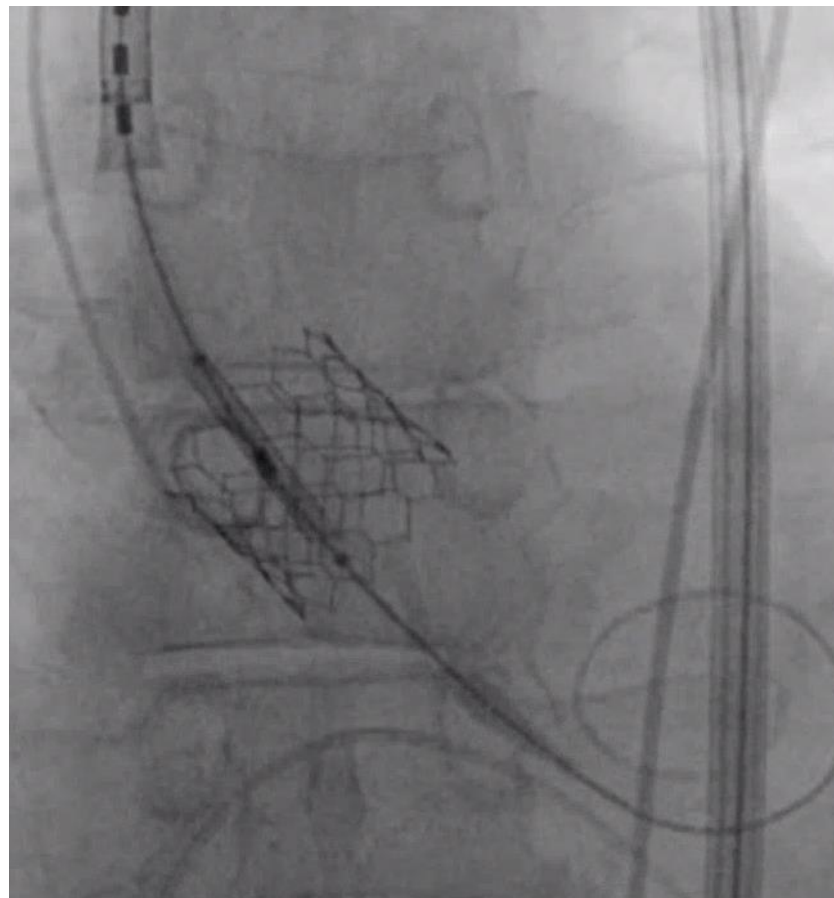
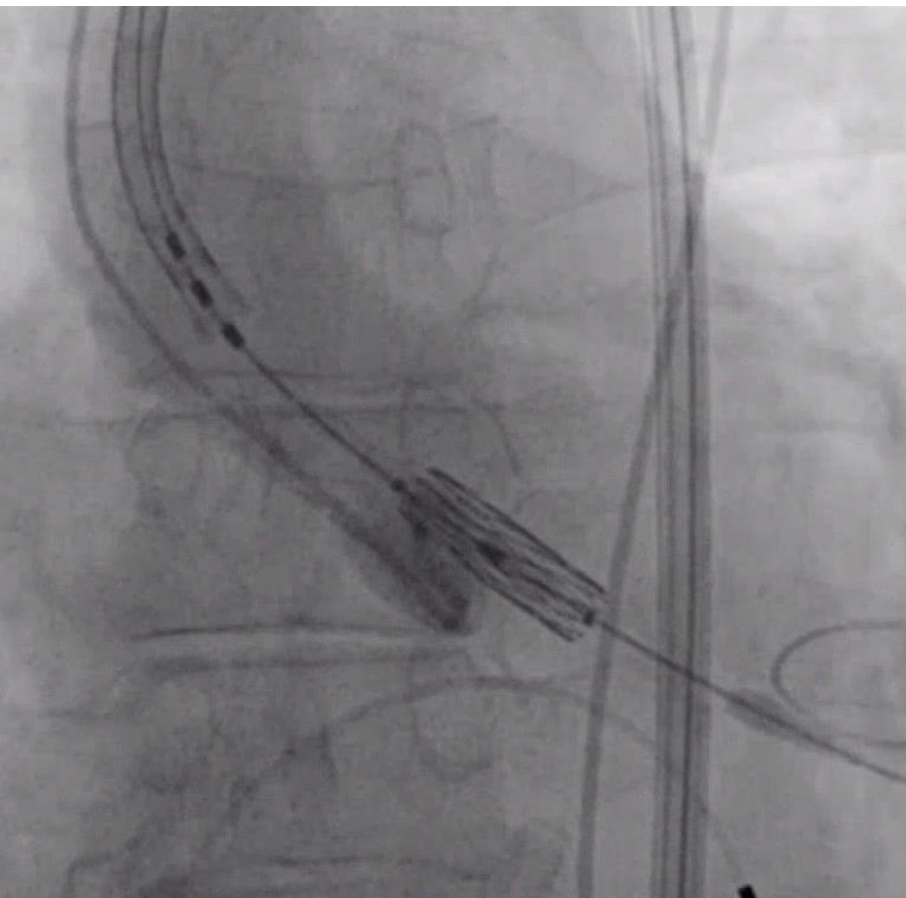
• Patient Related Factors

- Lack of Calcium
- Asymmetric Calcification
- Horizontal Aorta
- Bicuspid Aortic Valve
- Large aortic annulus
- Ascending Aortic Dilatation

• Technical Factors

- Incorrect Valve Size
- Inappropriate Positioning
- Pacing Malfunction
- Post Dilatation

