

# **Valve Thrombosis and Valve Degeneration - How to Detect -**

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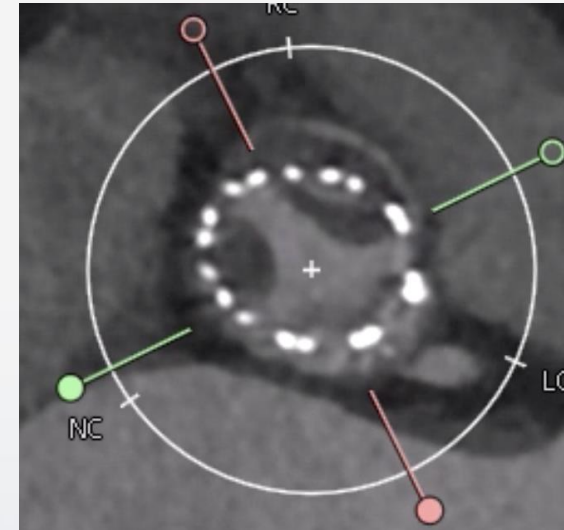
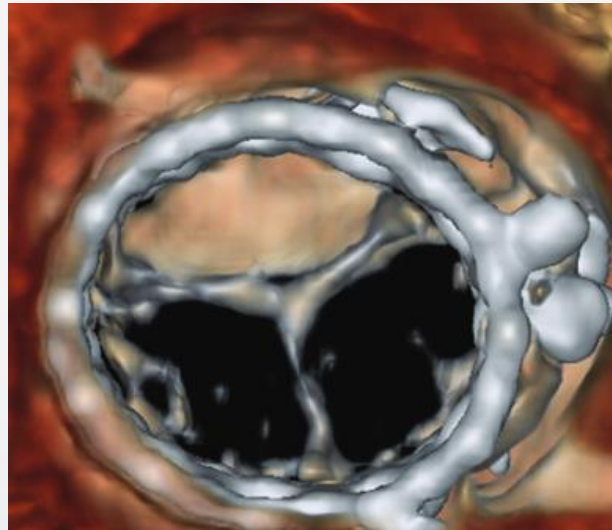
**Tokai University School of Medicine, Isehara, Japan**

# Disclosure

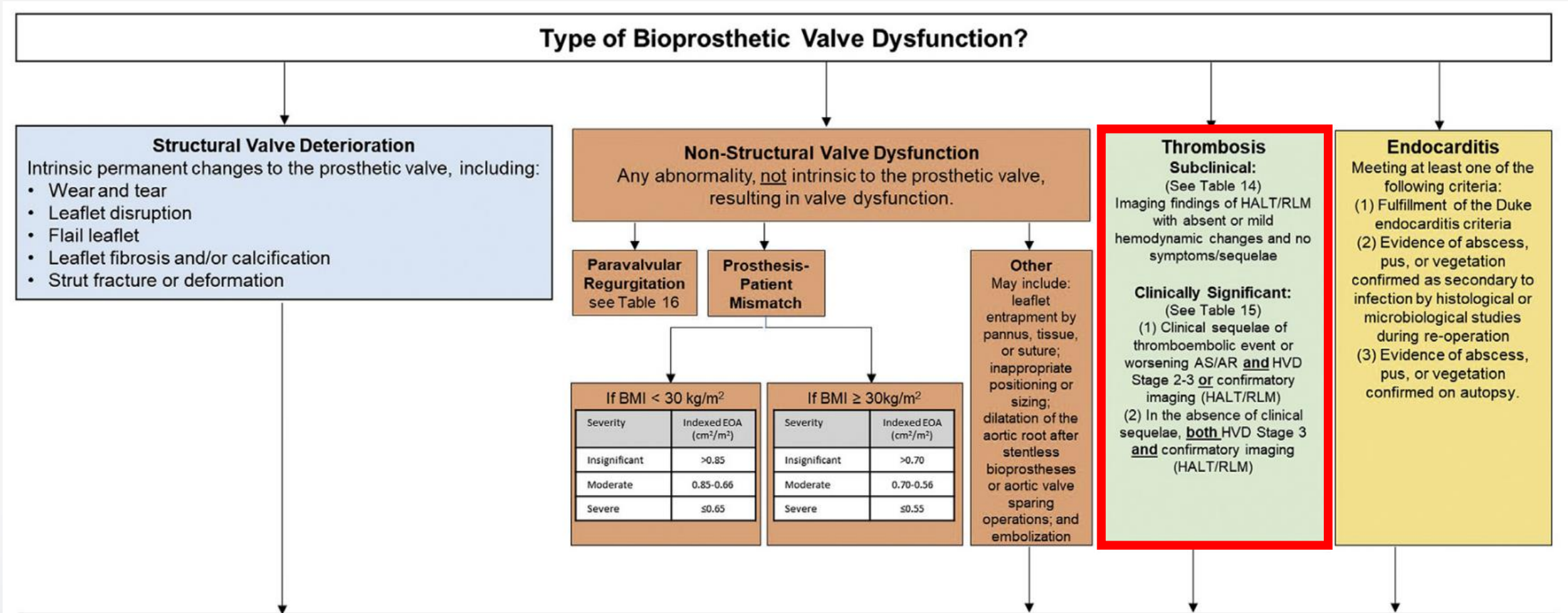
- ✓ Receipt of honoraria or consultation fees: Medtronic, Abbott, Edwards Lifesciences

# Valve Thrombosis

- ✓ Clinical Valve Thrombosis... Symptomatic, Clinical impact (stroke, myocardial infarction, valve failure etc...)
- ✓ Subclinical Valve Thrombosis... Asymptomatic, no clinical impact?



