

# Transfemoral Transcatheter Aortic Valve Implantation in Severe Aortic Regurgitation due to Aortic Valve Leaflet Perforation: Pure AR-dedicated Device

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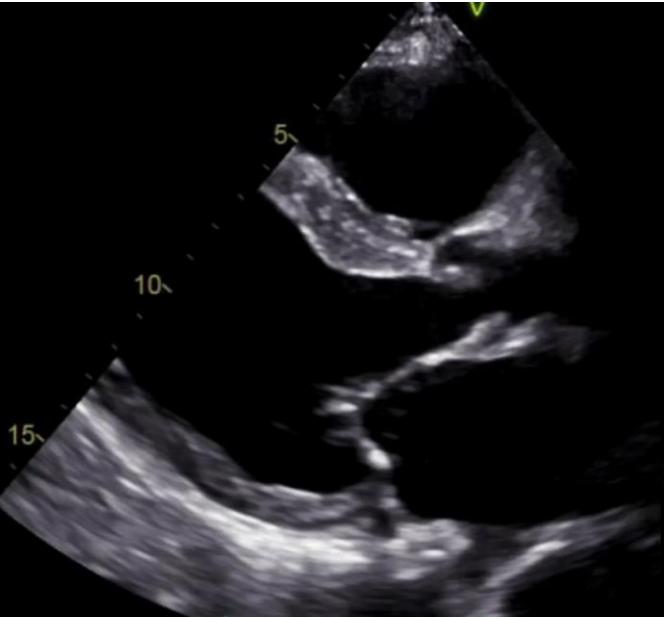
# Disclosure of Relevant Financial Relationships

I, Ho-On Alston Conrad Chiu, DO NOT have any financial relationships to disclose.

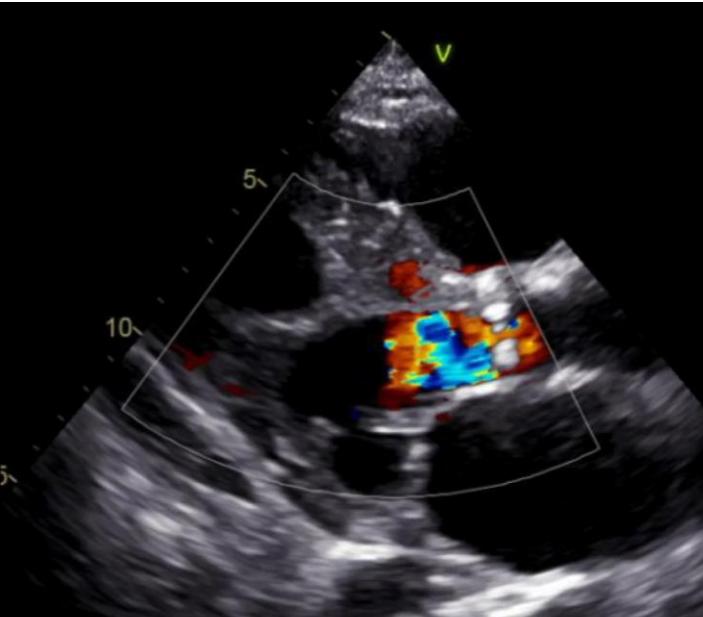
# 70-year-old male with Symptomatic Severe AR

- History of DM, ESRF on HD via Left AVF, Bilateral PAD with repeated angioplasty, High grade AVB with leadless PPM
- Poor General Condition: Frail & thin, long-standing toe gangrene
- Recurrent HFH: APO, hypotension requiring inotropic support
- Referred from regional hospital once again, ACS and APO
- TTE: Dilated LV, impaired LVEF (30%), Severe Aortic Regurgitation with eccentric jet, Ascending Aorta 34mm
- Coronary Angiogram: RCA critical Stenosis

# *TTE: Severe AR, Dilated LV, LVEF 30%*



*Impaired LVEF 30%  
LVEDd = 6.2cm*



*Severe Eccentric AR*



*Mild thickening of  
Aortic Valve leaflets,  
Severe Eccentric AR*



*mRCA critical stenosis  
TIMI II flow*

*LM/LAD/LCx minor disease*

## Heart Team Considerations

CABG + SAVR vs PCI + TAVR

EuroSCORE II: 13.93% (Frail & deconditioning after repeated HFH, ESRF + PAD, Impaired LVEF)