Case # 1 : Edwards Sapien



Borderline Annulus/STJ: 460mm²

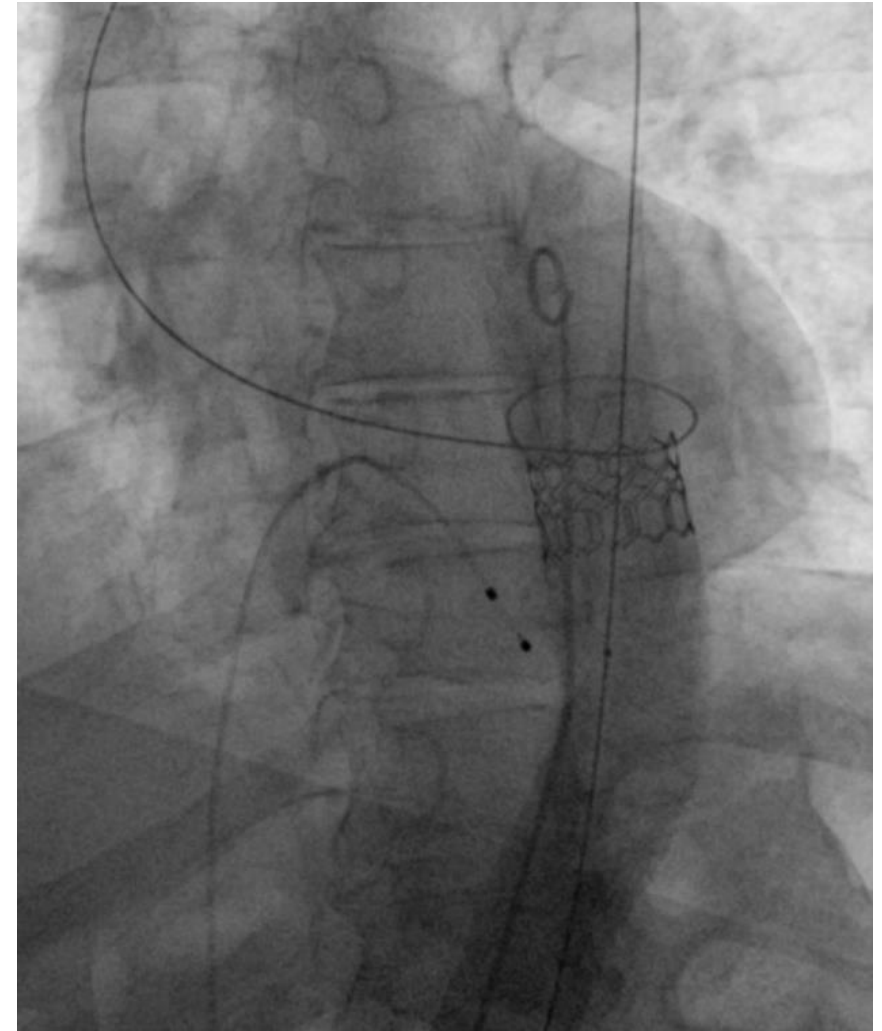
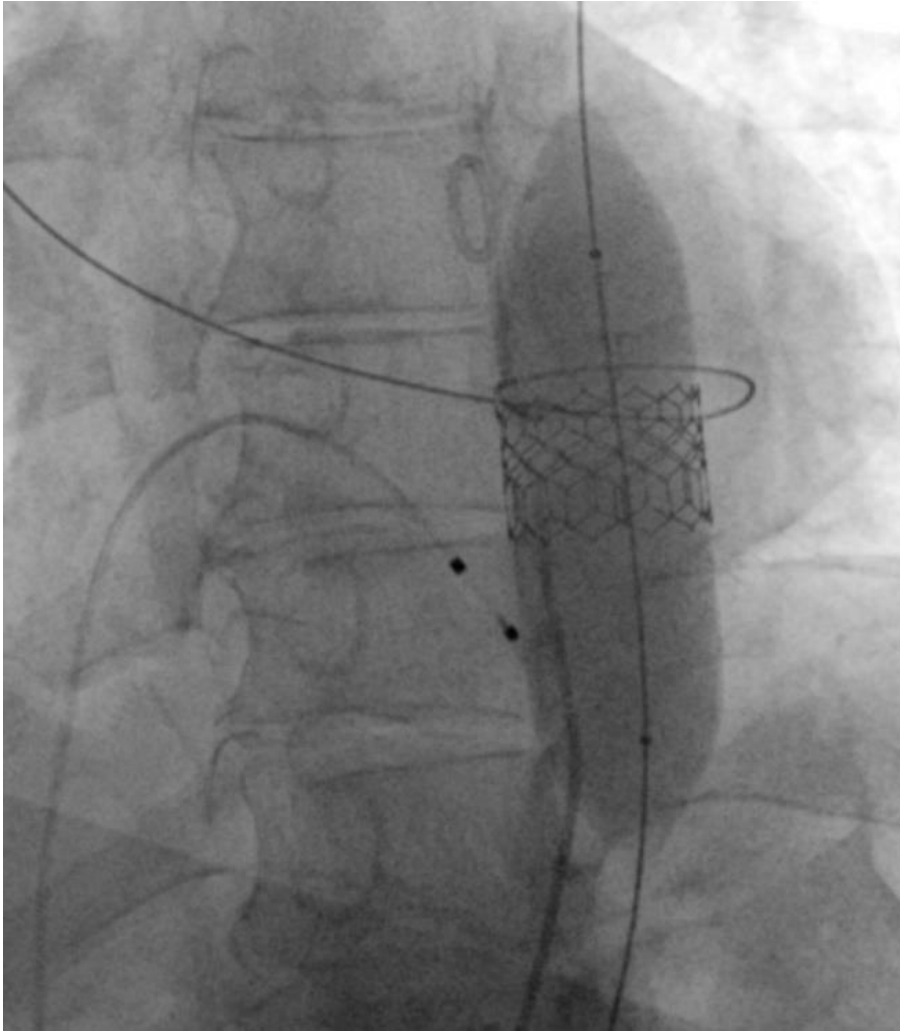
23mm+2cc S3UR

Pacing malfunction during deployment

Undersized?

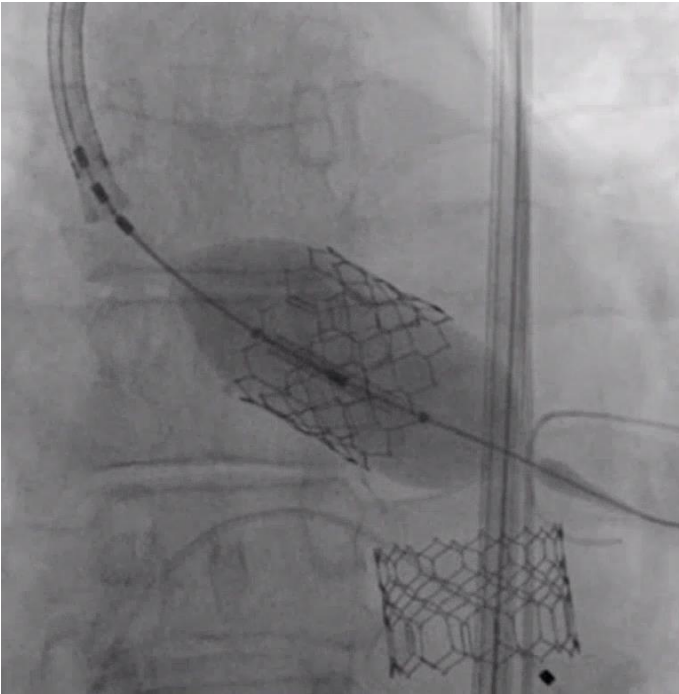
**Pulled into descending aorta via
valve delivery system**

Case # 1 : Edwards Sapien

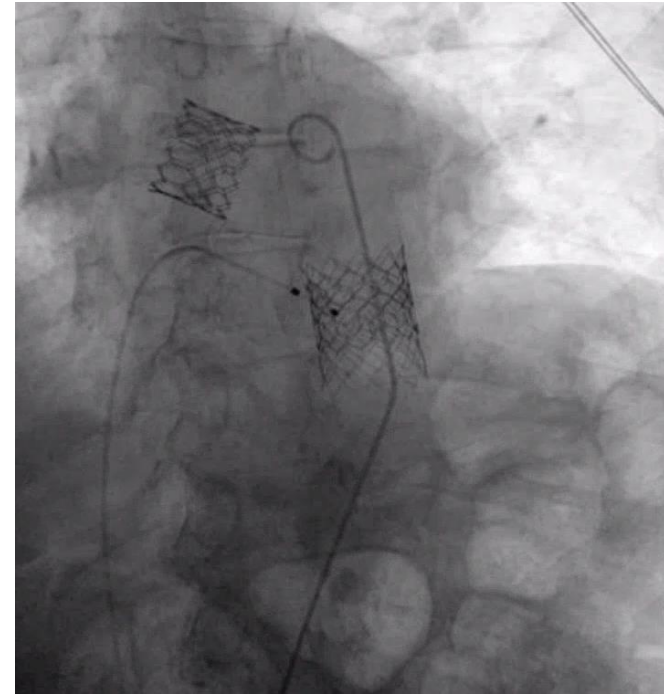
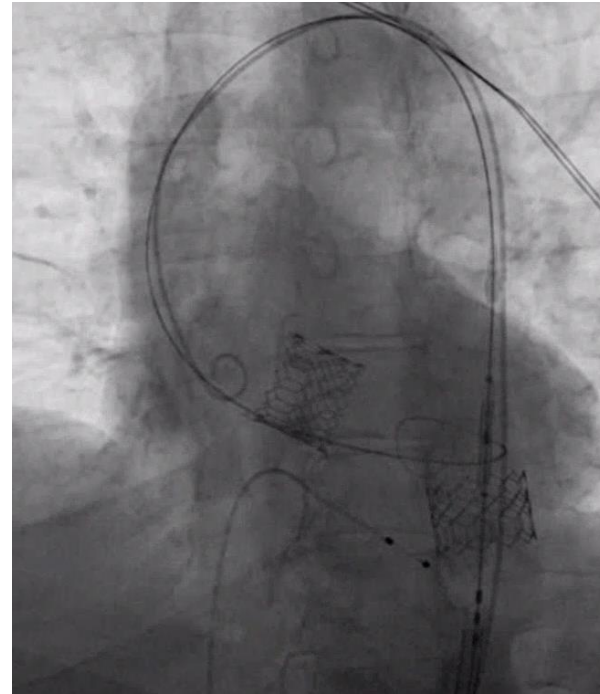


