



Device selection for pmVSD

Worakan Promphan, MD.FSCAI.

Pediatric Heart Center

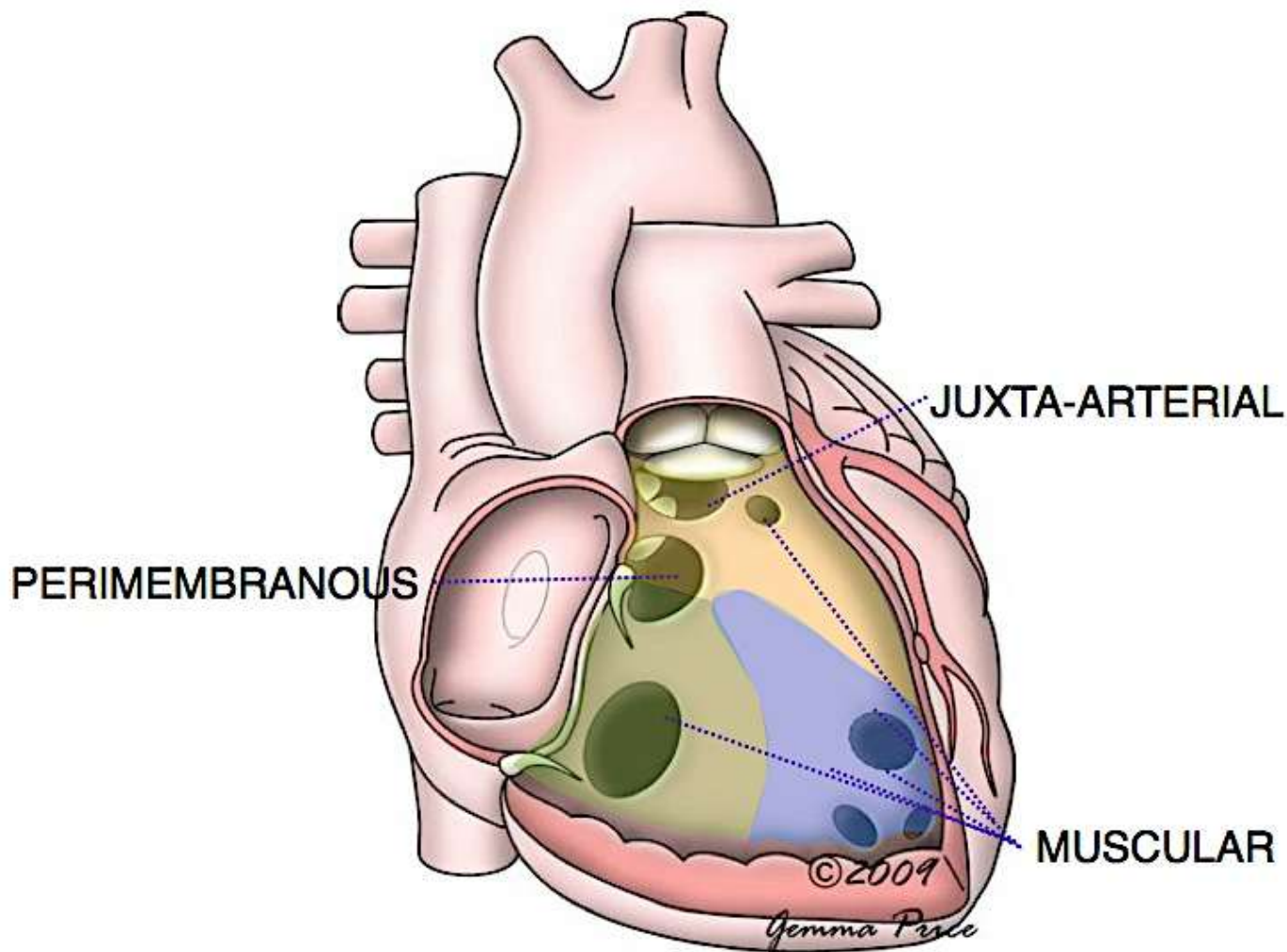
Queen Sirikit National Institute of Child Health (QSNICH)

