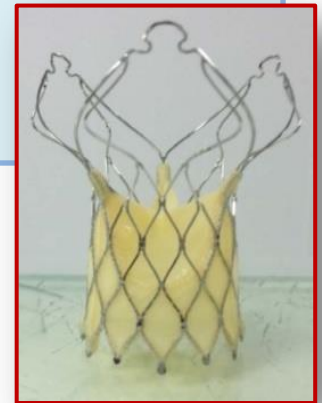




All That TAVI

Early Experiences with Hydra Valves in Thailand



Wacin Buddhari, MD

On Behalf of Chula TAVI Team

King Chulalongkorn Memorial Hospital
Bangkok, Thailand



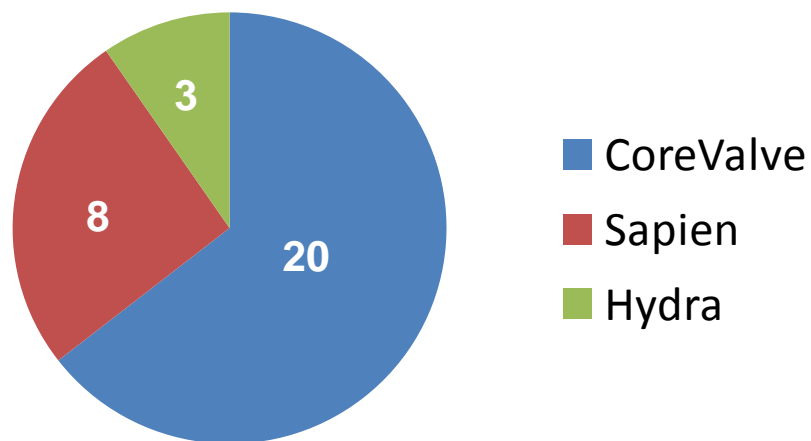
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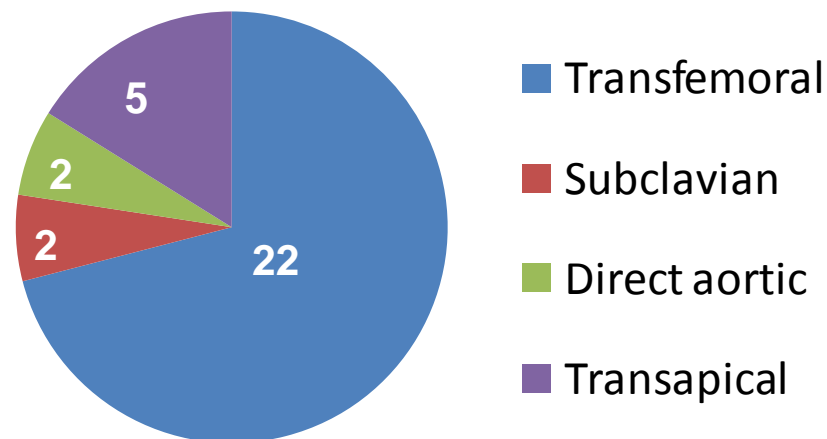
TAVI at KCMH

- Dec 9th, 2010 – July 9th, 2014
- 31 cases underwent TAVI

Type of Valve



Access Site



4/22 Transfemoral → percutaneous



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Characteristics



- The HYDRA consists of nitinol frame with bovine pericardial leaflets
- Three tentacles(antenna) provide flexible anchors at the outflow which provides conformability to the shape of the aorta
- The inflow section of the frame exerts a high radial force to ensure safe anchoring



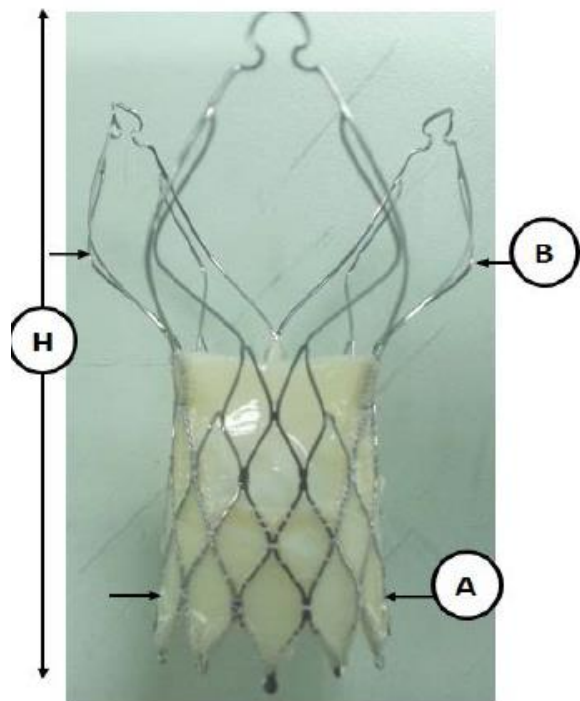
The Bioprosthesis



- Made from single bovine pericardium. The valve is sutured to the frame in a tri leaflet configuration
- Leaflet is designed to function in various shape or dimensions



Dimension and Sizing



	HYDRA22	HYDRA26	HYDRA30
Diameter (A)	22mm	26mm	30mm
Diameter(B)	36mm	43mm	45mm
Height(H)	55mm	53mm	51mm
For annulus size:	18, to 20 mm	20 To 24 mm	24 to 28 mm



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Delivery System



- The distal part of the catheter is 18F and accommodates the bioprosthesis
- The catheter handle has a rotating knob for slow progressive sheath movements
- The valve can be retrieved back into the sheath after positioning and 70 % deployment