Post dilated with 25mm ZMed

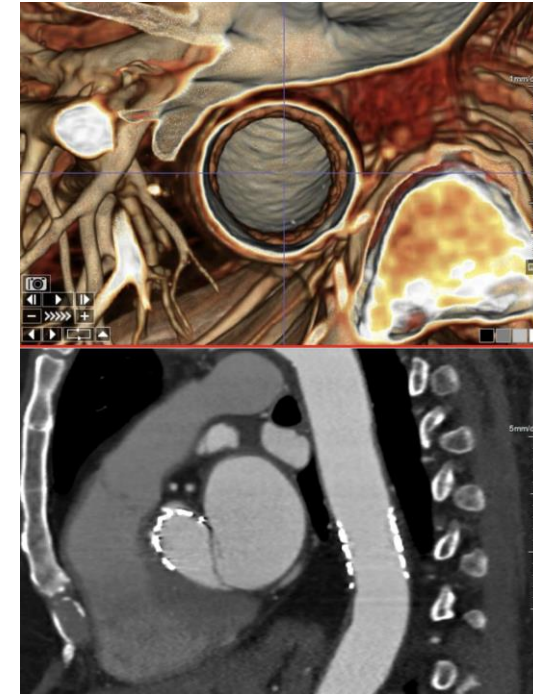
Case # 1 : Edwards Sapien



26mm S3



Valve secured with a 10x40mm
Palmaz XL stent crimped on
25mm ZMed



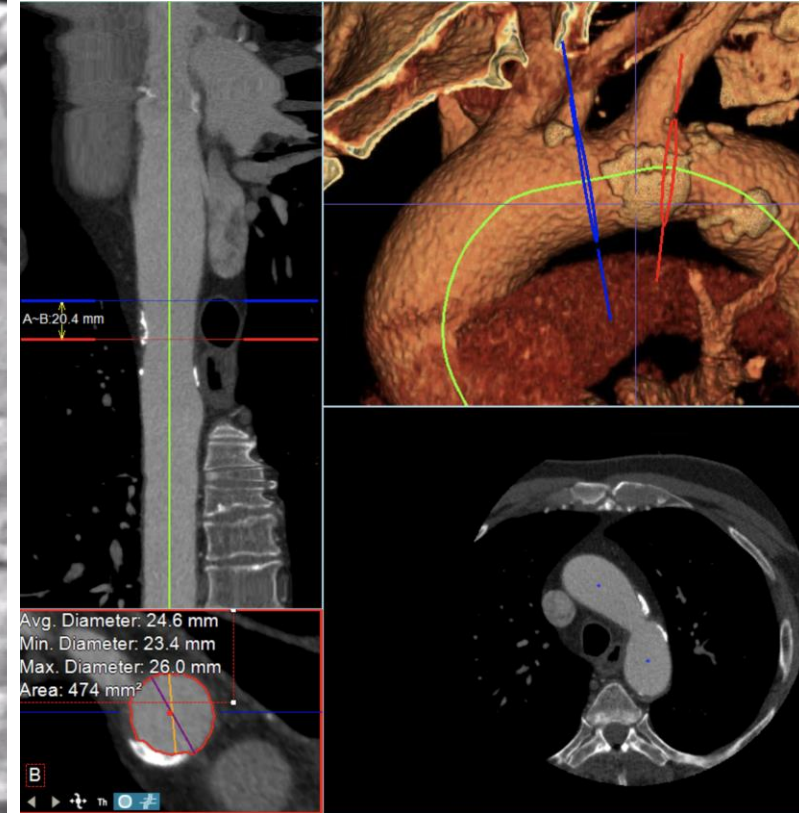
Case # 2 : Edwards Sapien



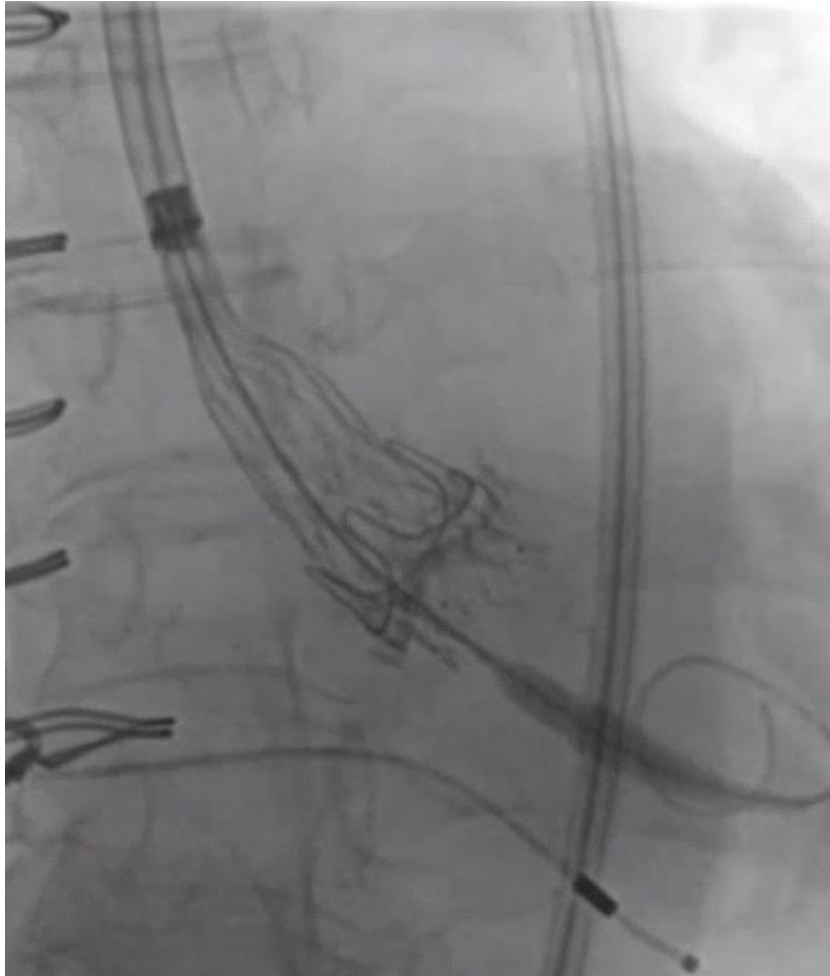
26mm S3U
Pacing Malfunction during deployment