Bangkok, THAILAND

My flights was supported by St Jude Medical
(Thailand)

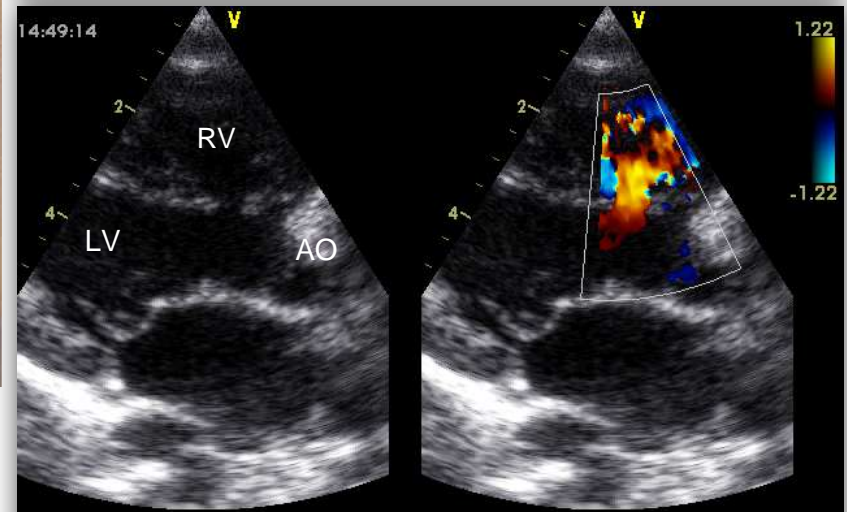
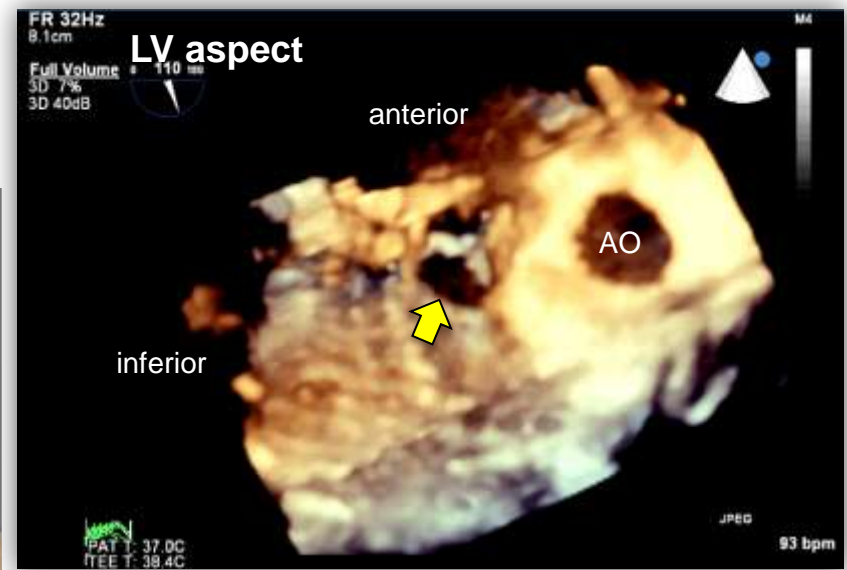
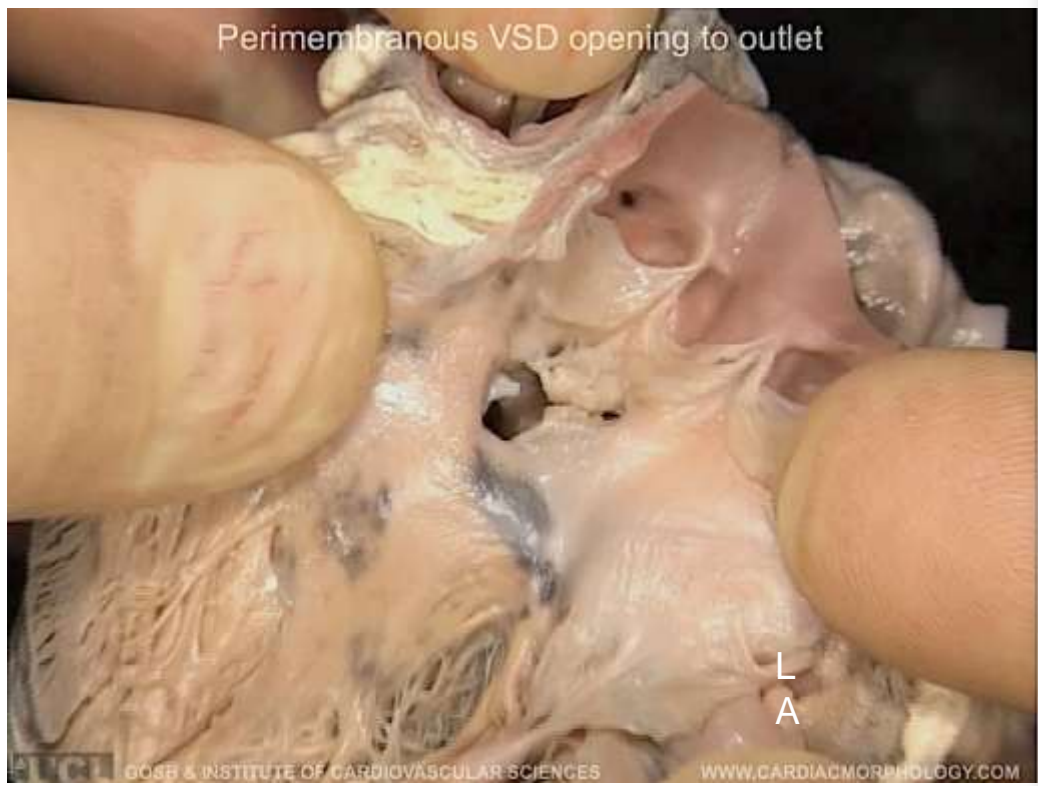
DISCLOSURE