Current Status: Hydra Valve

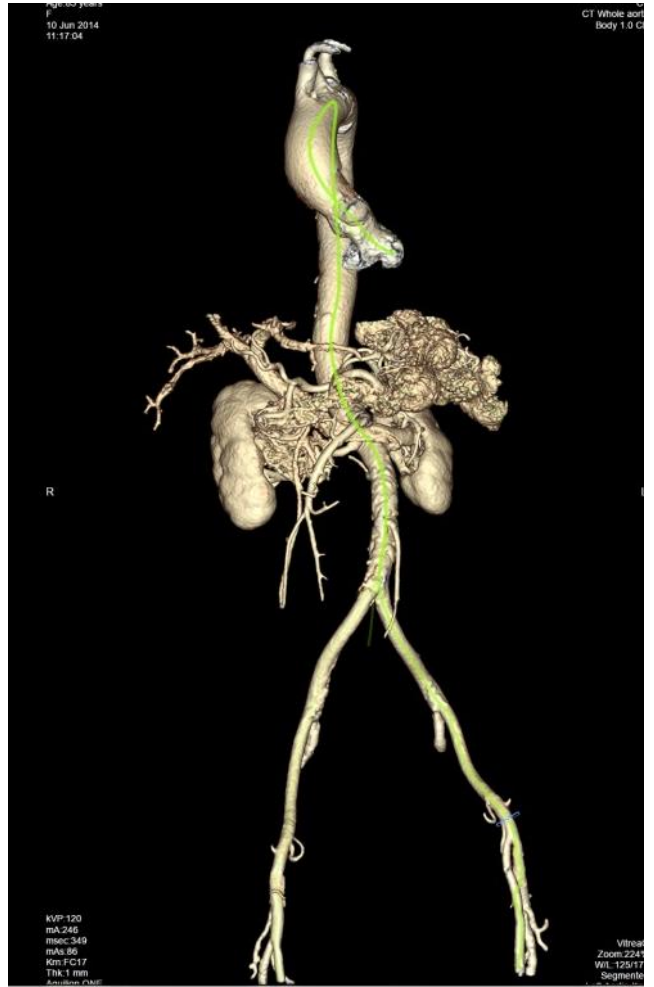
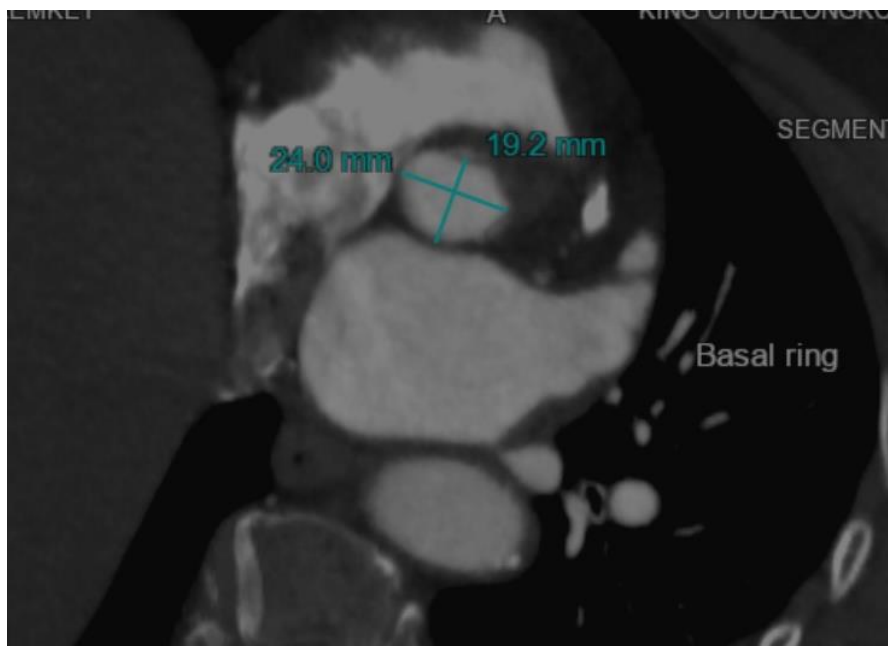
- By Vascular Innovations (Cocoon devices) – Thailand-based company
- Animal Study completed (University of Copenhagen, Denmark)
- Valve manufacturing: Germany → Thailand (2015)
- FIM planned for 100 patients, already started in Vietnam and in Thailand



Hydra Case No. 3

- An 85 y/o female patient
- HTN, DM, DLP, CAD with previous PCI
- NYHA Class 3
- Mean PG = 44, AVA = 0.6, EF = 81%
- Annulus = 20 mm (by TTE), 19.2 x 24 mm (by CT)
- Logistic EUROSCORE II = 5.5
- STS = 6.5

CT

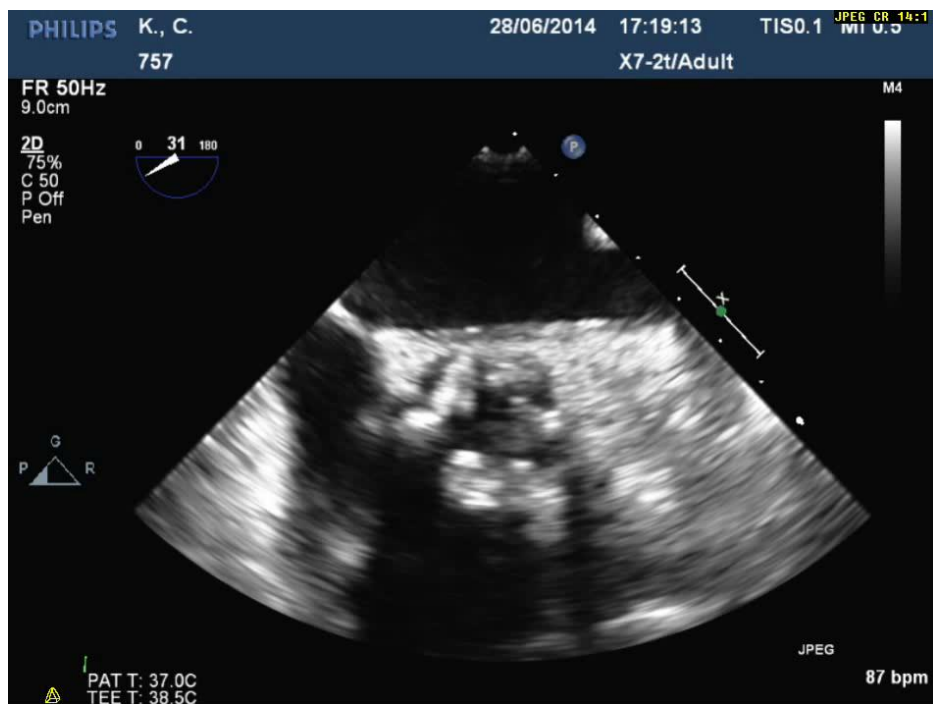
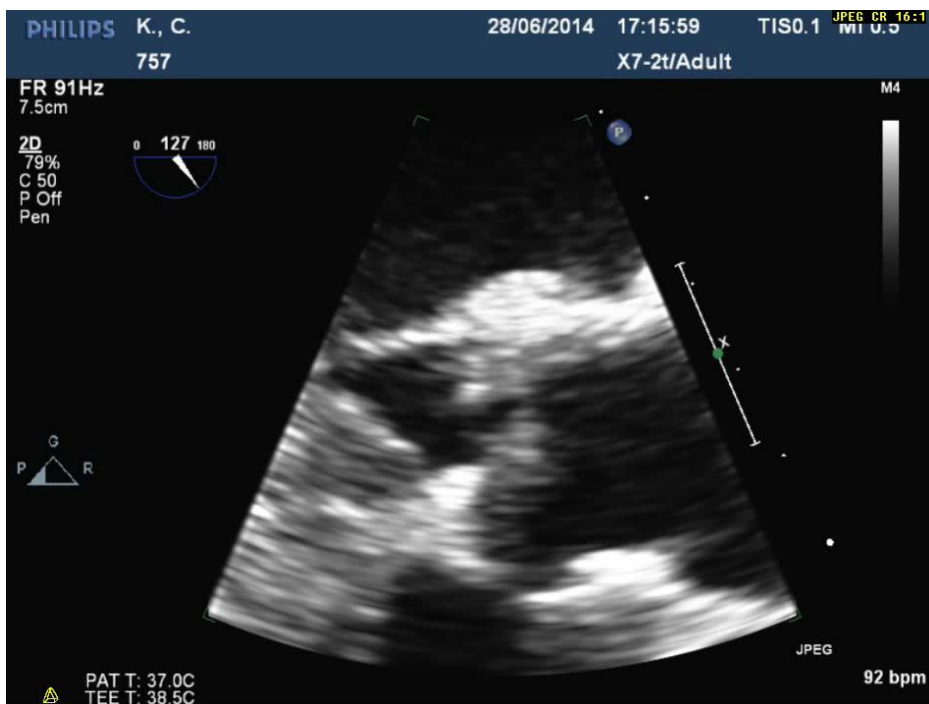