Heart Team Decision:

PCI to RCA lesion, followed by CT for TAVR Pre-operative assessment

# PCI to RCA critical lesion, followed by CT work-up

PCI to RCA, IVUS-guided, Inotrope dependent

6Fr AL1 as GC, SION BLACK as GW

NC 1.5/2.0 to mRCA

6Fr Guideplus II, NC 3.5

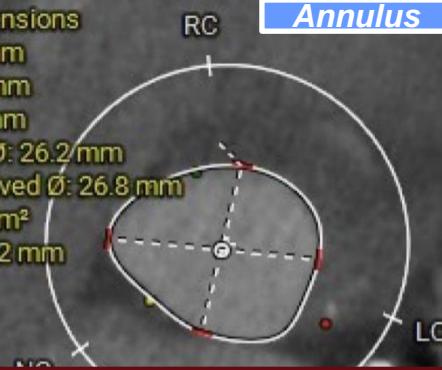
Onyx Frontier 4.0/26mm

Post-dilatation with NC 4.0

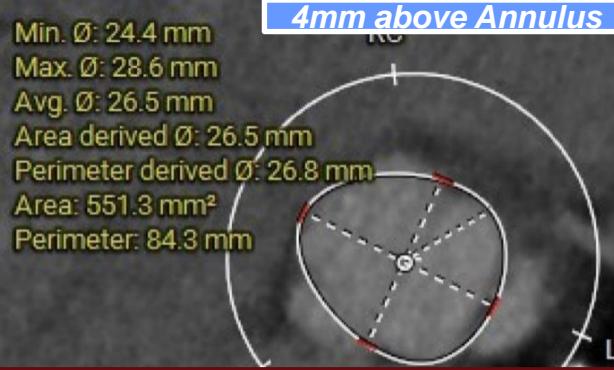
TIMI III flow and excellent IVUS results



**Annulus Dimensions**  
Min. Ø: 23.9 mm  
Max. Ø: 29.2 mm  
Avg. Ø: 26.5 mm  
Area derived Ø: 26.2 mm  
Perimeter derived Ø: 26.8 mm  
Area: 540.3 mm<sup>2</sup>  
Perimeter: 84.2 mm

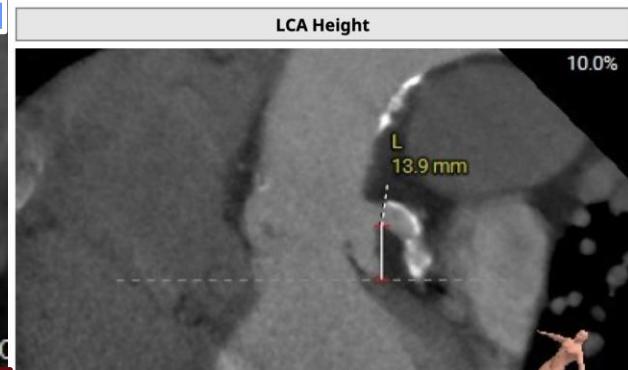


**Perimeter derived ø = 26.8mm**  
**Average ø 26.5mm**



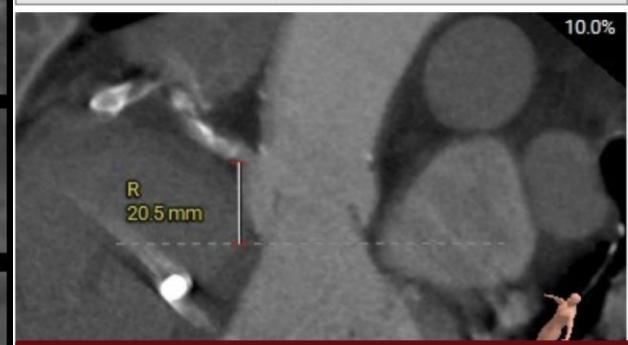
**Perimeter derived ø = 26.8mm**  
**Average ø 26.5mm**