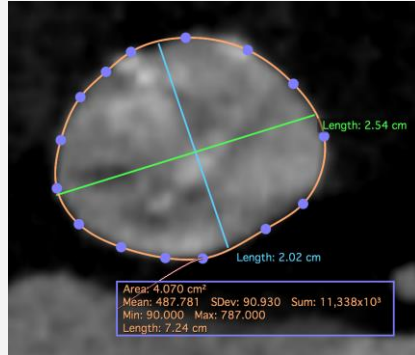
# Why is it important?



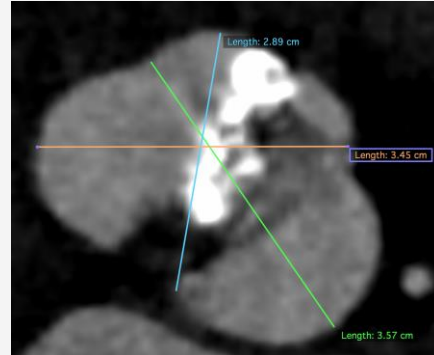
VARC-3

# 83 yo male, TF-TAVI 7 yrs before for bicuspid AoV

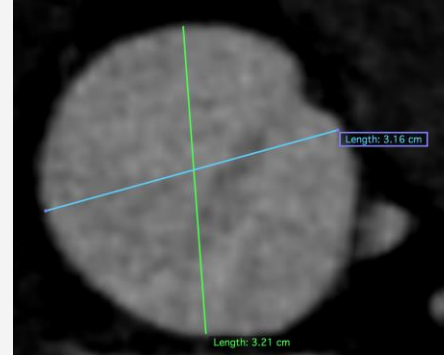
<Annulus> Perimeter 72.4mm



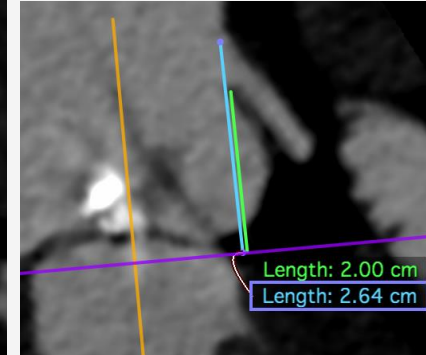
<SOV> 29-35mm



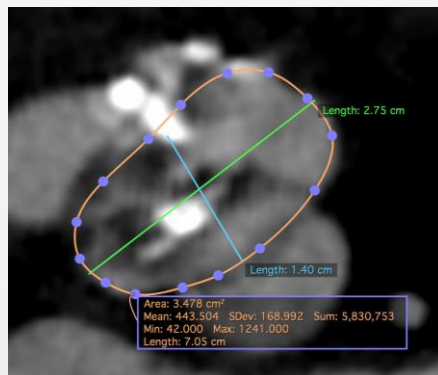