Location of defects with respect to morphologic RV



- = OPENS TO INLET
- = OPENS TO APICAL TRABECULAR
- = OPENS TO OUTLET

Perimembranous VSD

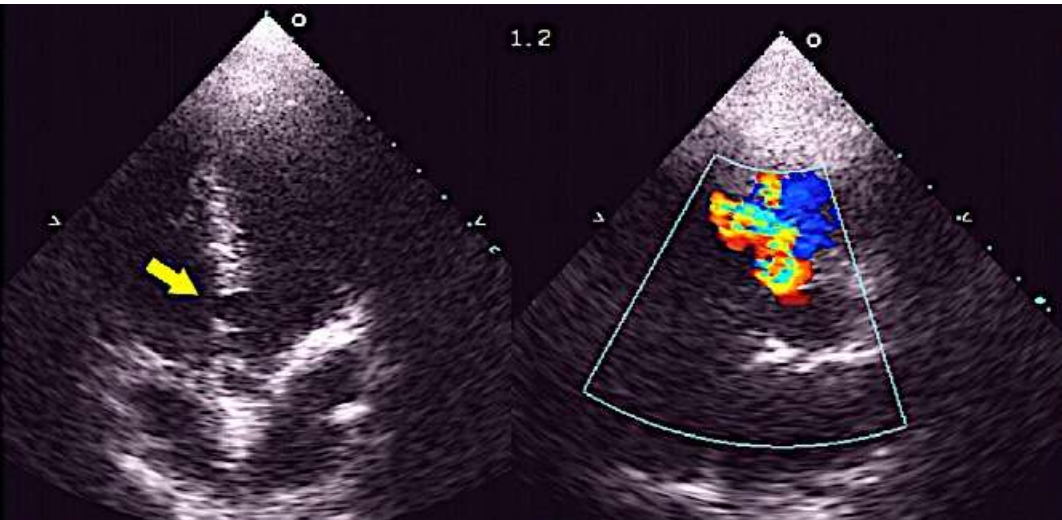


Parasternal LAX view

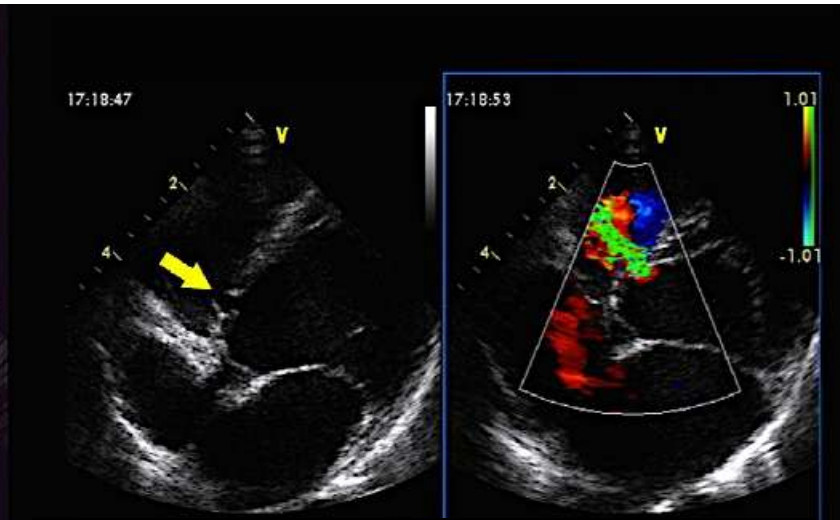
Andrew Cook, GOSH & Institute of
Cardiovascular Sciences, UK