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TEE: Pre-

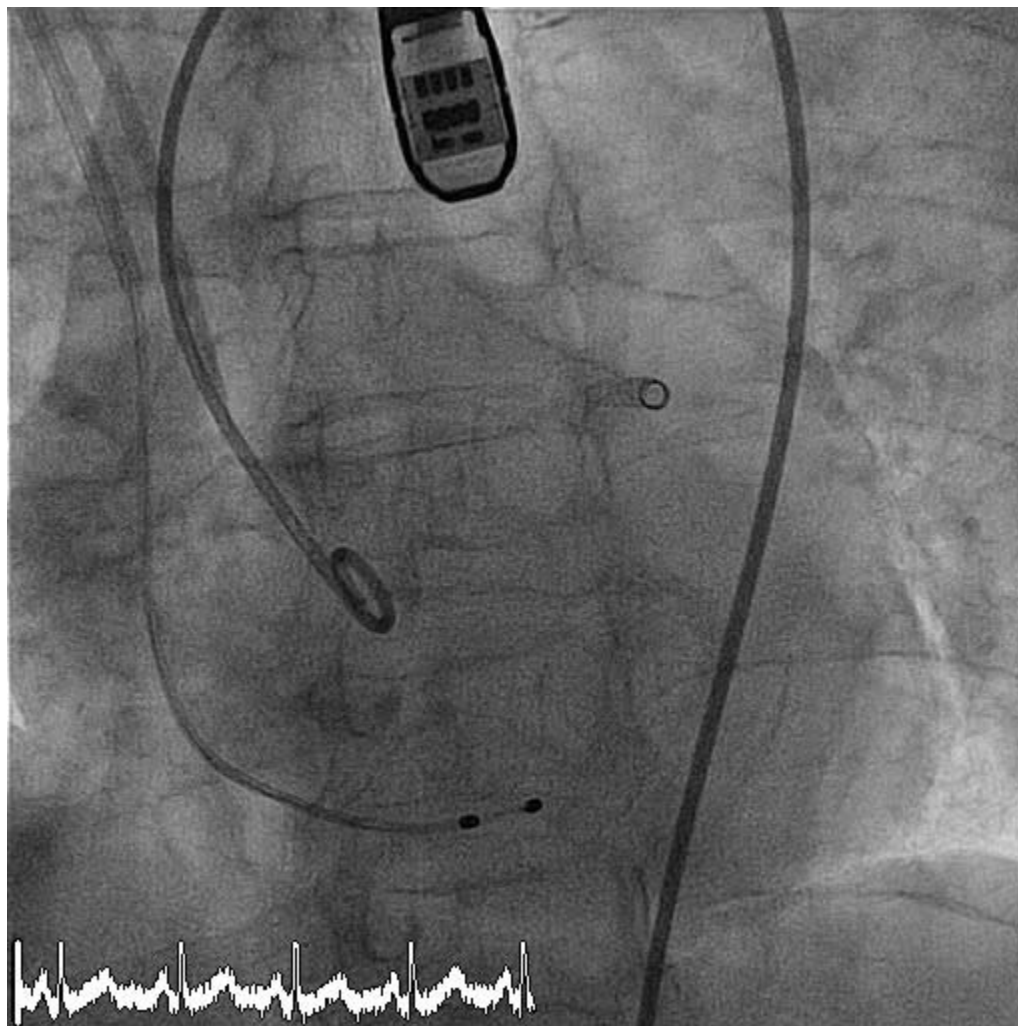




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Aortogram: Pre-

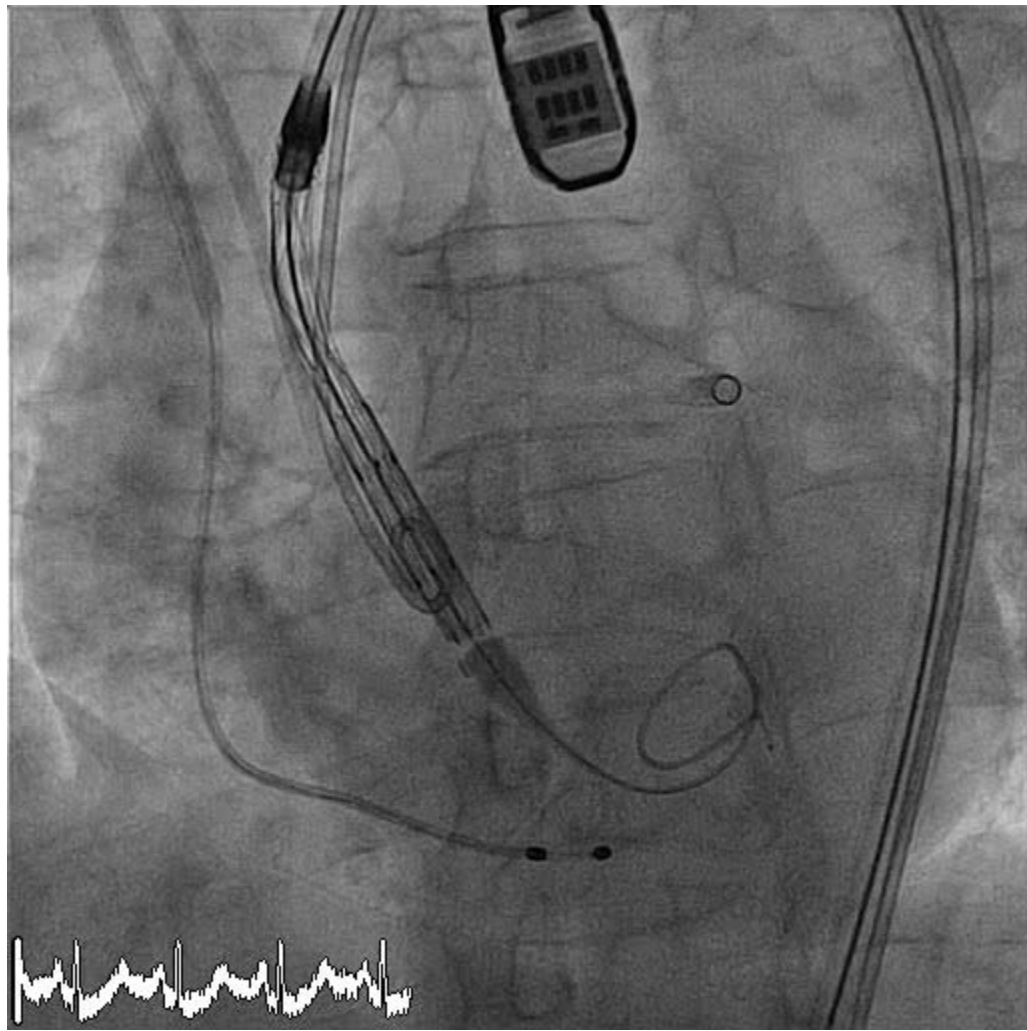