<STJ>



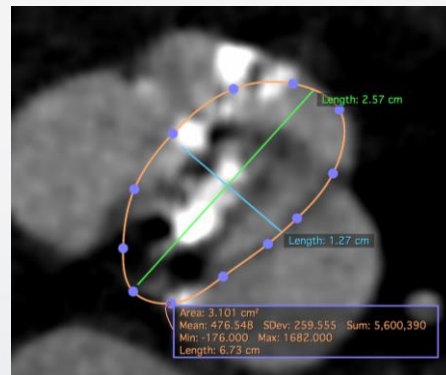
<Coronary(LM)>



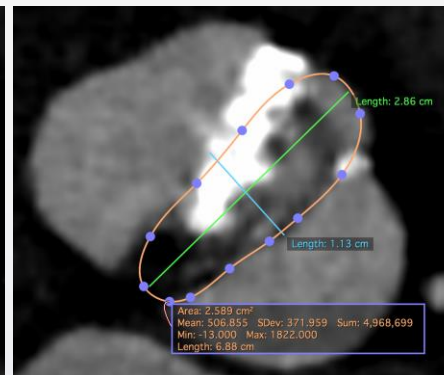
<2mm above annulus>



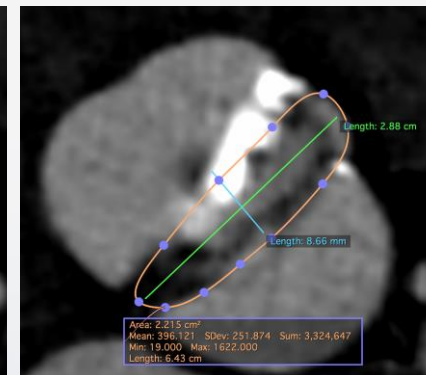
<4mm above annulus>



<6mm above annulus>



<8mm above annulus>

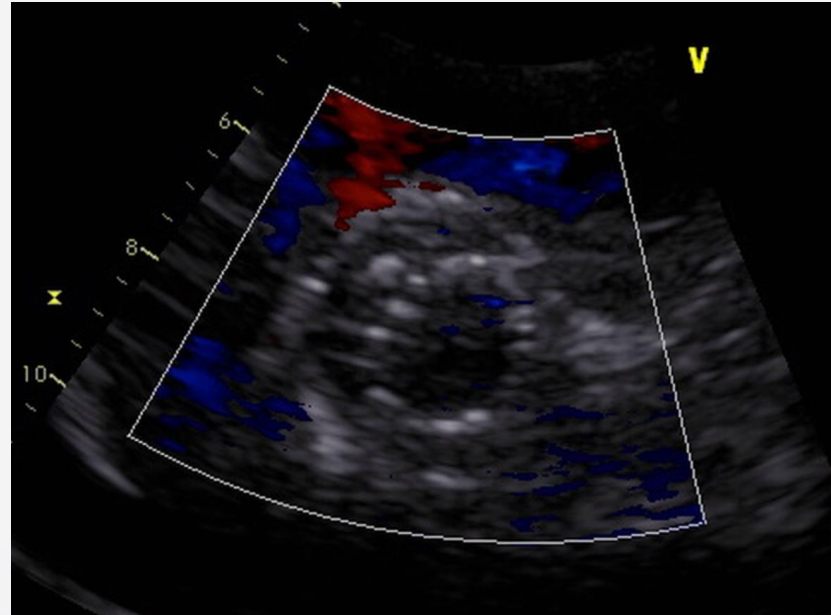
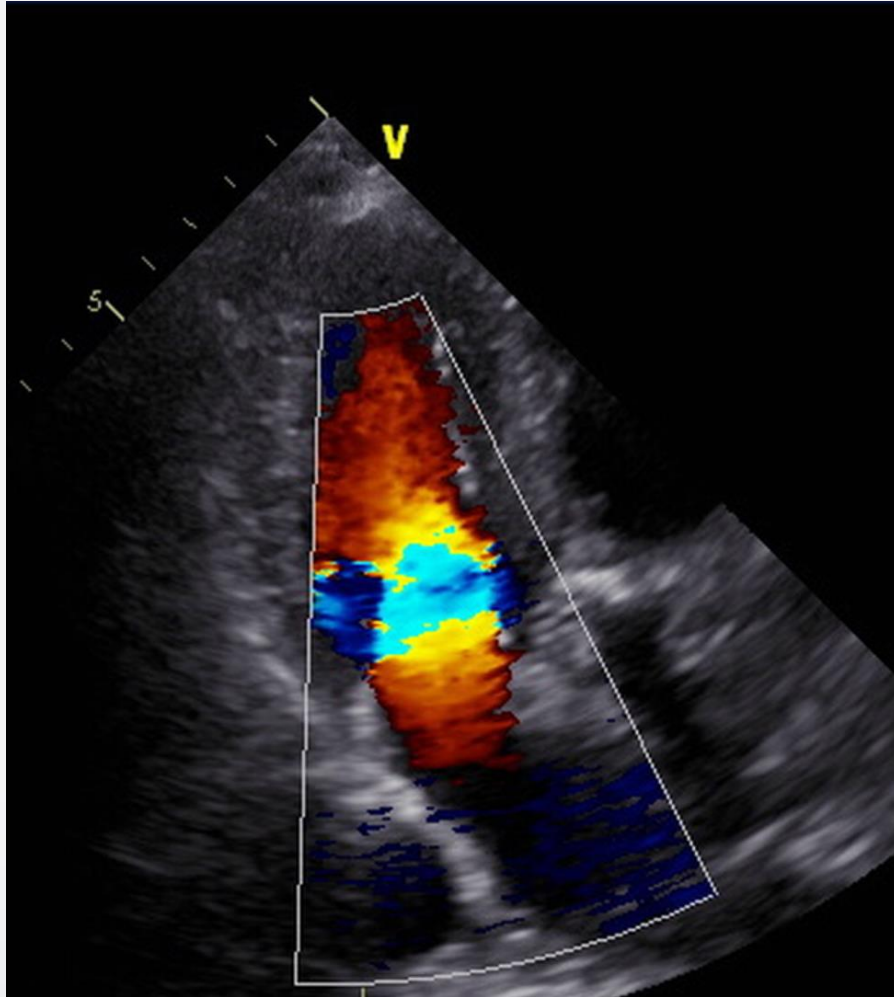