Shapes of pmVSD

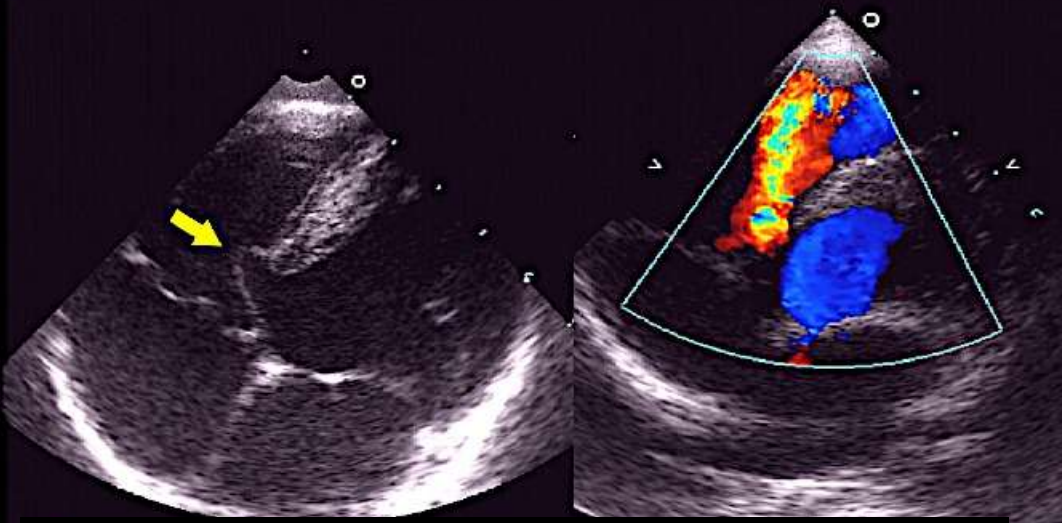
Yang J, et al. JACC 2014;63:1159-68



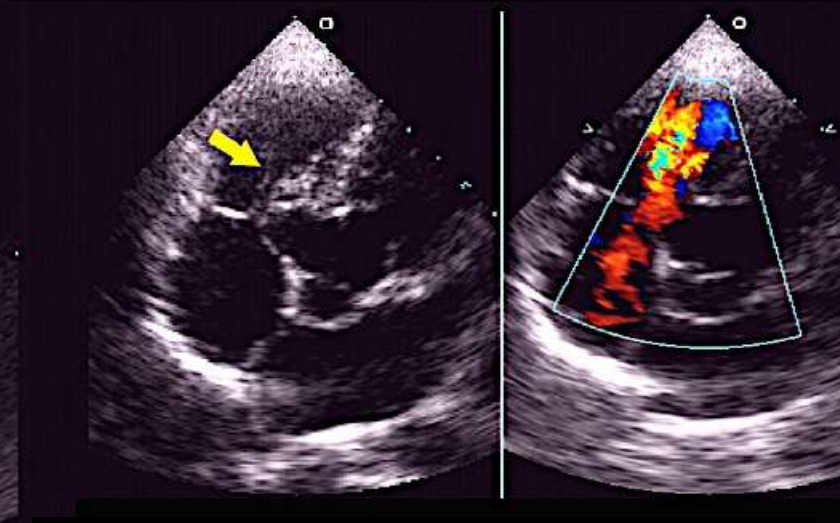
Window-shaped (5%)