Unable to pull back beyond this point
SAVR



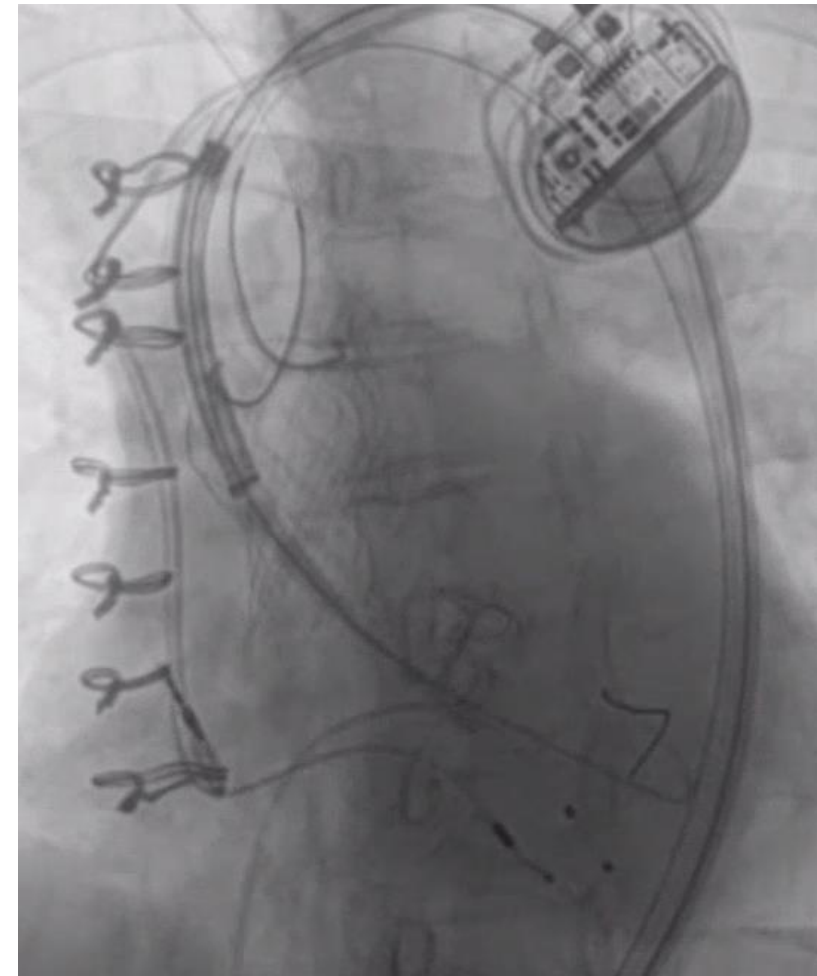
Case # 3 : Evolut Fx



**23 Evolut Fx inside 19mm Magna Ease
Pacing over Wire**

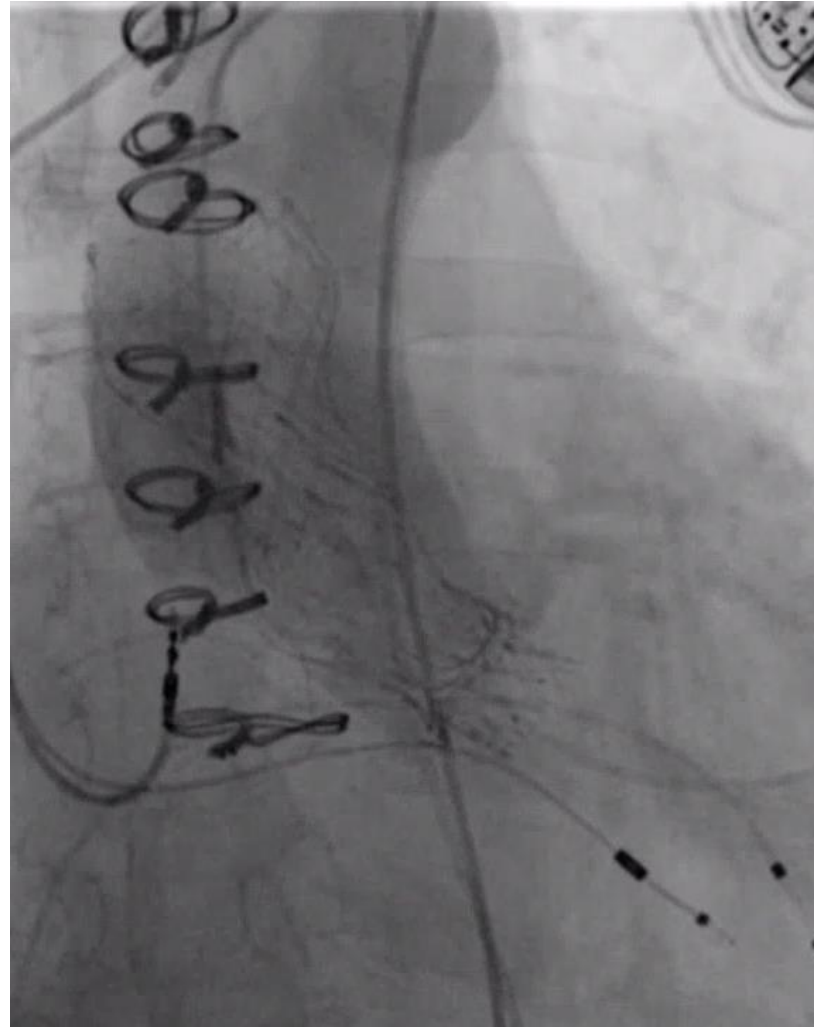
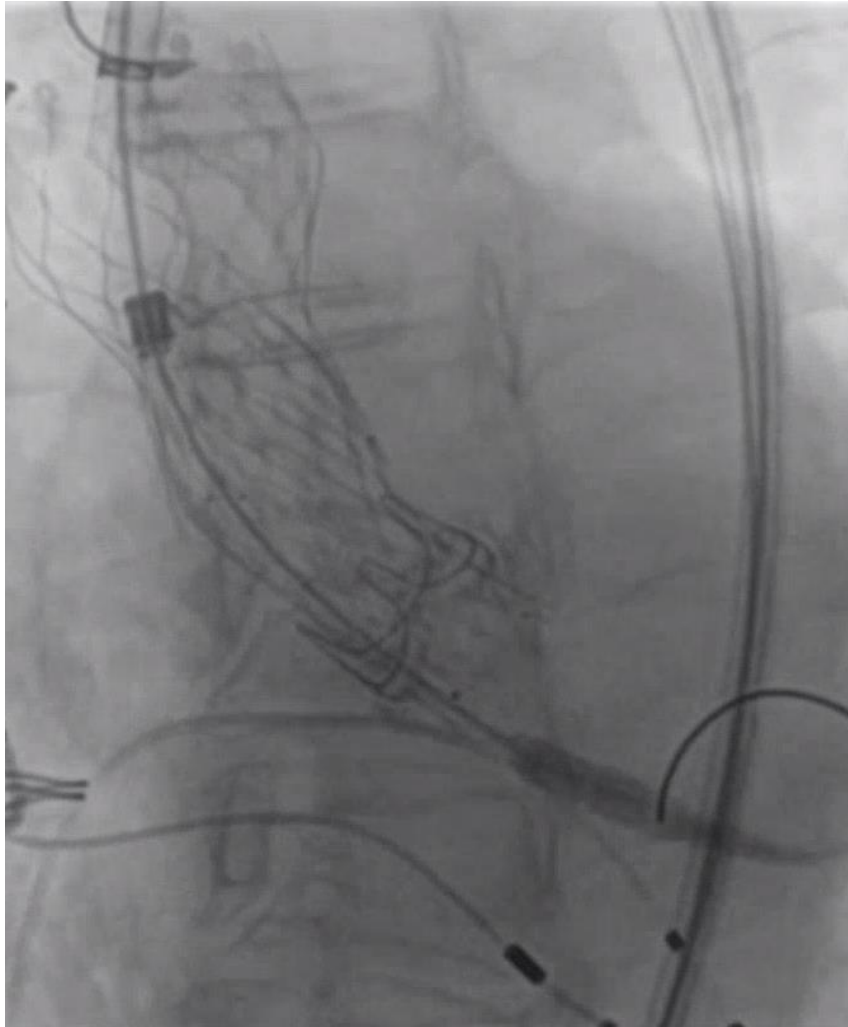
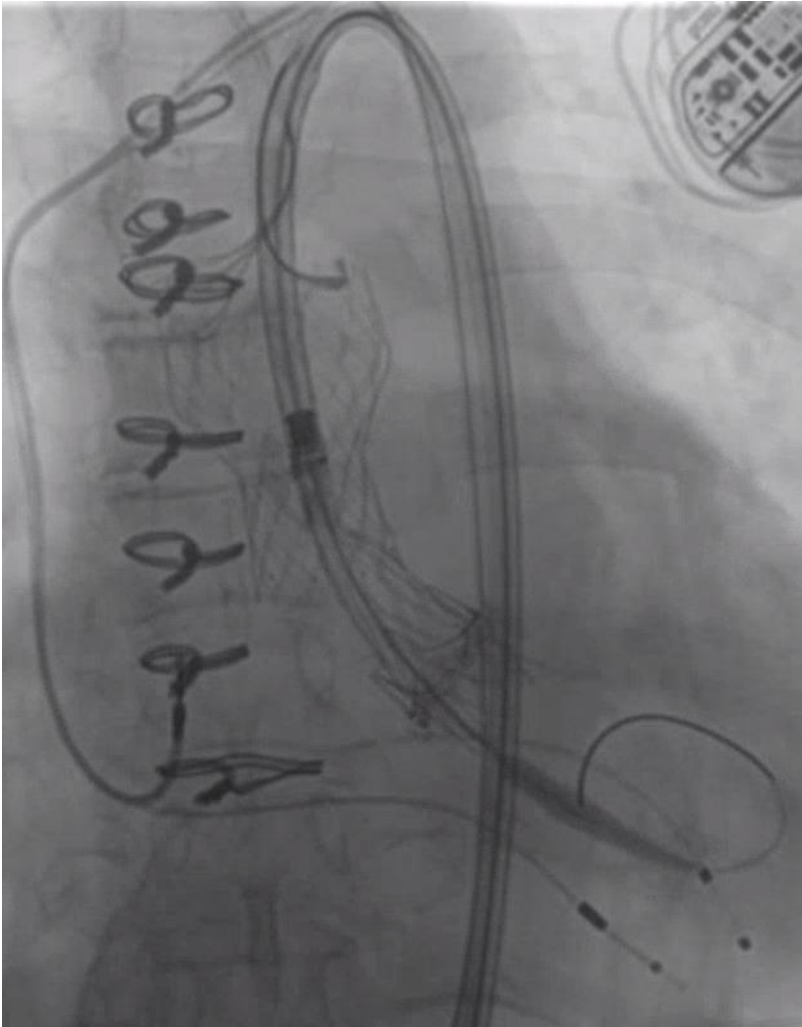