**LCA Height**

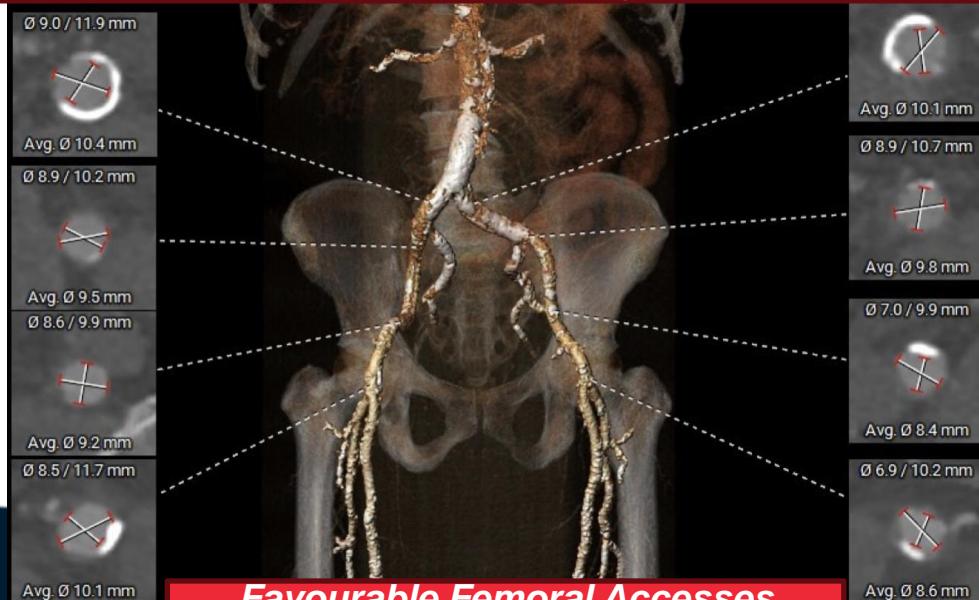


**Left coronary Height 13.9mm**

**RCA Height**

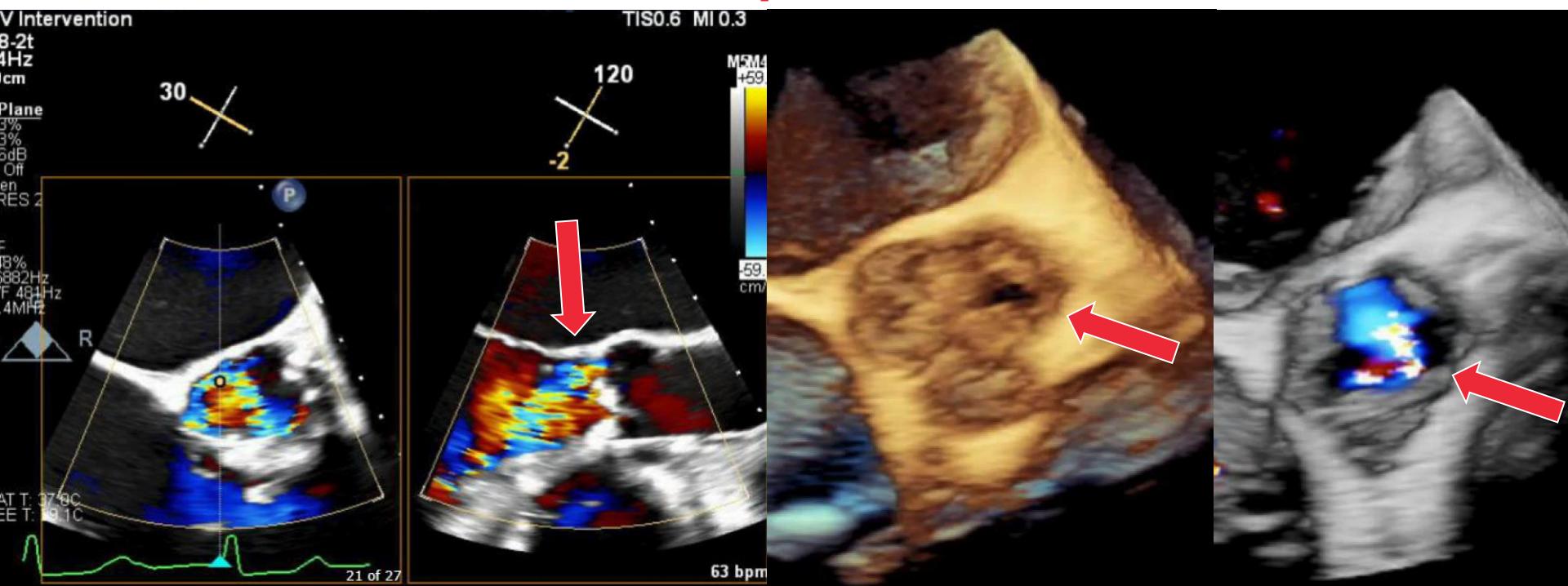


**Right coronary Height 20.5mm**