Supra-annular  
 measurement  
 Perimeter  
 67.3-70.5mm

# TAVI Procedure (Evolut R 26mm)

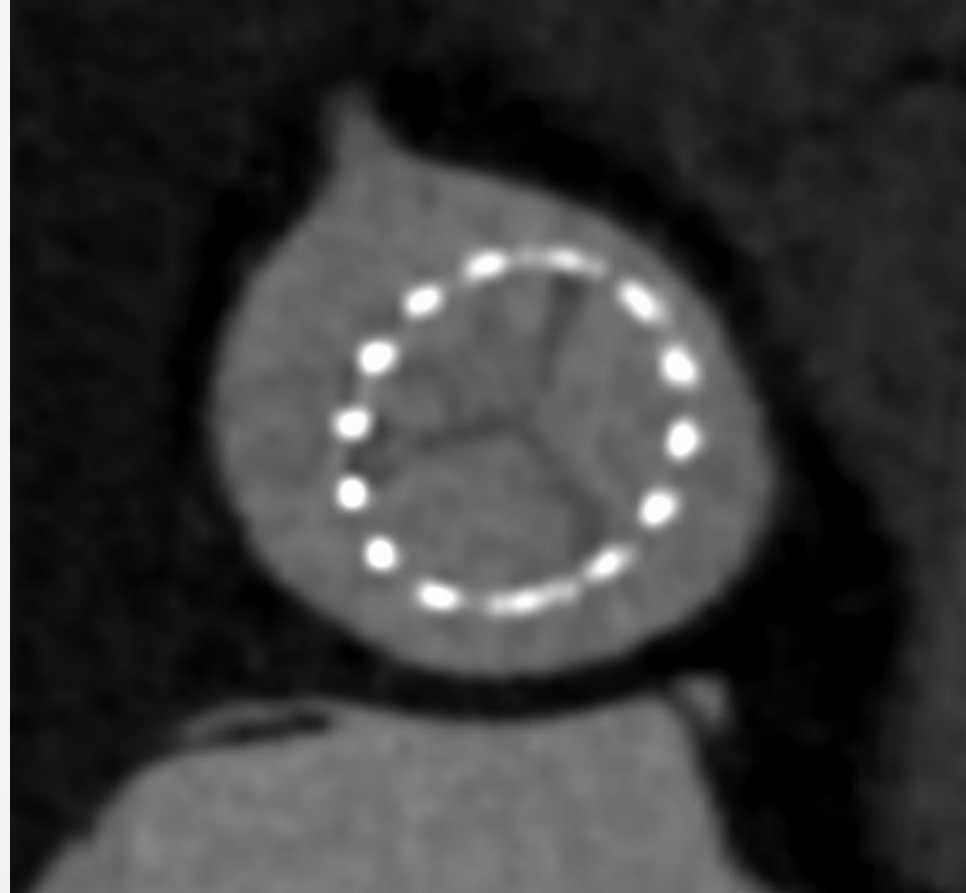
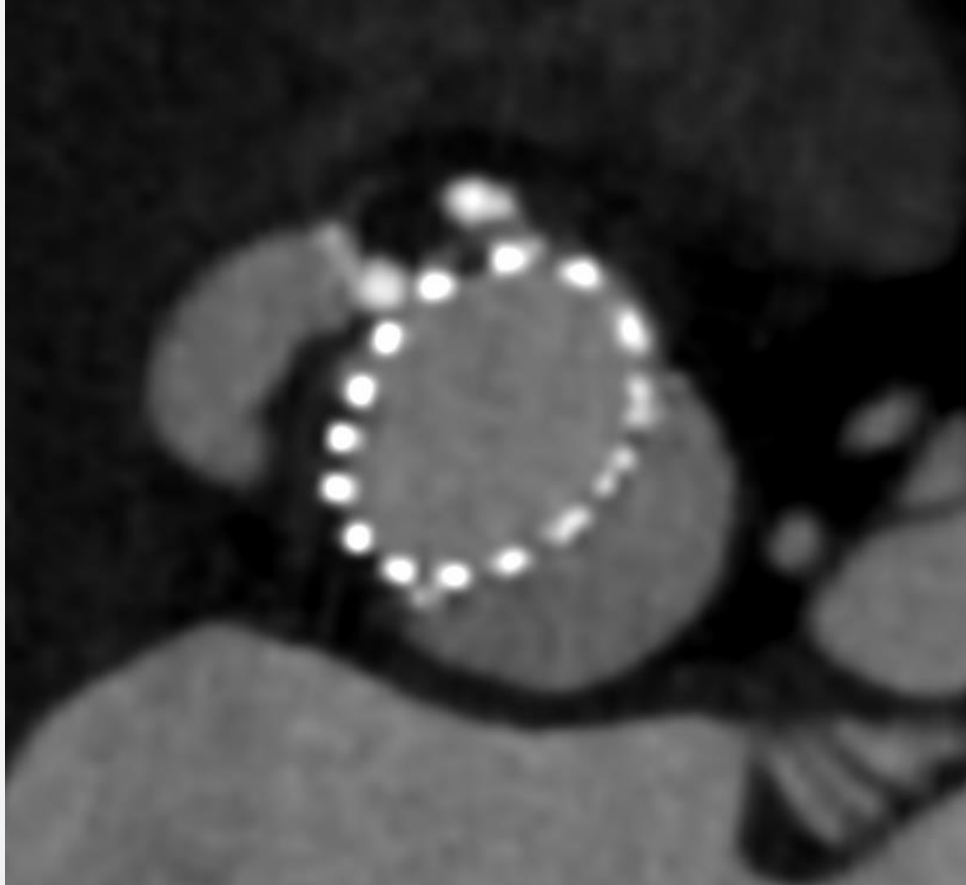


# Post-procedural echo



Trace-mild PVL  
mPG 6.2mmHg  
EOA 1.5cm<sup>2</sup>  
iEOA 0.92cm<sup>2</sup>/m<sup>2</sup>  
E/A < 1

# Post-procedural CT



No thrombus  
Commissure aligned  
Slightly elliptical?



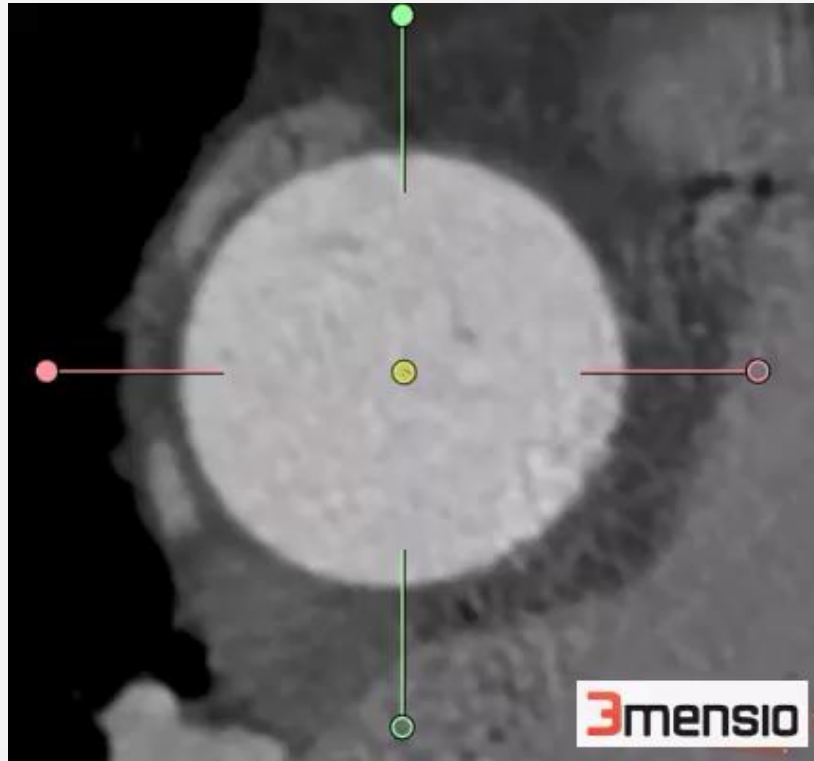
# TTE Follow-up

	Pre-TAVI	1 Month	1 Year	2 Year	3 Year
Vmax (m/s)	4.1	1.8	2.1	1.9	2.0
Mean PG (mmHg)	42.5	6.2	8.8	7.2	8.3
AVA (cm <sup>2</sup> )	0.8	1.5	1.2	1.3	1.6
D-dimer	0.5	1.3	1.6	2.8	1.5
BNP	69.2	39	27.1	29.6	56.8