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Positioning: Hydra 26 mm

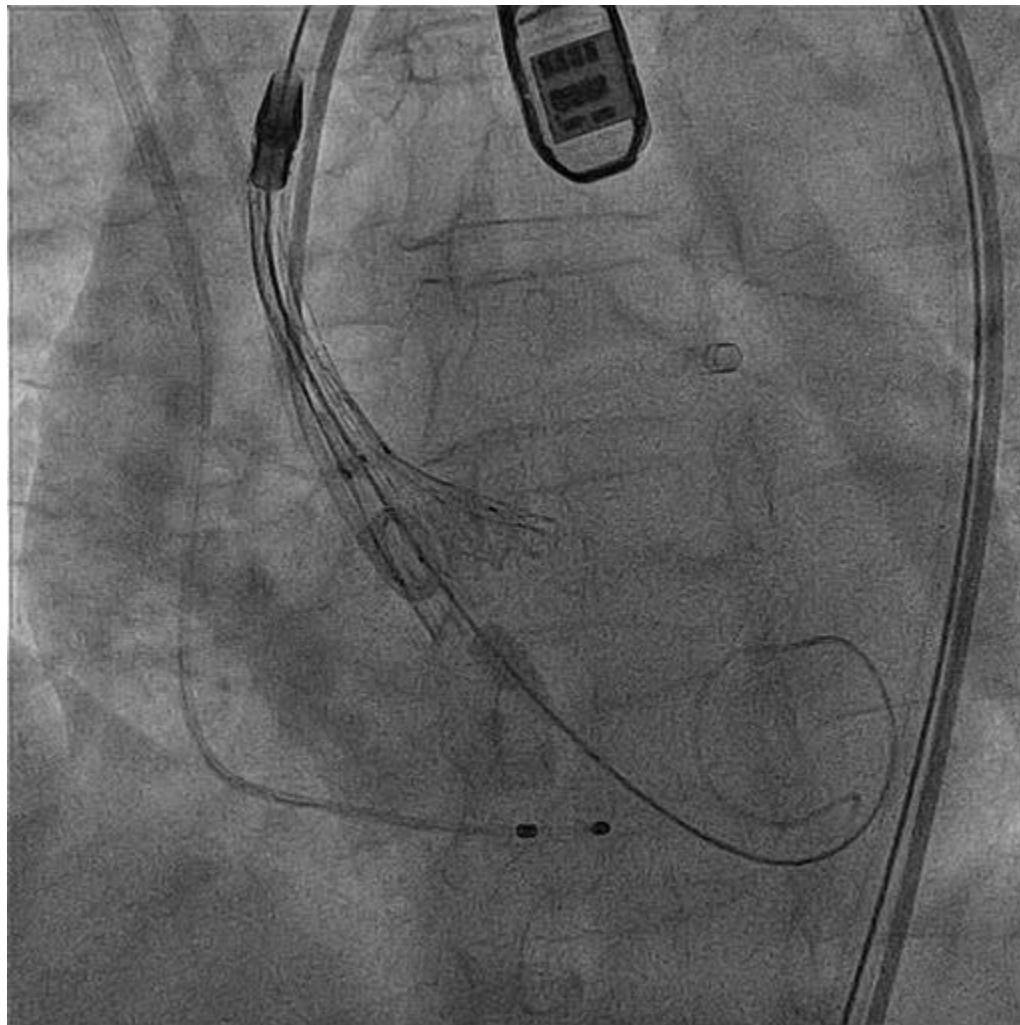




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Deployment



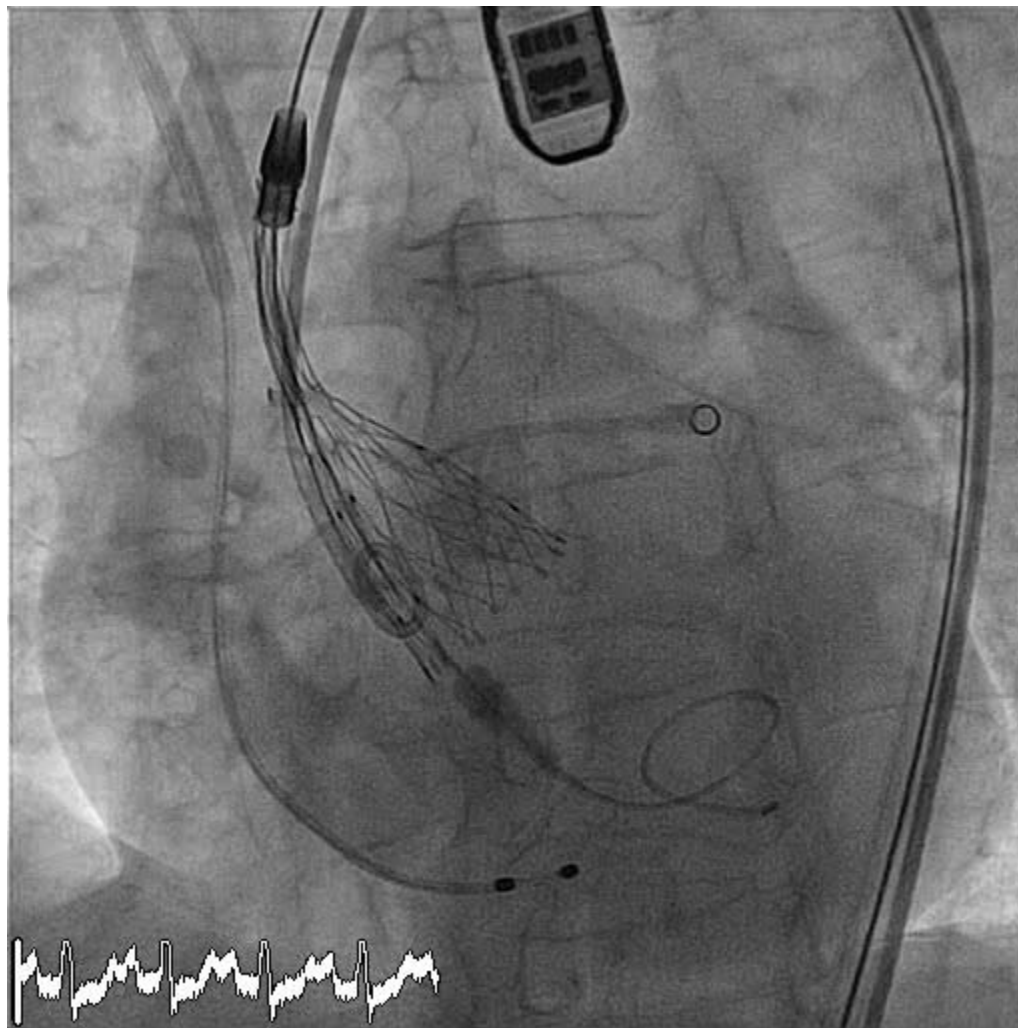


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Position