**Both tabs snared - JR4 guide
and Ensnare**



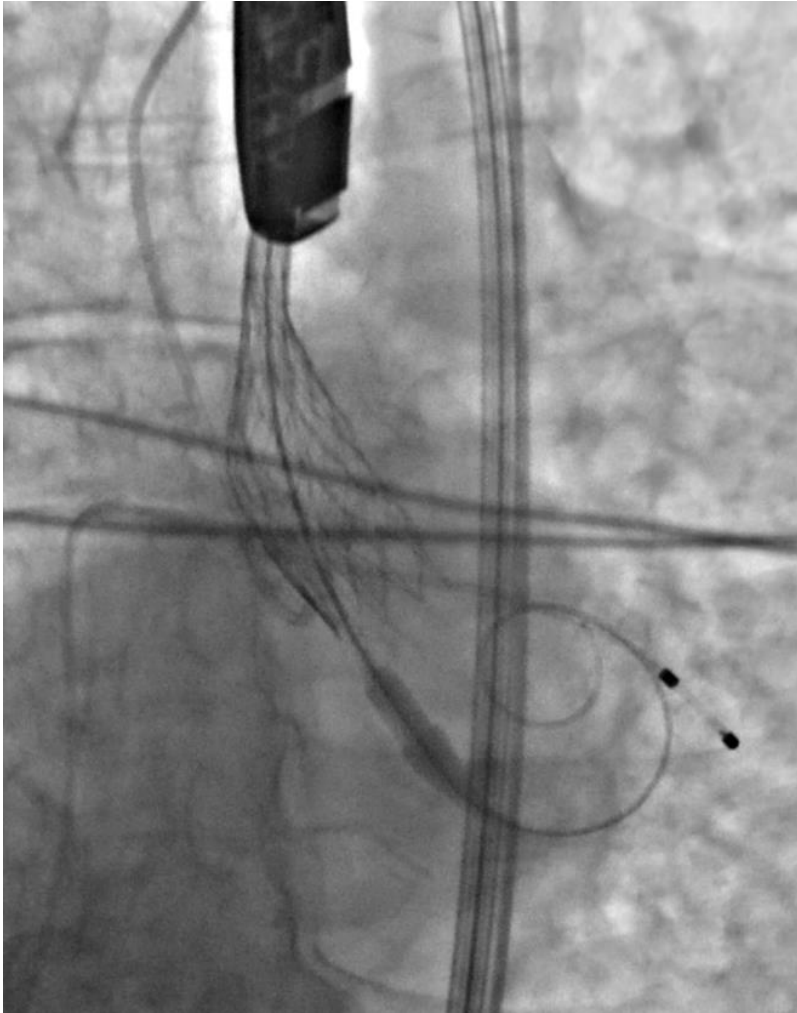
**Dilated Ascending Aorta
Unable to secure valve**