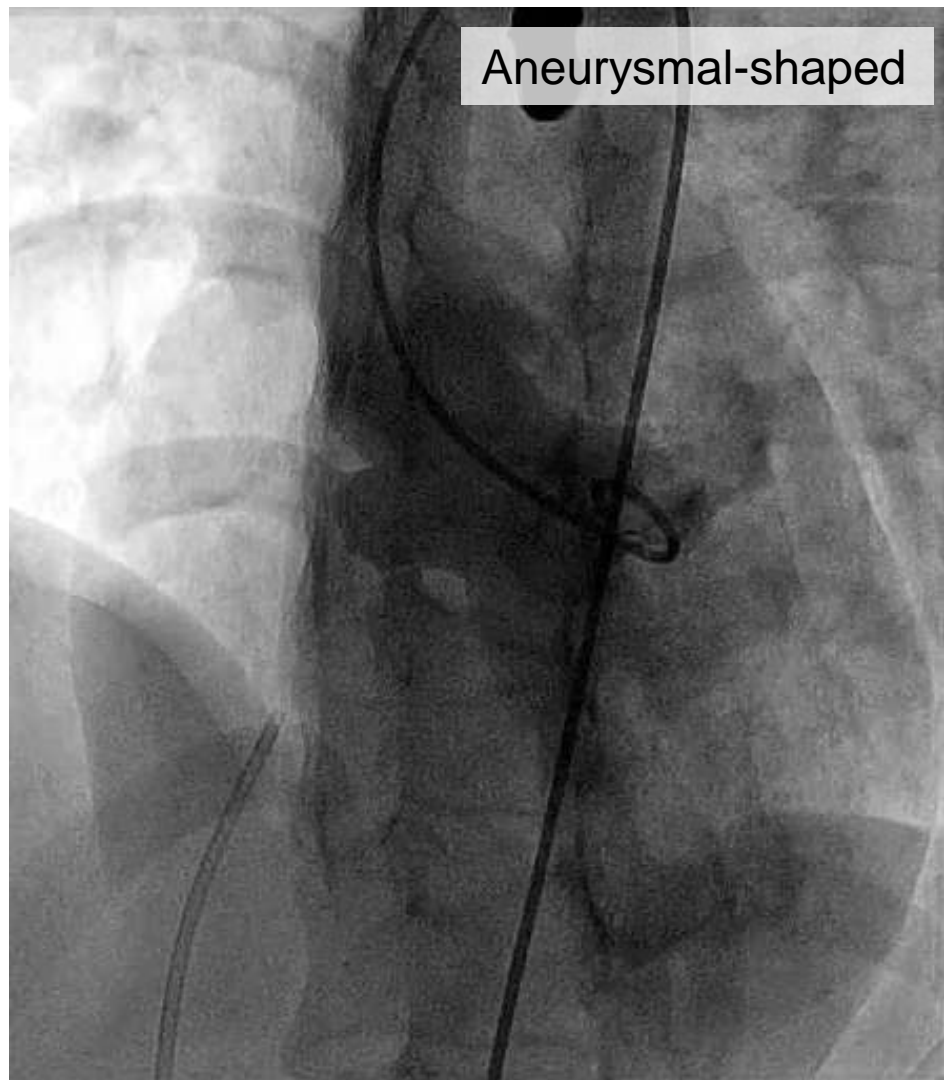
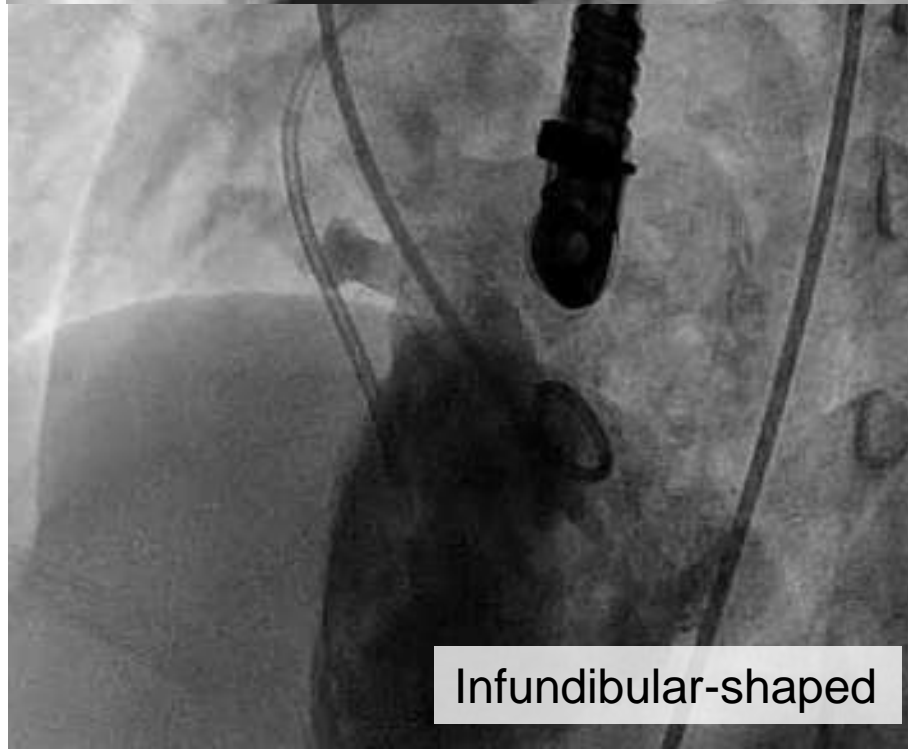