# Serial CT Follow-up



Post TAVI



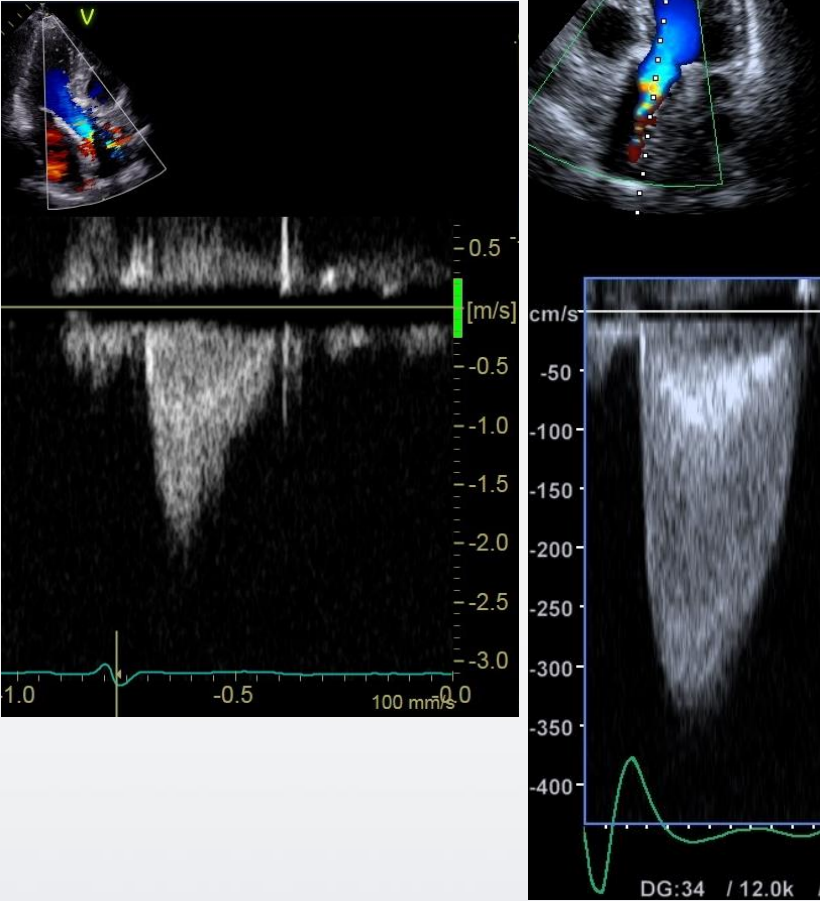
5 yrs after TAVI



6 Months after OAC