Case # 3 : Evolut Fx

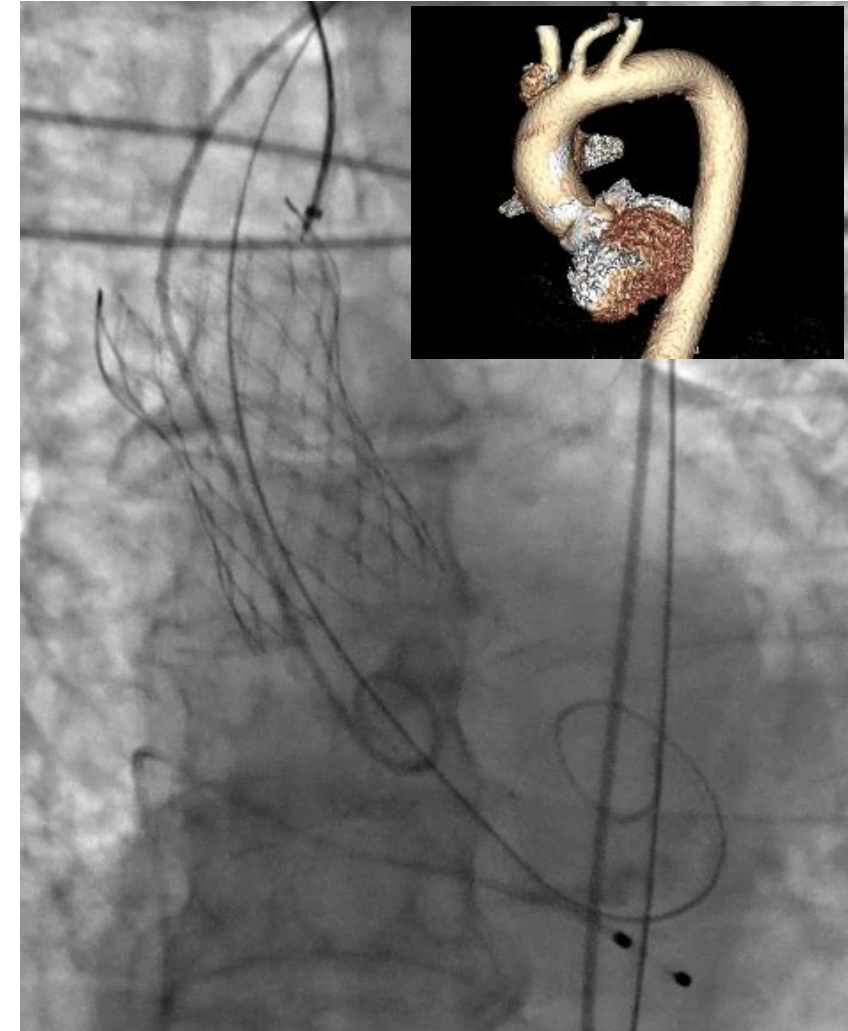
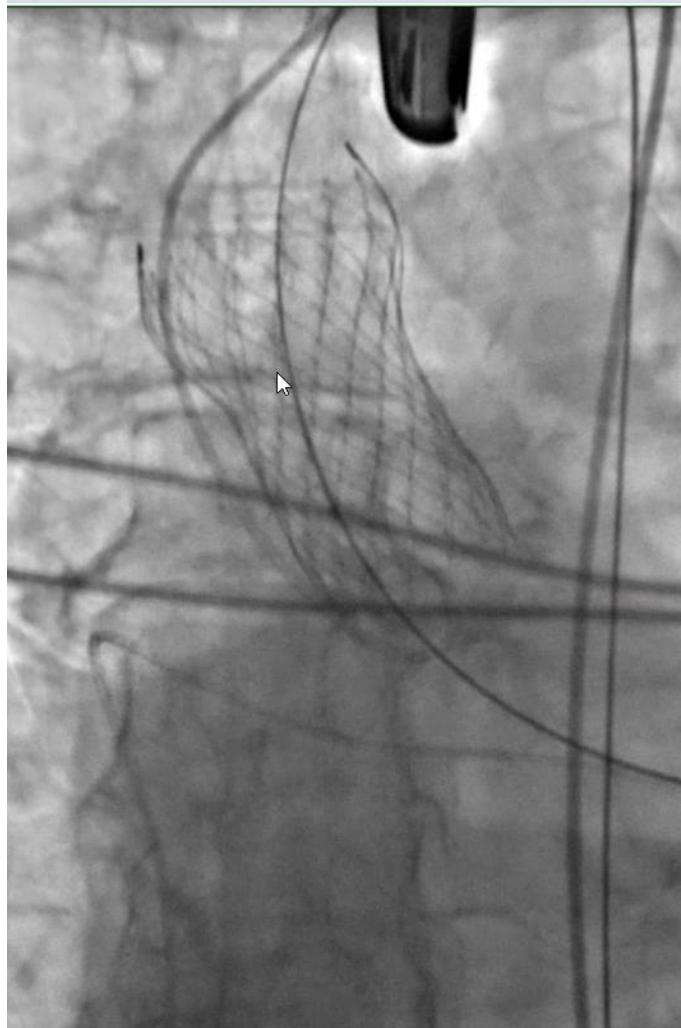