after 2/3 deployed

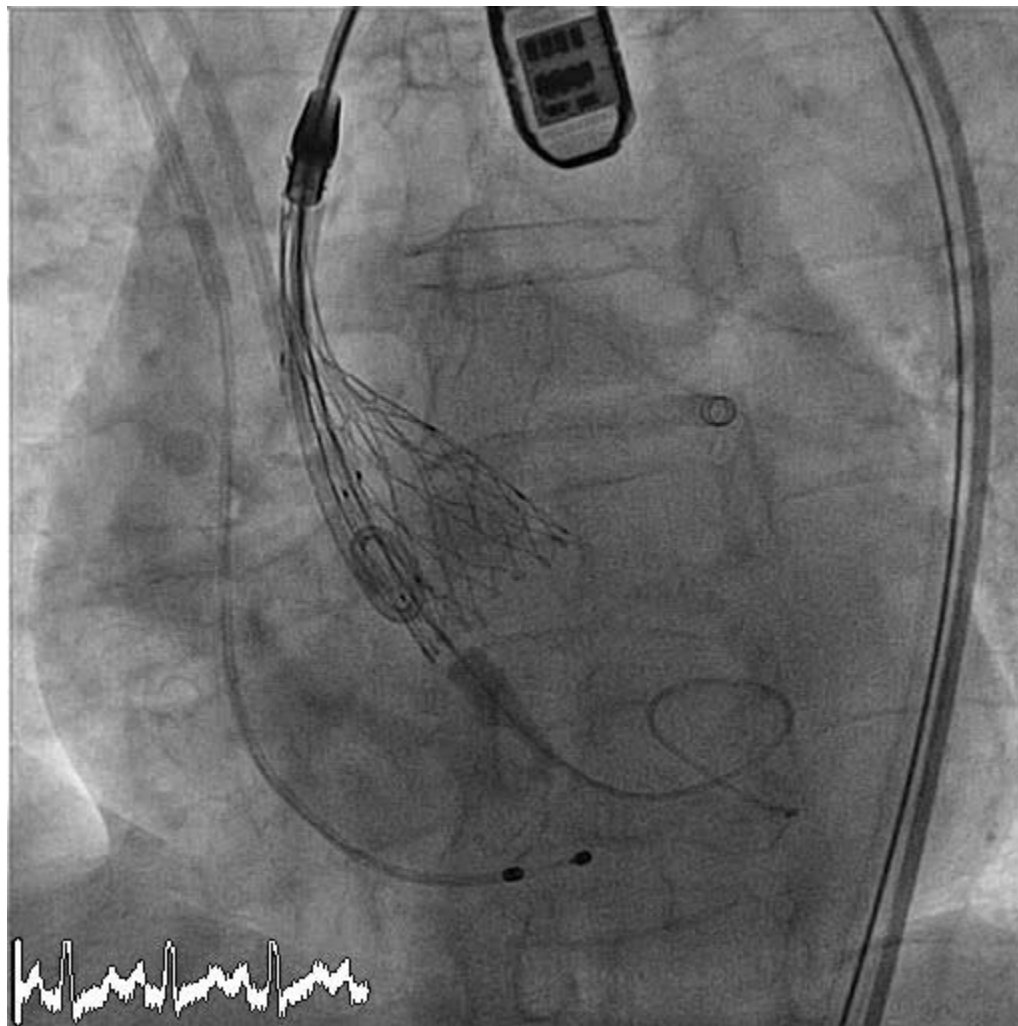




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Re-positioning

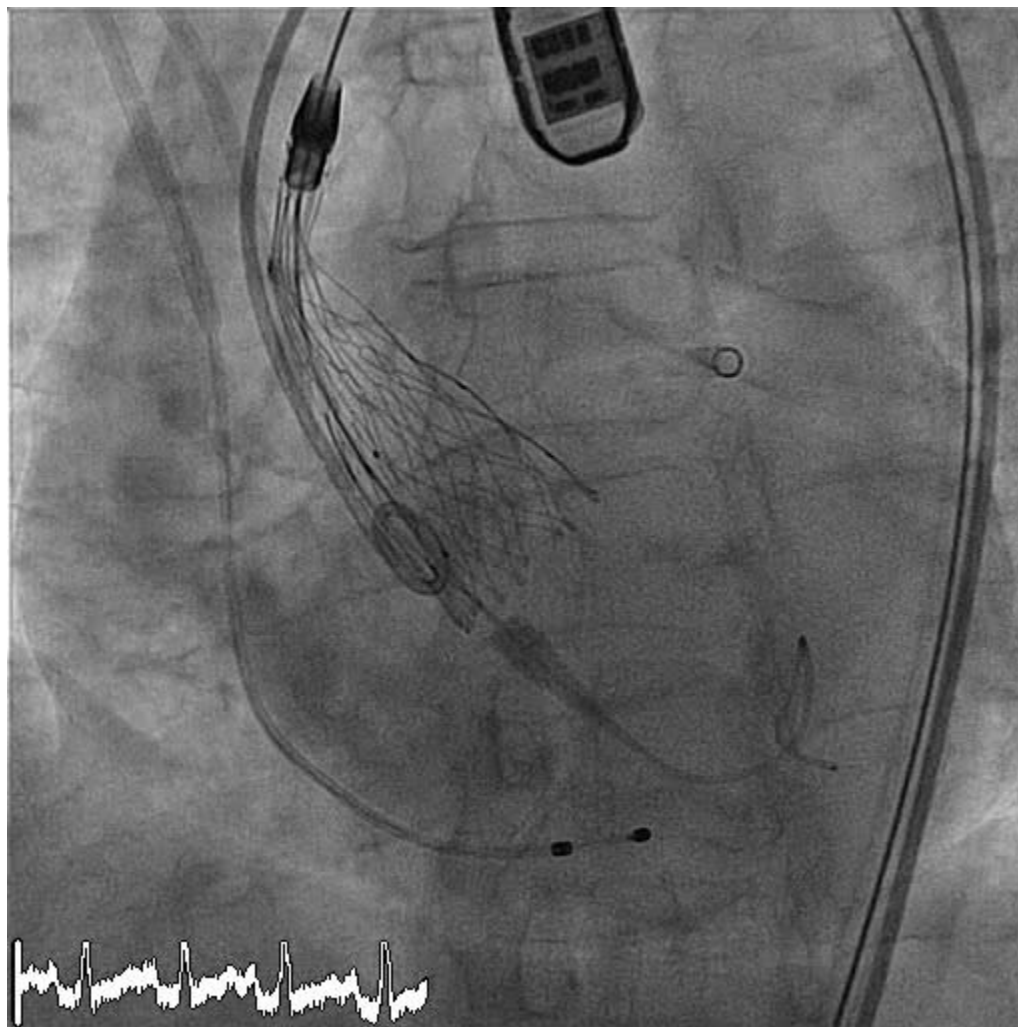




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Re-positioning