# Which modality to detect?

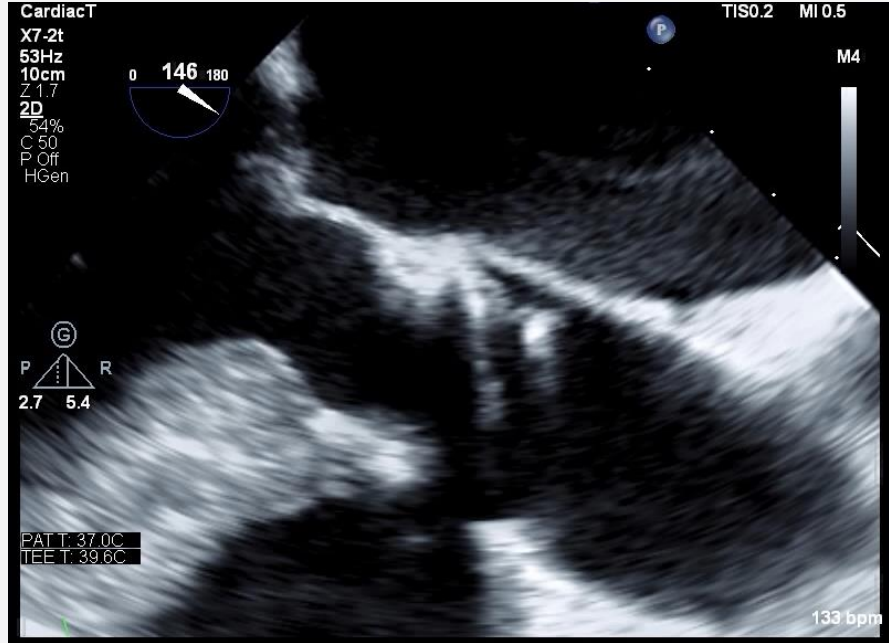
Screen with  
TTE



Confirm with CT/TEE

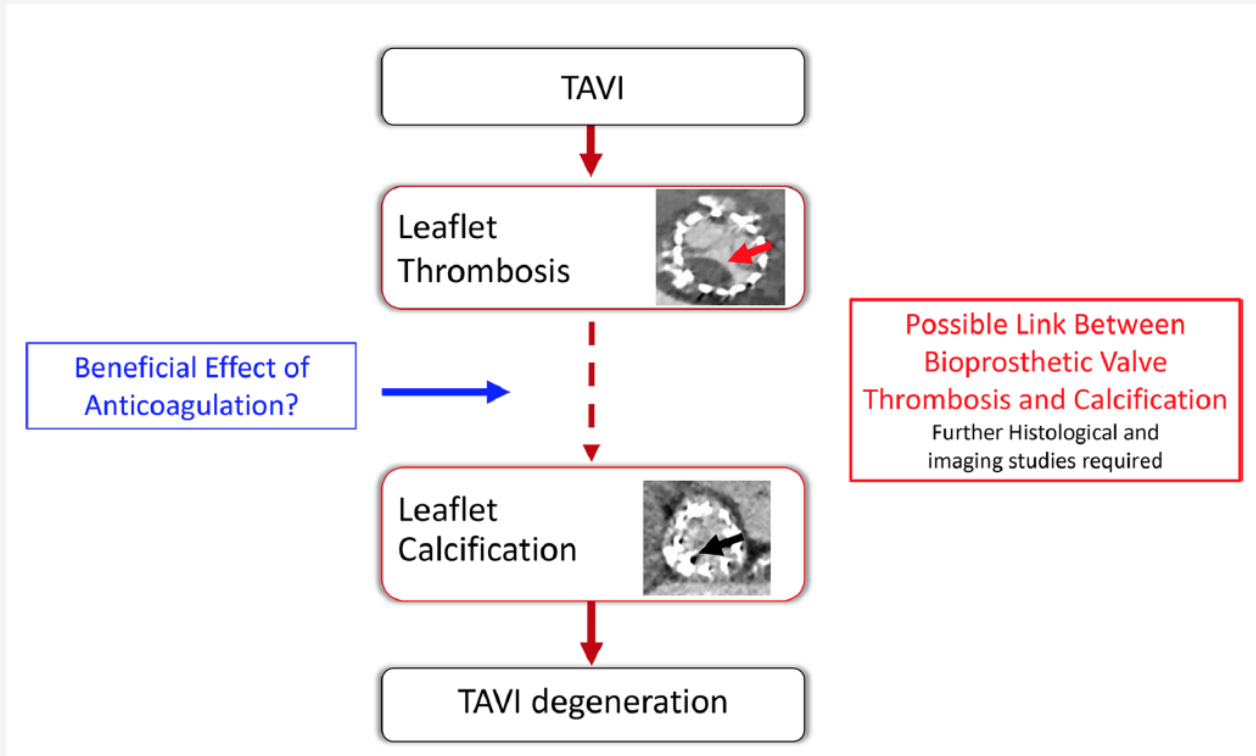