2nd Evolut valve to secure the 1st Evolut

Case # 4 : Evolut Pro+



29 Evolut Pro+



Snared into ascending aorta, unable to get above the STJ

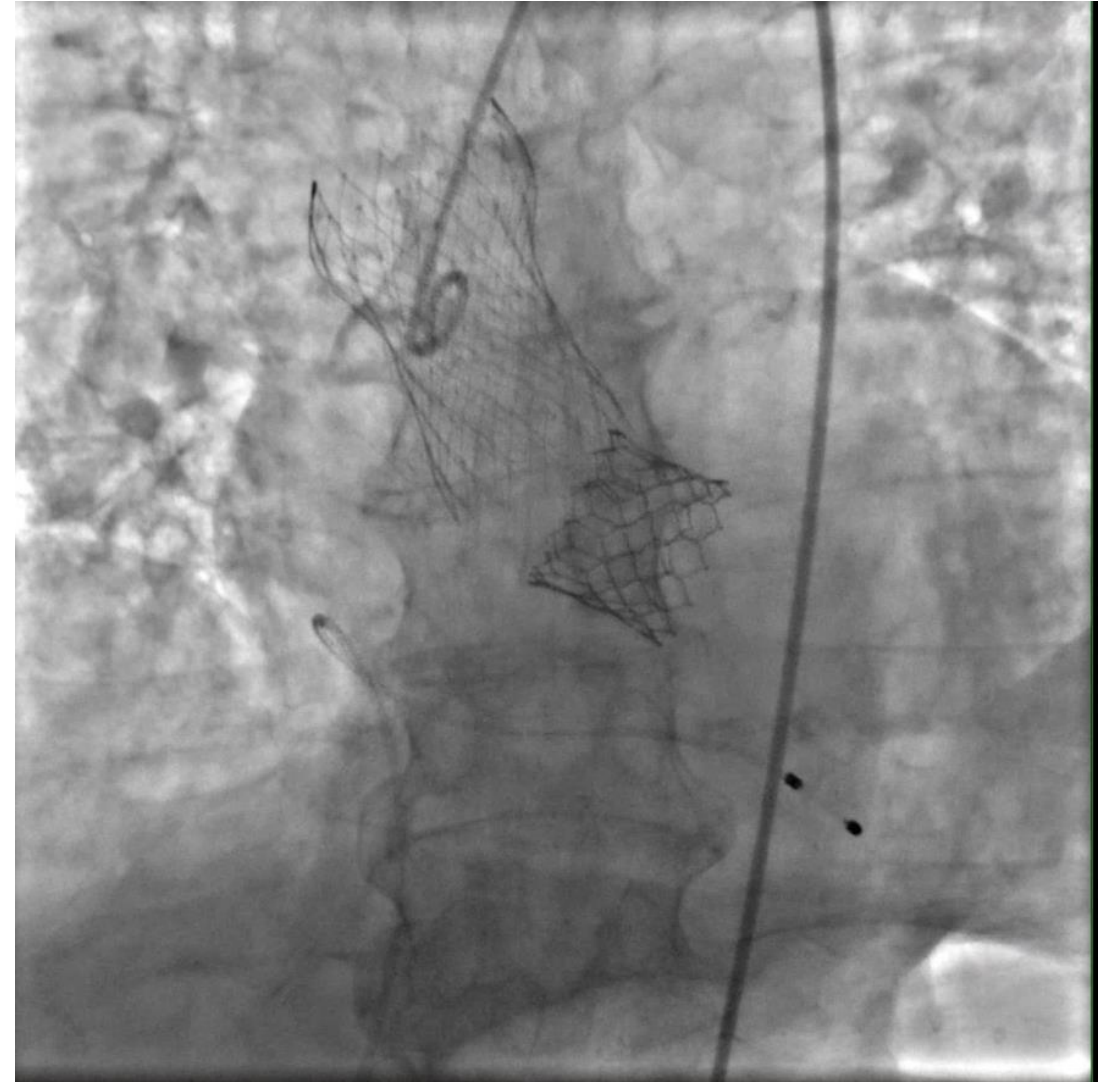
Case # 4 : Evolut Pro+



23mm S3

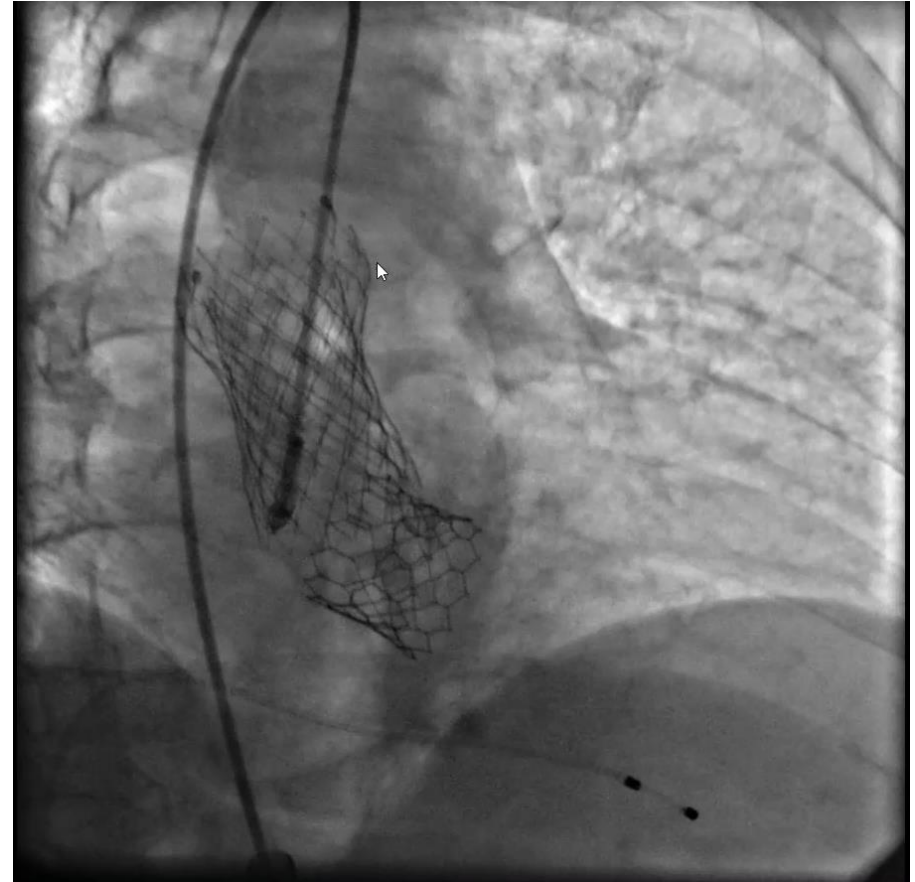


Case # 4 : Evolut Pro+



**Aortogram – pigtail above leaflets
Valve at STJ not allowing diastolic coronary filling**

Case # 4 : Evolut Pro+

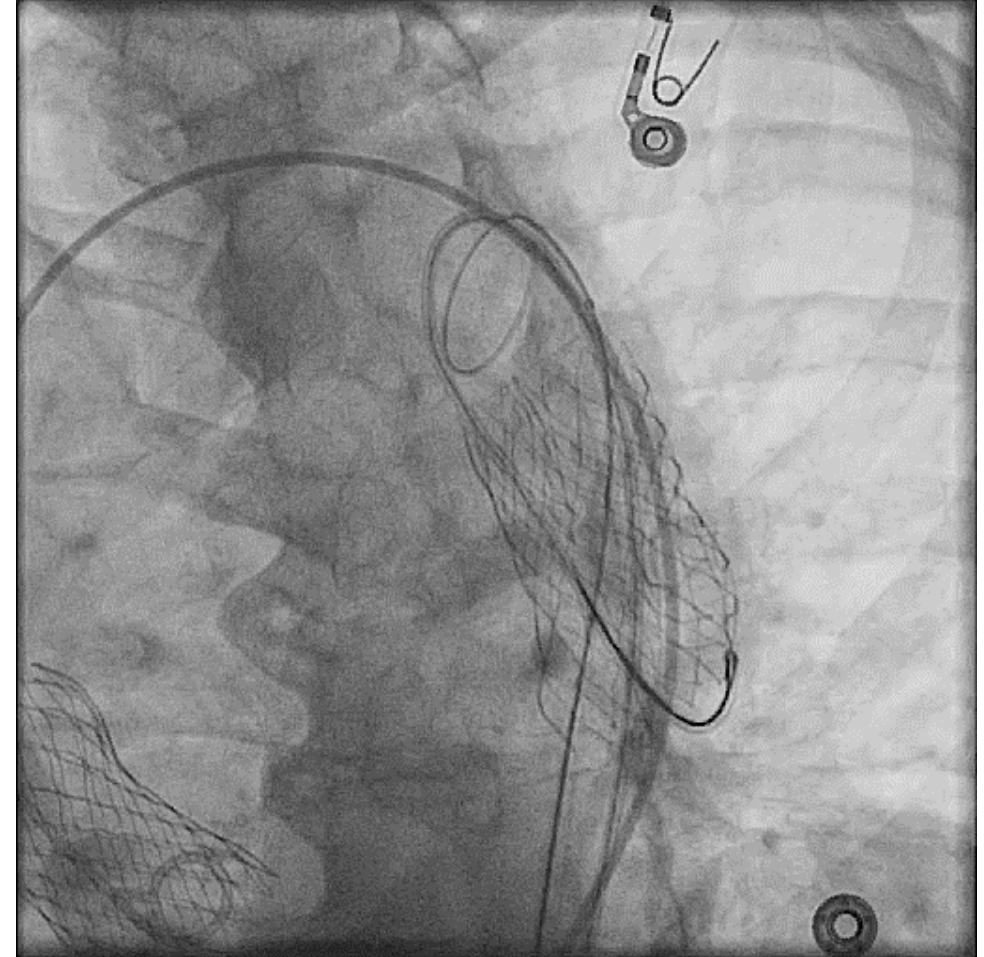
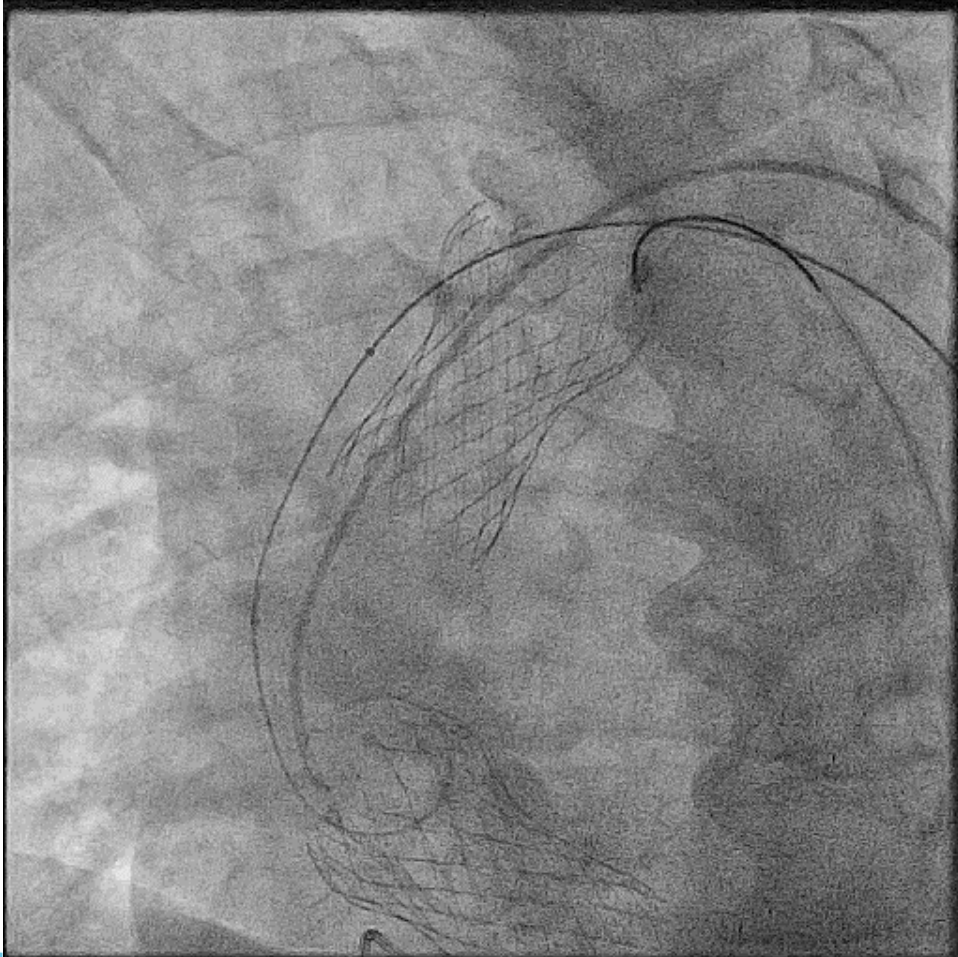