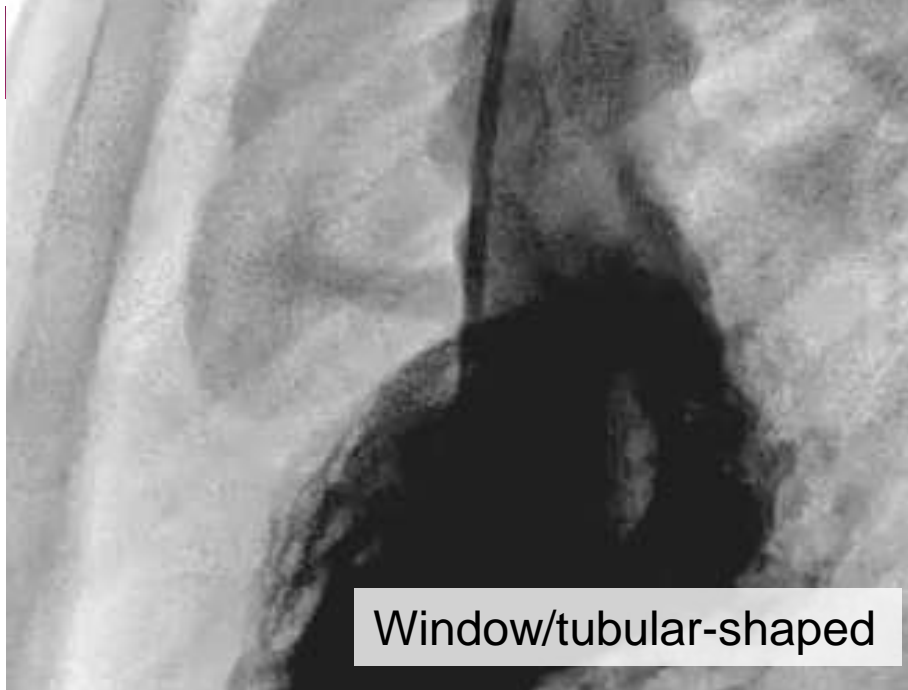
Tubular-shaped (24%)