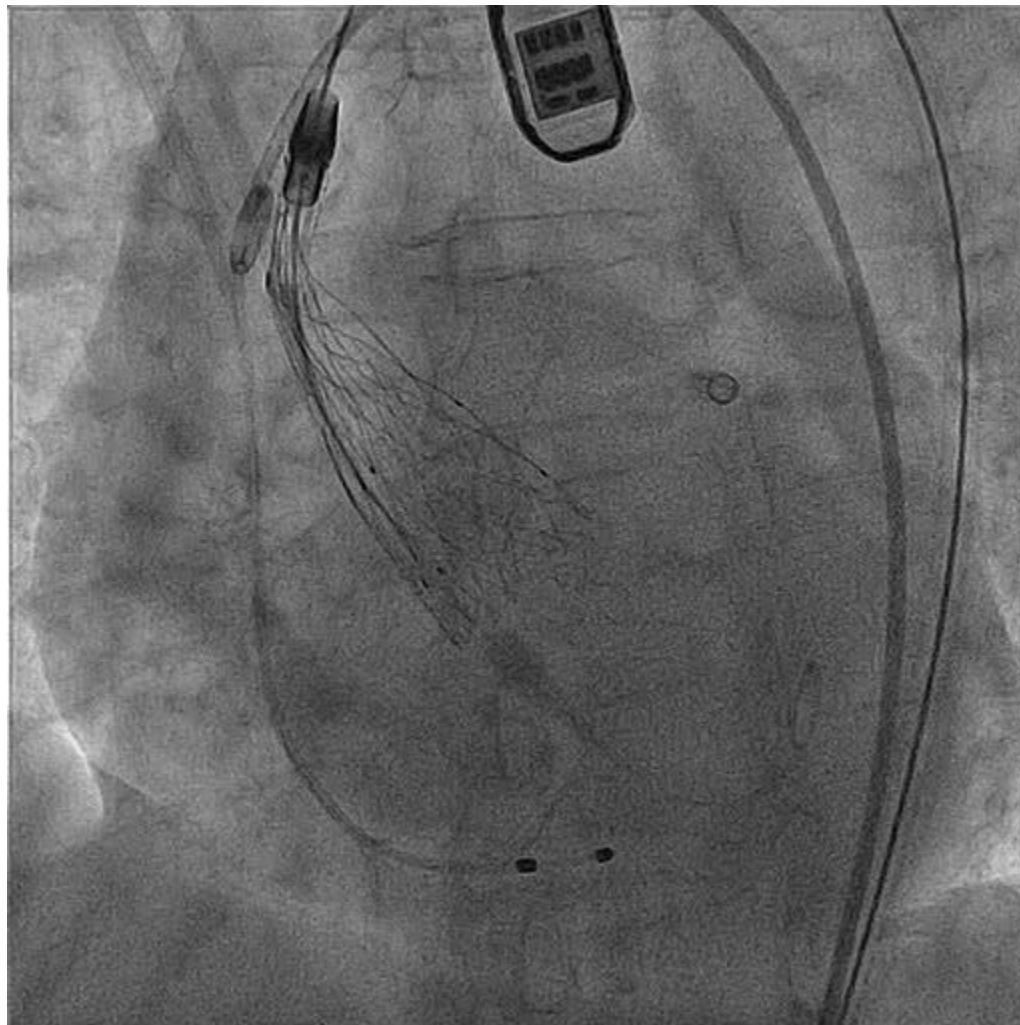




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Final Deployment

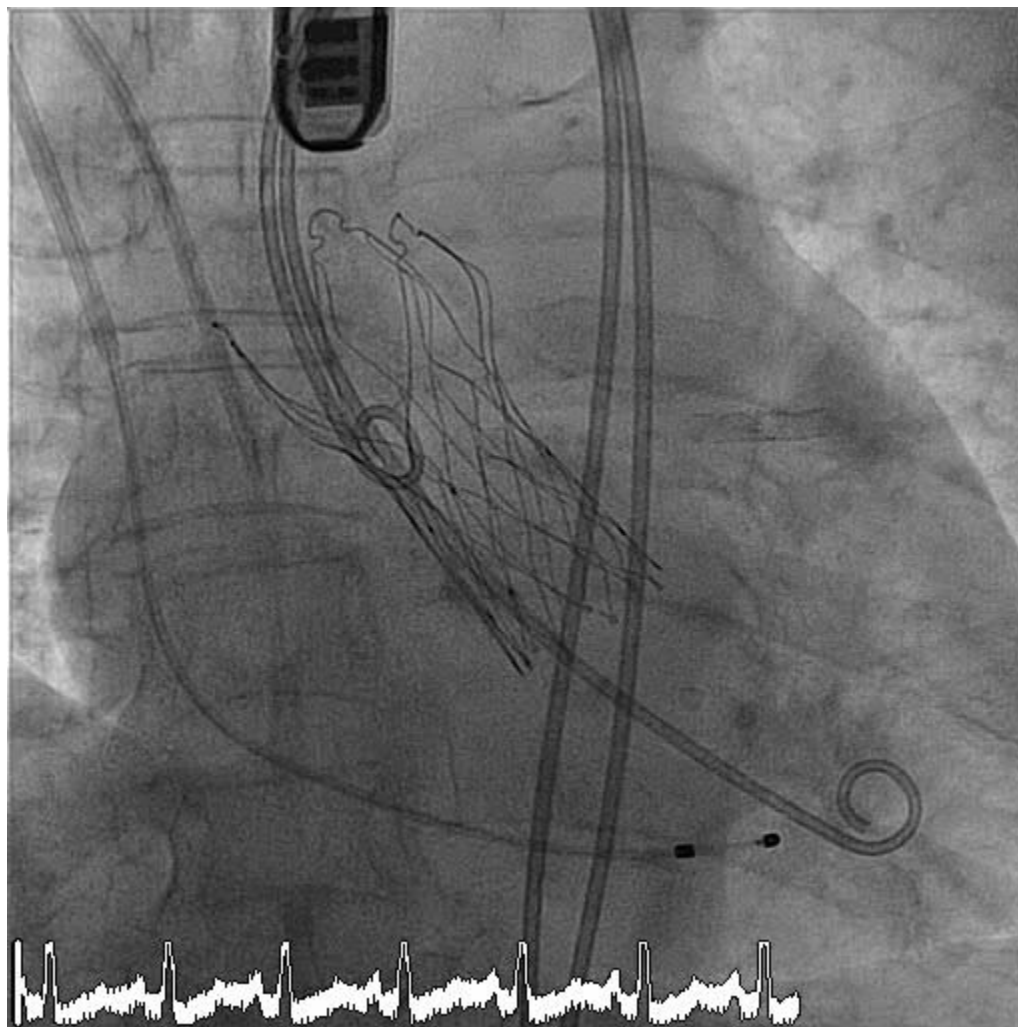




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Aortogram: Post-