CT

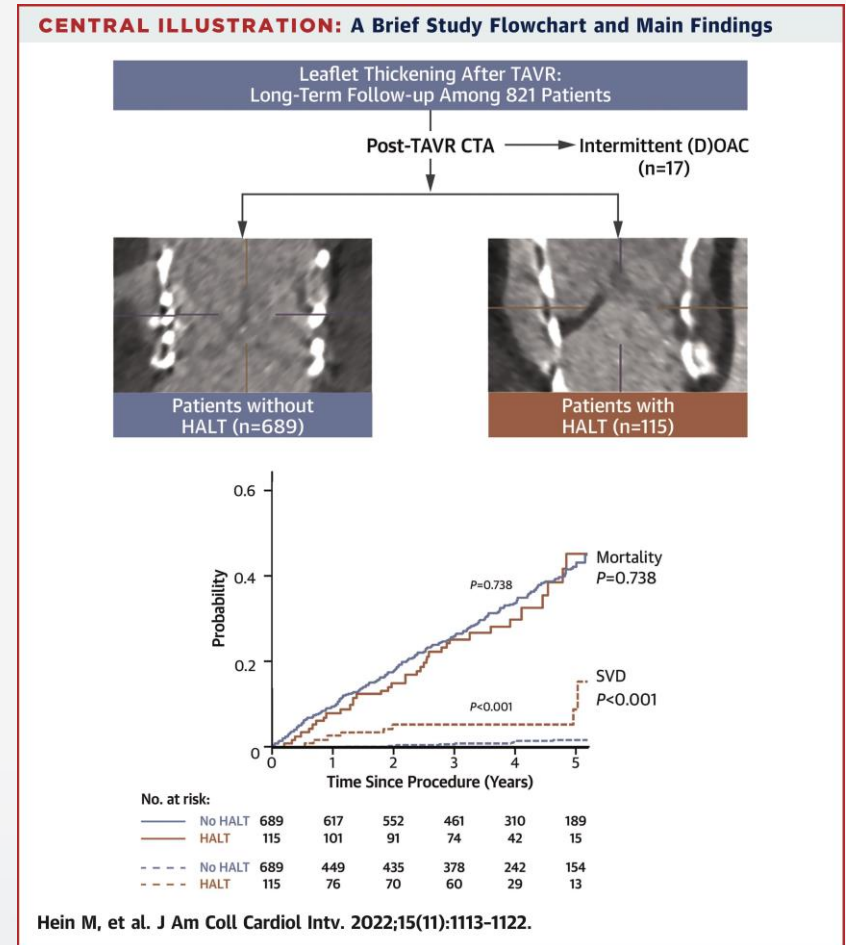


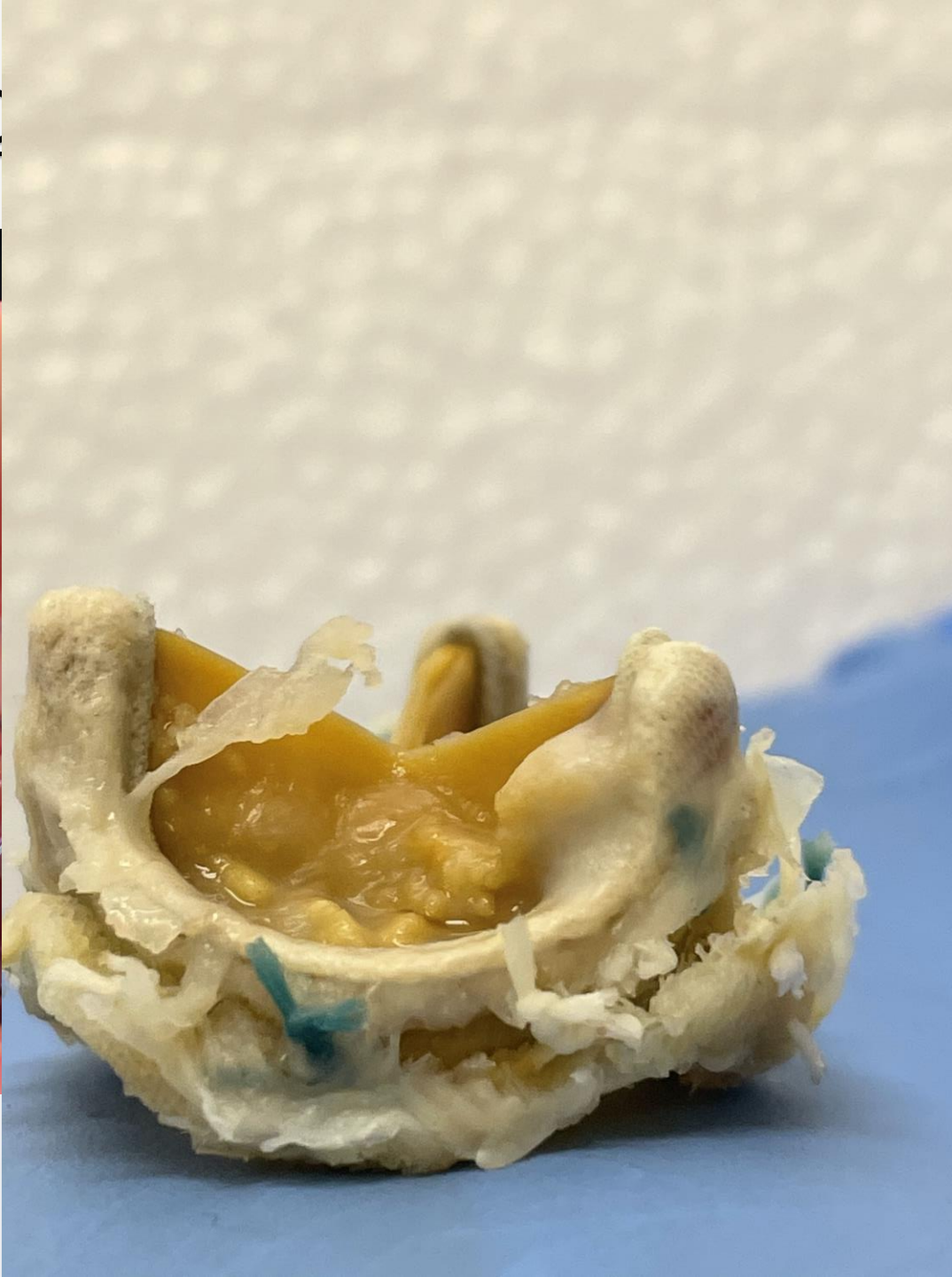
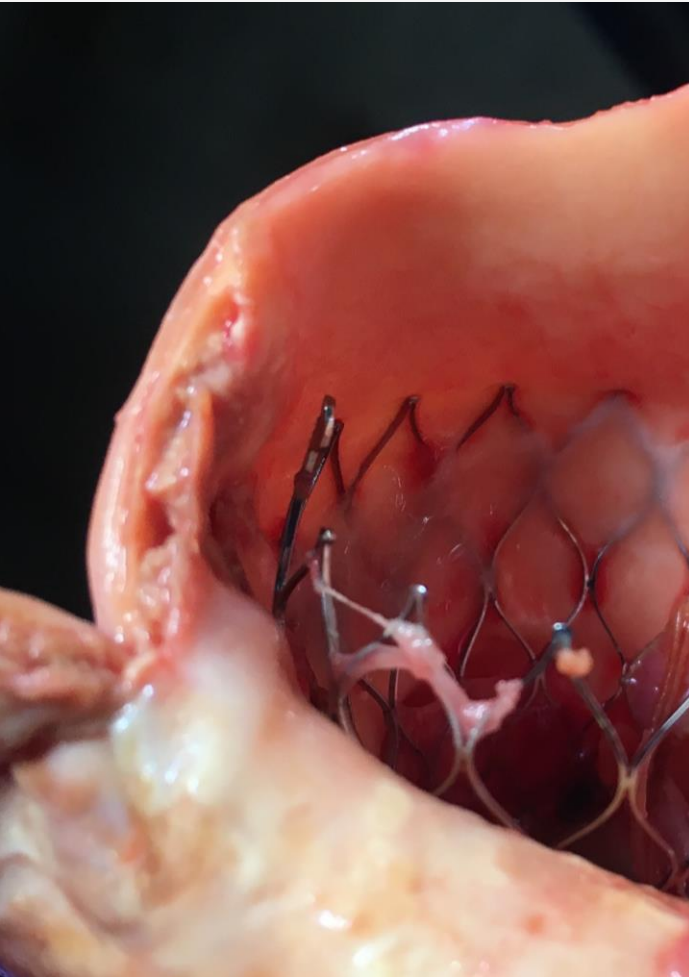
TEE