Stent

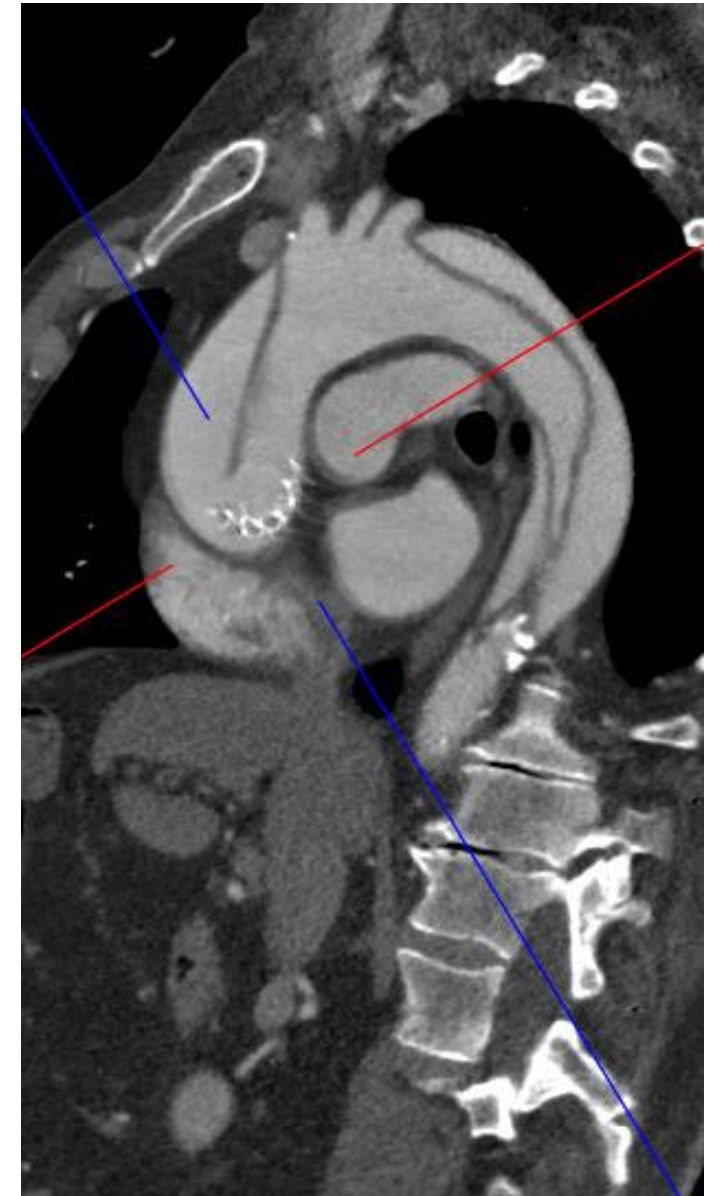
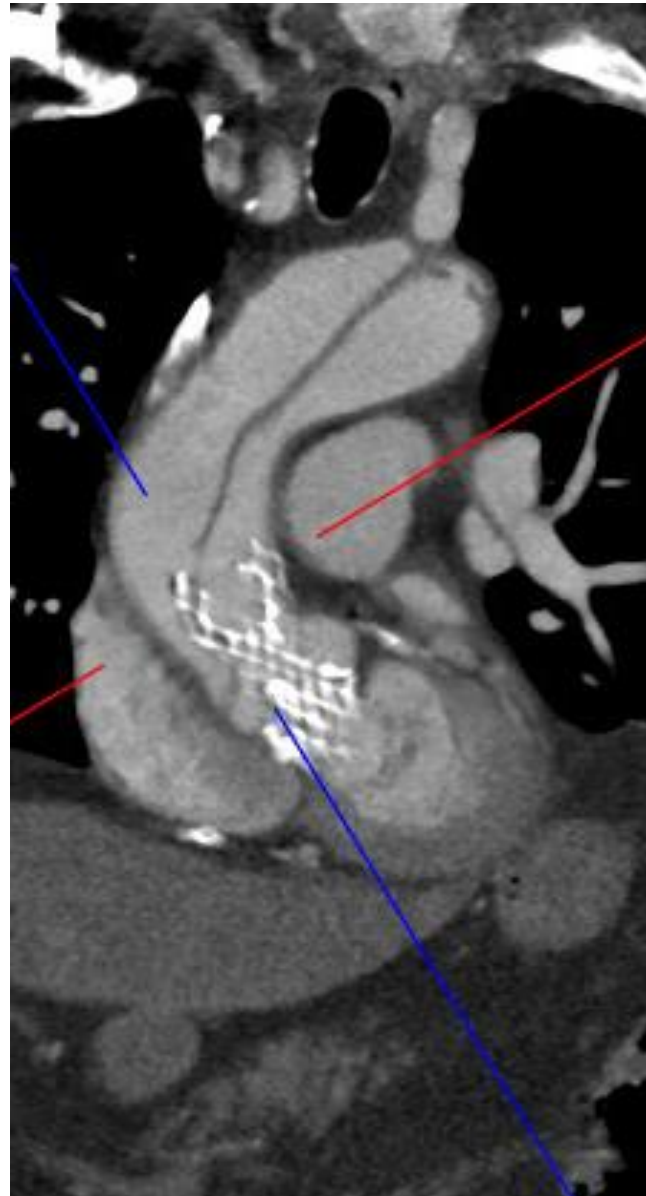


Case # 5 : Evolut Pro

**Don't Pull Hard
Try to Avoid this!!**



Case # 5 : Evolut Pro



TAVR Embolization Management Strategies

Self Expanding THVs

Aortic Embolization

- **Snare** (Ensnare, Gooseneck)
- Lasso
- **Secure valve in ascending aorta** (before innominate)
- If not possible then **secure with second SEV/stent**

LVOT Embolization

- Snare to pull aortic
- Valve in Valve

Balloon Expandable THVs

Aortic Embolization

- **Pull to descending aorta** via valve delivery system balloon or an inflated balloon (Coda, Z-med, etc)
- ? **Stent** to secure / post leaflets

LVOT Embolization

- Valve in Valve

Ventricular Embolization

- Surgery



"An ounce of prevention
is worth a pound of cure."
Benjamin Franklin

THANK YOU

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