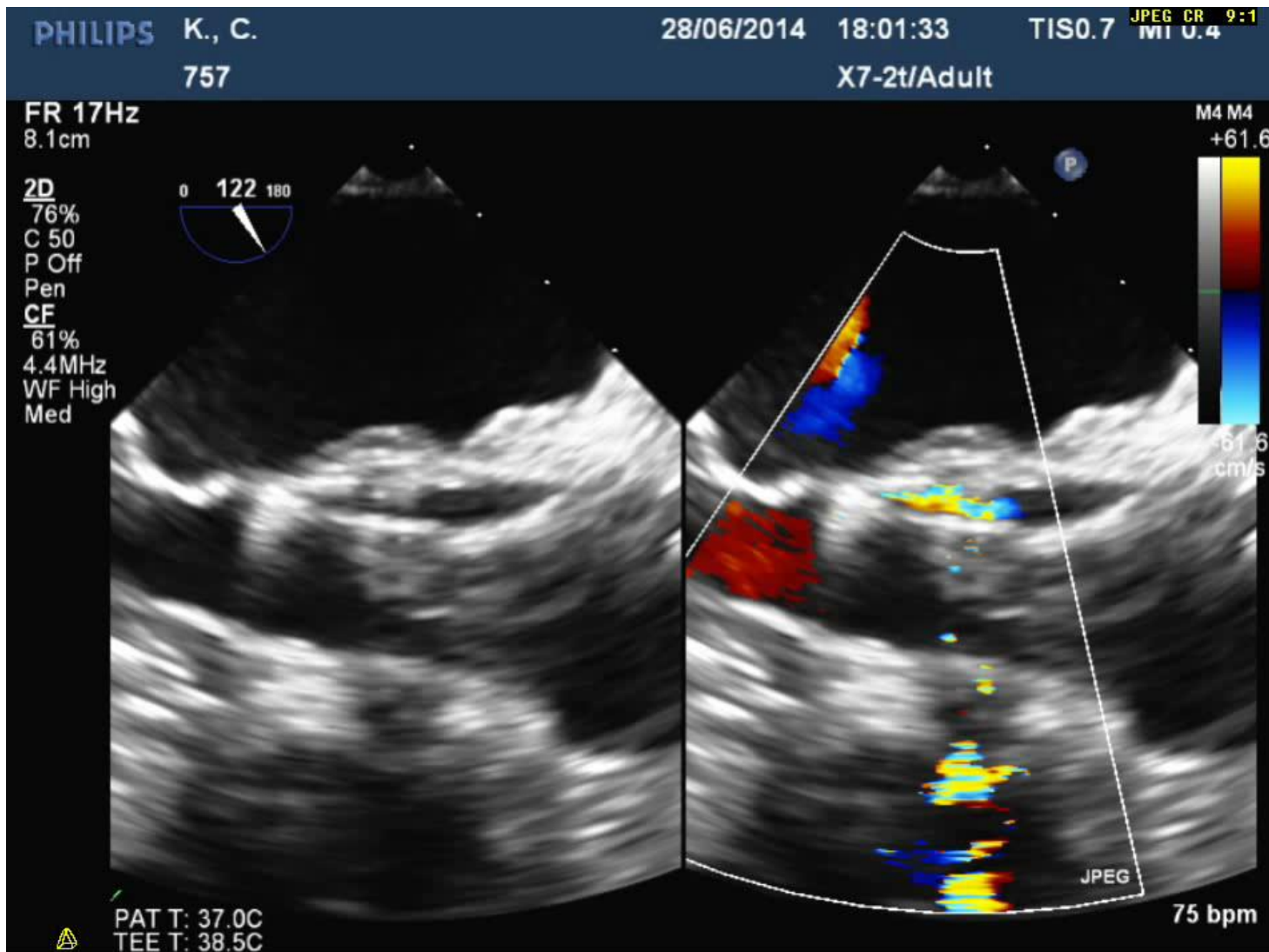




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TEE: Post-

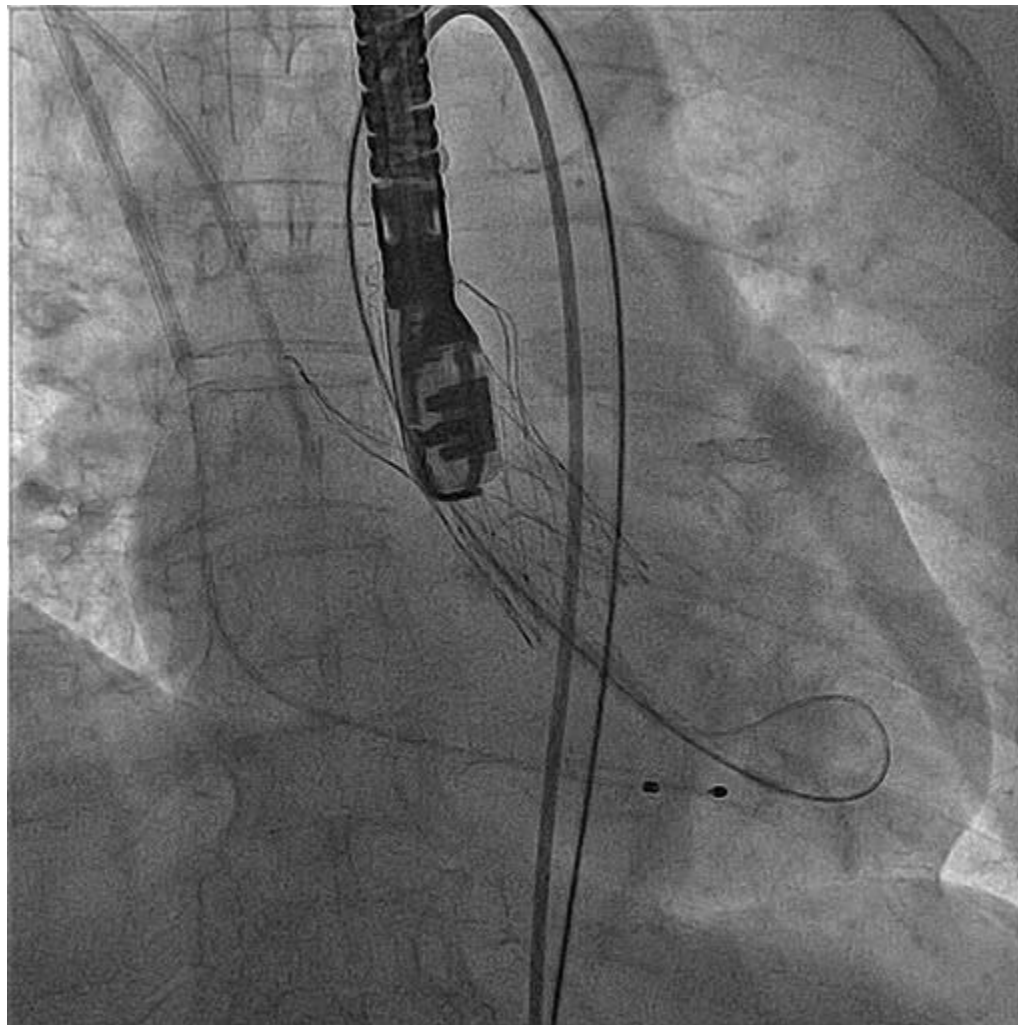




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Post Dilatation with 22 mm Balloon