# Subclinical leaflet thrombosis and valve durability ?



Doris MK, et al. Heart 2018

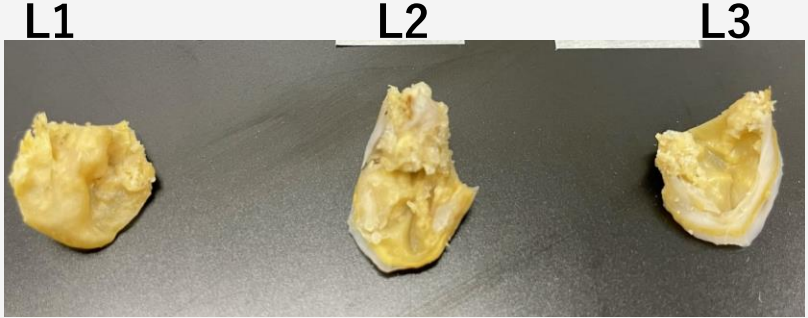




valve pathology

# CV-HILLS (CardioVascular Histo-Imaging AnaLyzing Laboratories)

**Aortic**



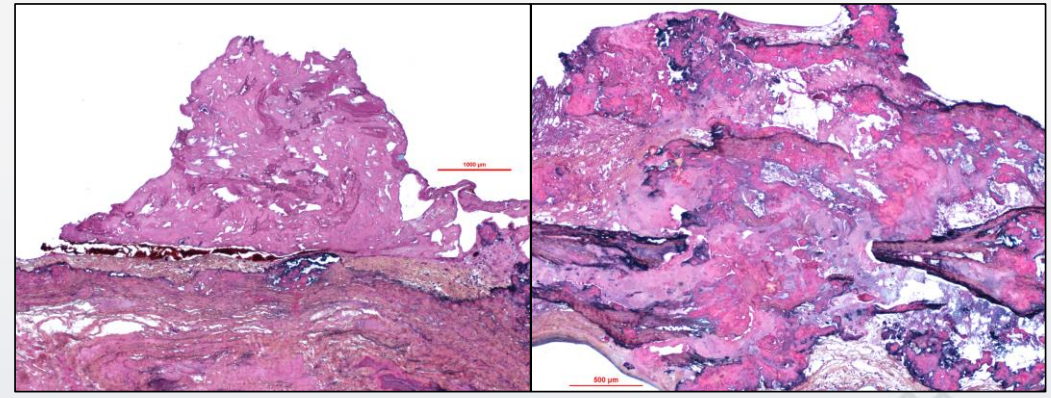
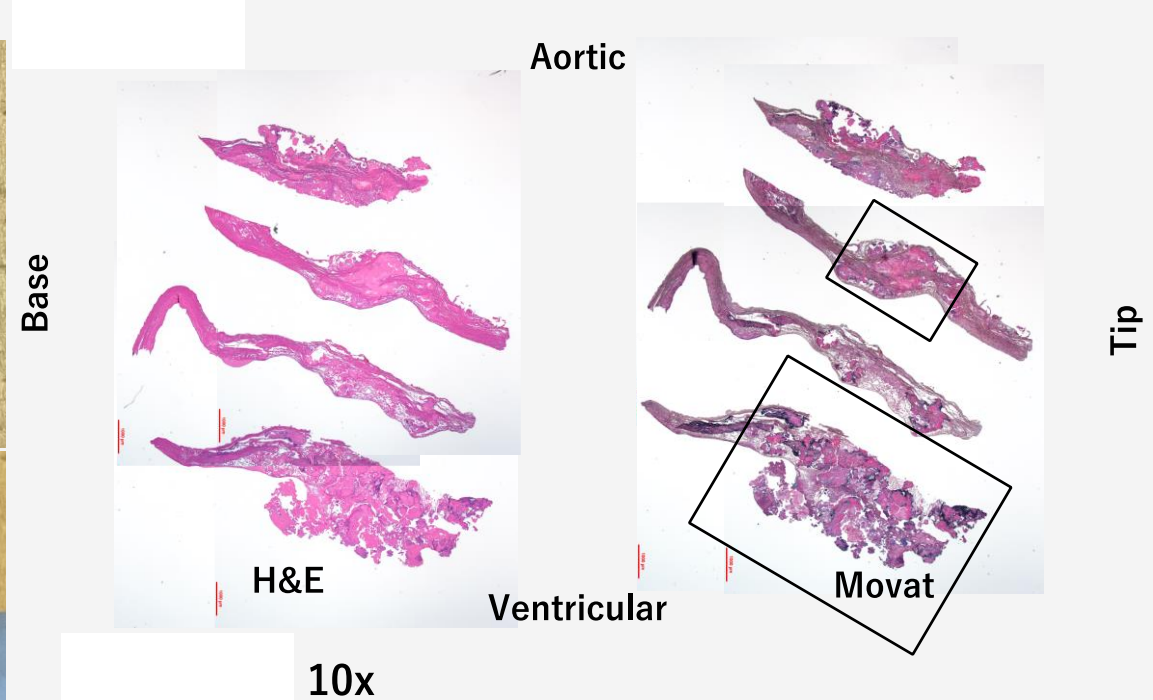
**Ventricular**



**XP**



**Sapien XT  
 SVD 7yrs**



# Conclusion

- ✓ Valve thrombosis COULD happen along the follow-up
- ✓ Screen with TTE, confirm with CT/TEE
- ✓ Clinical valve thrombosis should be intervened (Anti-coagulation)
- ✓ Whether subclinical valve thrombosis translates to valve durability needs further clinical investigation/ follow-up