**Favourable Femoral Accesses**

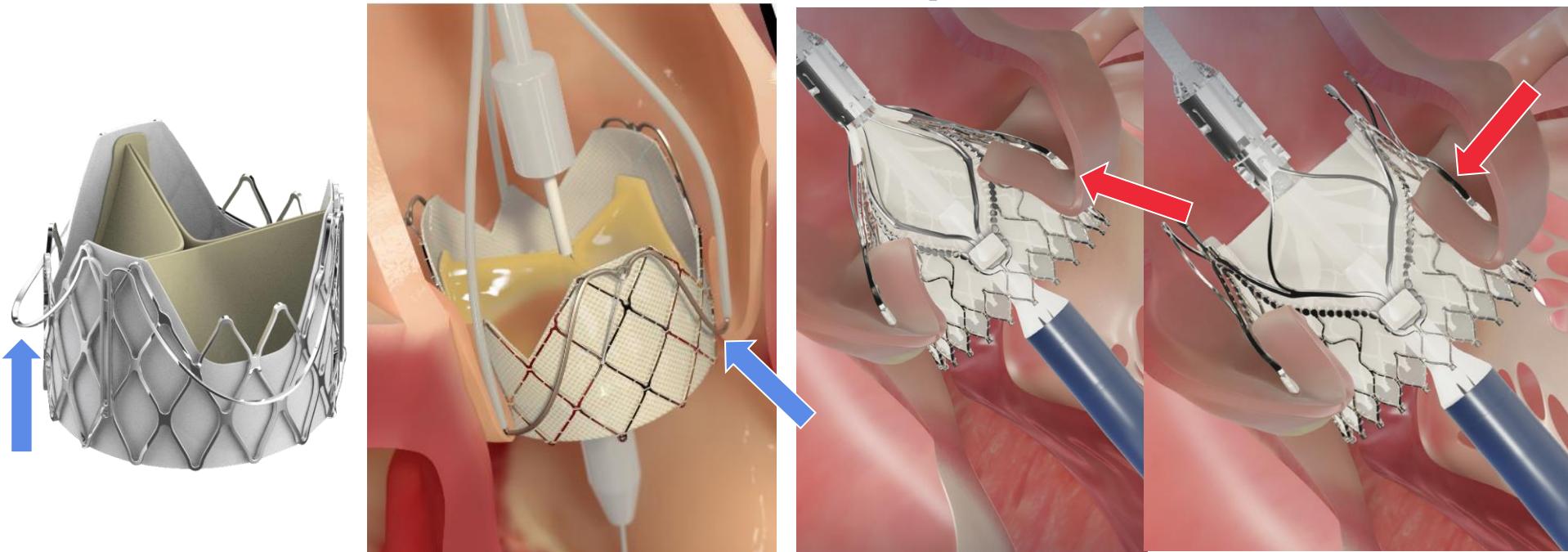
# Due to Eccentric AR → For Detailed Evaluation of AR Mechanism TEE showed perforated LCC



How to proceed?