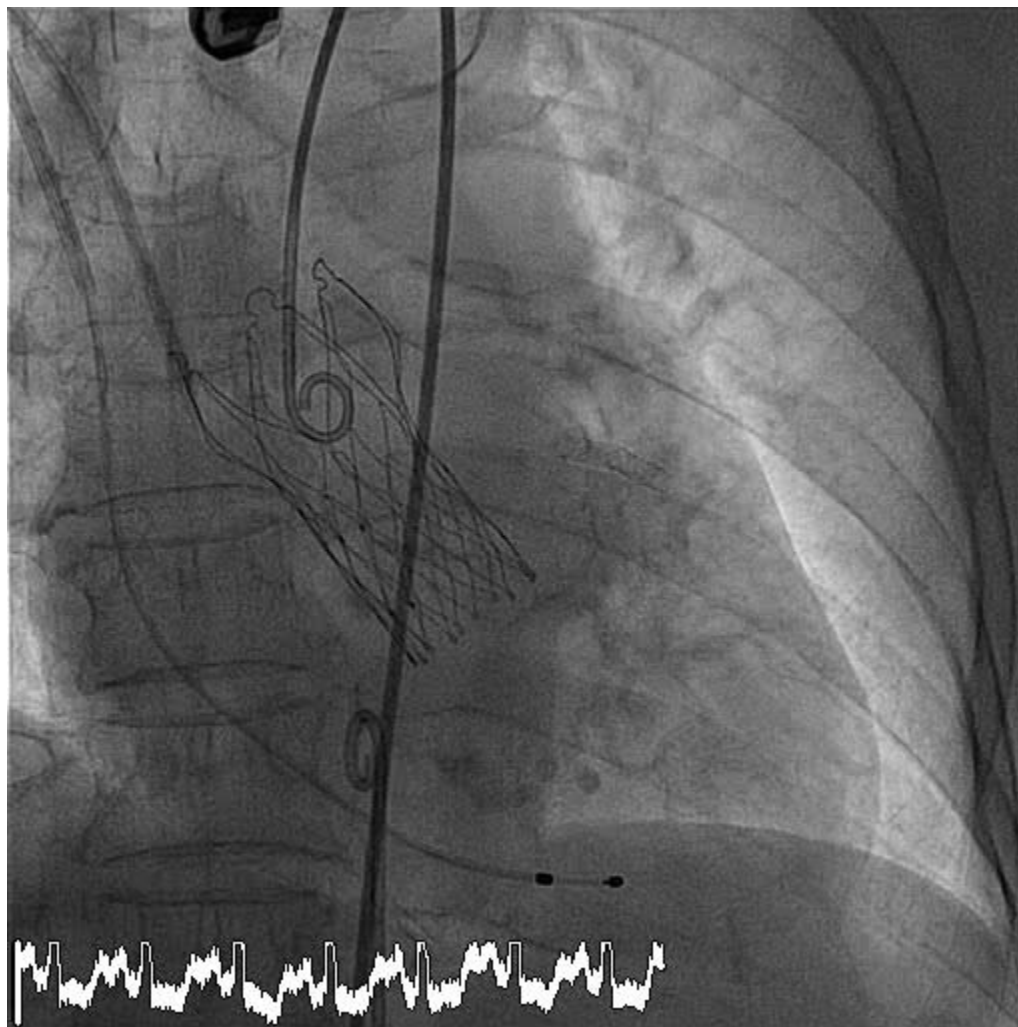




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Aortogram: Final

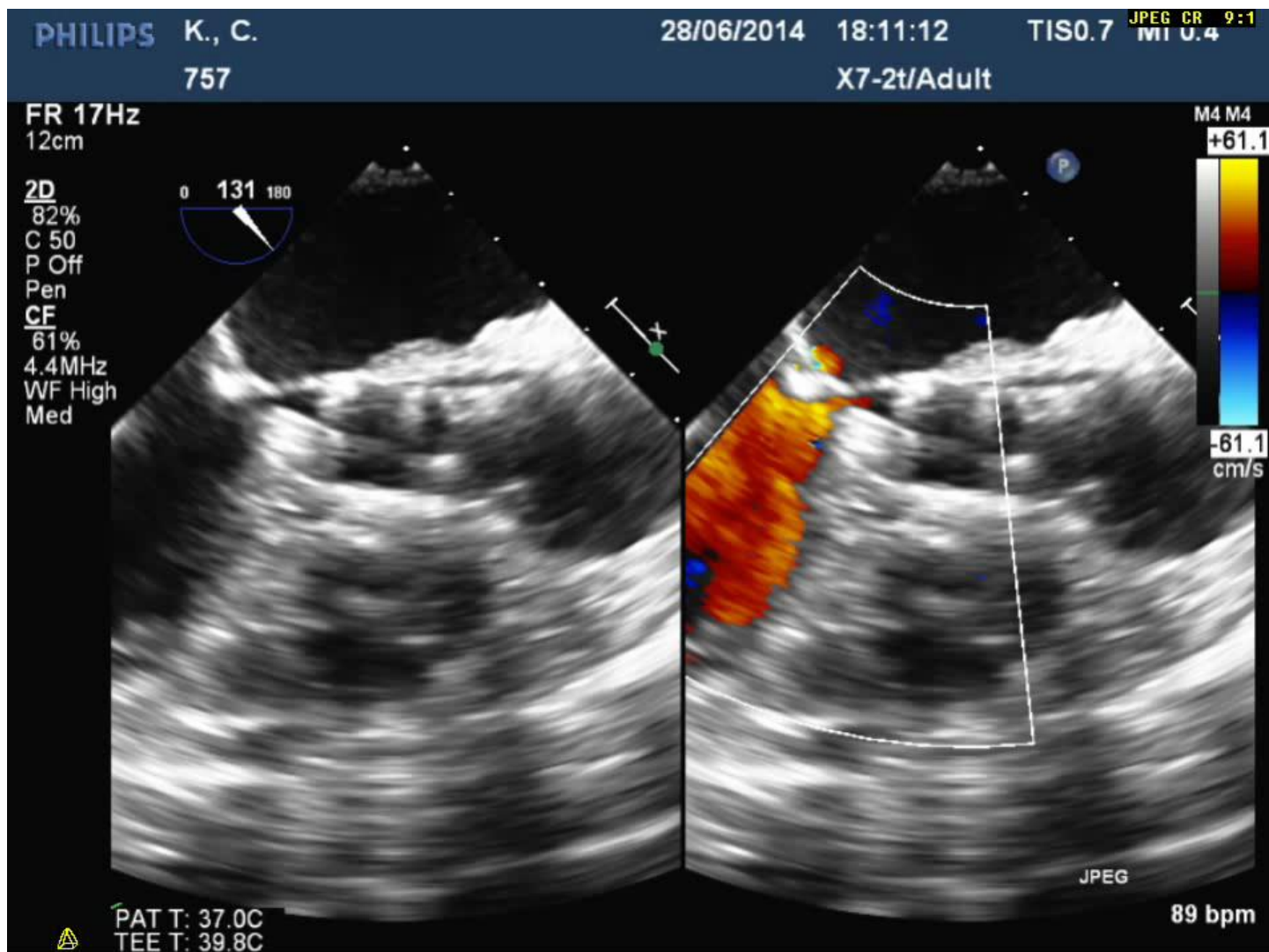




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THE YAU JEE CHAI CLINIC



TEE: Final

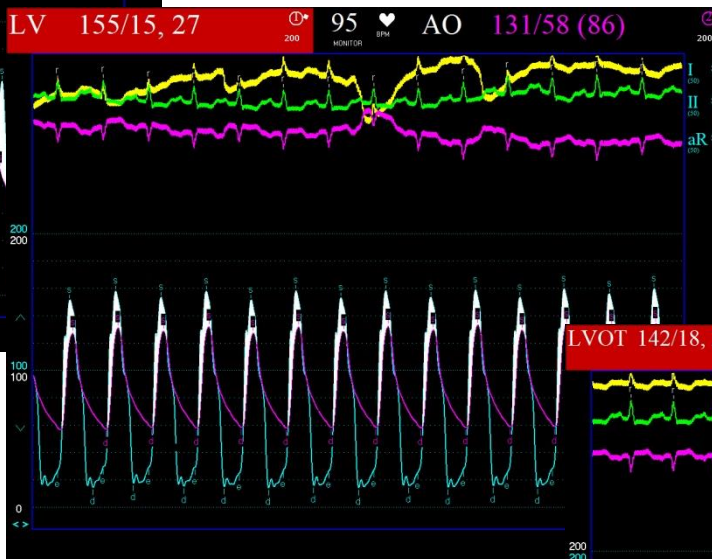
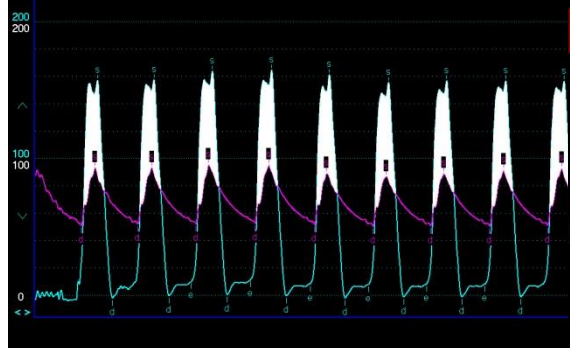




Hemodynamics

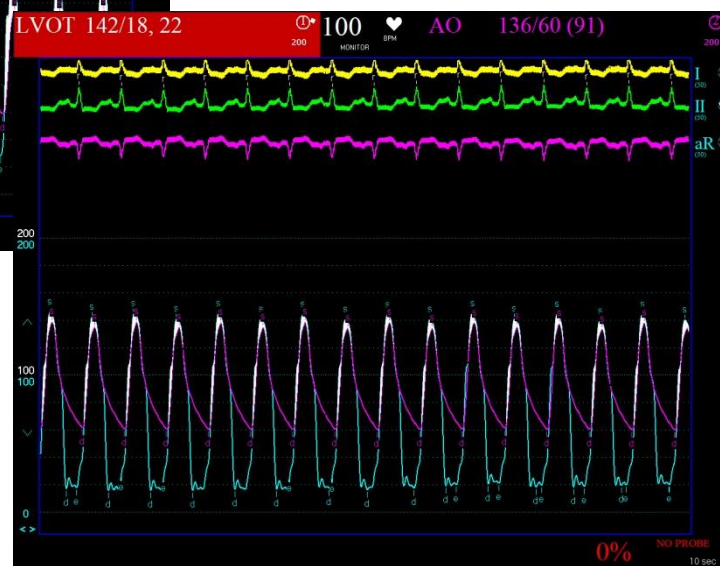


Post-
LV - Ao



Post-
LVOT - Ao

Pre-
LV - Ao





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Hydra Valve

- Self expandable, nitinol frame, bovine pericardial valve
- Repositioning – recapturing capability
- Delivery system is being perfected
- FIM already started, safety and efficacy remains to be established
- Hopefully, a more affordable valve for Thailand