# Pure-AR dedicated TAVI device platforms

## Which one for this patient?



**Consideration factors:**  
**Anchoring mechanism, Further perforation of AV Leaflet**

# TF-TAVI with J-Valve #29

Aortogram: 3 Cusps view

Cross AV with pigtail

Exchange to Safari Extra-small

Introduce Delivery System

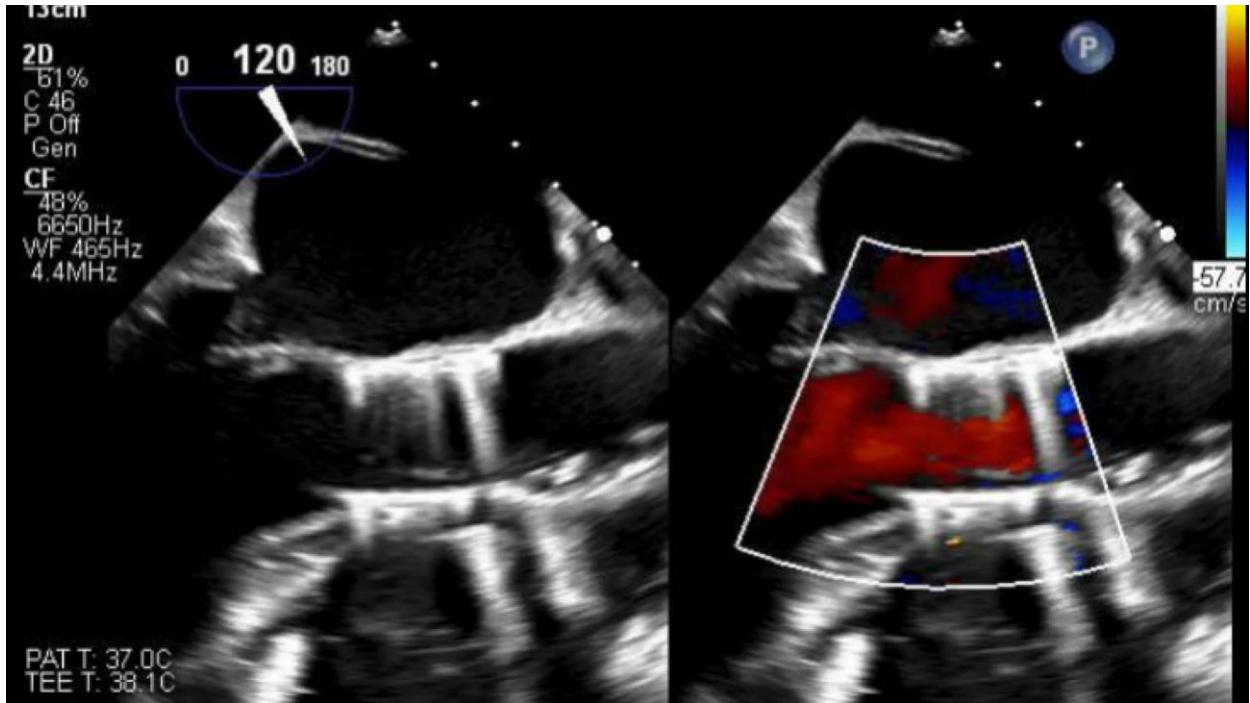
Position Claspers into cusps safely

Deploy THV



# Post-TAVI 1 year

- NYHA 1, no further Heart Failure Hospitalization
- No residual AR/PVL
- No THV migration
- AV PG 8/4mmHg



# Conclusions

1. Important to understand AR mechanism with imaging [3D imaging helps]
2. Dedicated devices designed to overcome anchoring mechanisms
3. TF J valve is feasible in challenging anatomies (e.g. a perforated AV leaflet)



The banner for the Hong Kong Valves Heart Team Conference features a red heart logo with the text "HONG KONG VALVES HEART TEAM CONFERENCE". A large red banner on the right side reads "Save the Date! 17th-19th Oct, 2025". Below the conference title, there is a collage of images showing speakers at podiums, a large audience in a lecture hall, and a cartoon character of a yellow and blue bird-like creature wearing a stethoscope and holding a heart, labeled "HONG KONG VALVES". A speech bubble in the center says "SAVE THE DATE!! 16-18TH OCTOBER 2026!". At the bottom, there is a website link "http://www.hongkongvalves.com" and an email address "enquiries@hongkongvalves.com".