Infundibular-shaped (33%)



Aneurysmal-shaped (38%)



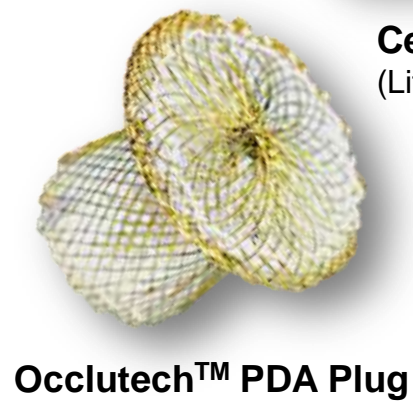
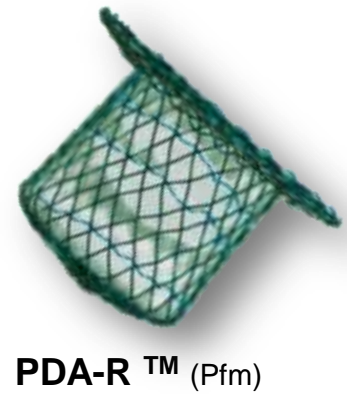
Available devices

- **Disc device**
 - Single/Double disc
- **Coil**
- **Others**

* Available devices in Asia will be displayed

Single Disc Devices

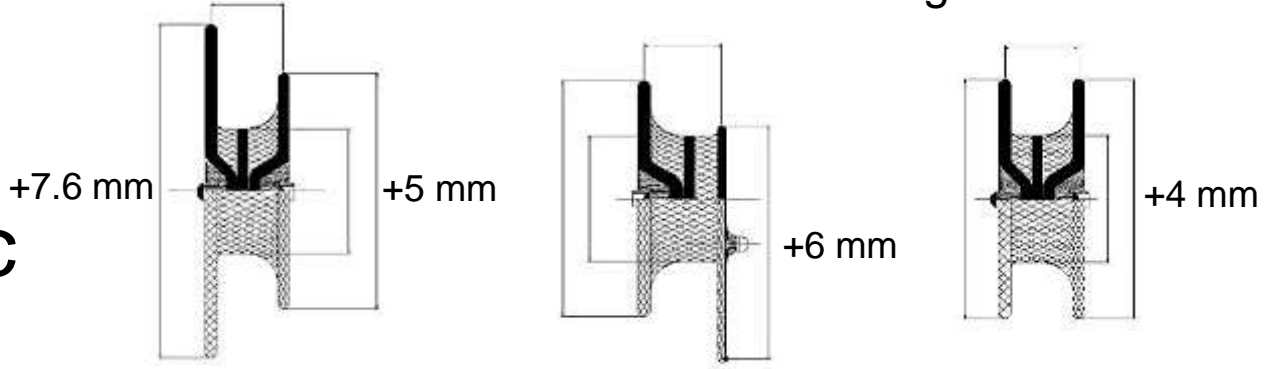
- Nitinol wire mesh
- Dacron/PTFE patches
- Various diameter (4-22 mm)
- Length 7-8 mm
(Occlutech 4.2-16 mm length)
- Various delivery sheath
- Delivery sheath 5-9 Fr



Double Disc Device: Cera™ membranous VSD

PTFE membrane
Tin coating
Diameter 4-24 mm (1 mm increment from 4-8)
Length 4 mm

- 1. Asymmetric
- 2. Eccentric
- 3. Symmetric



Cera™ Membranous Asymmetric VSD
(Lifetech scientific)

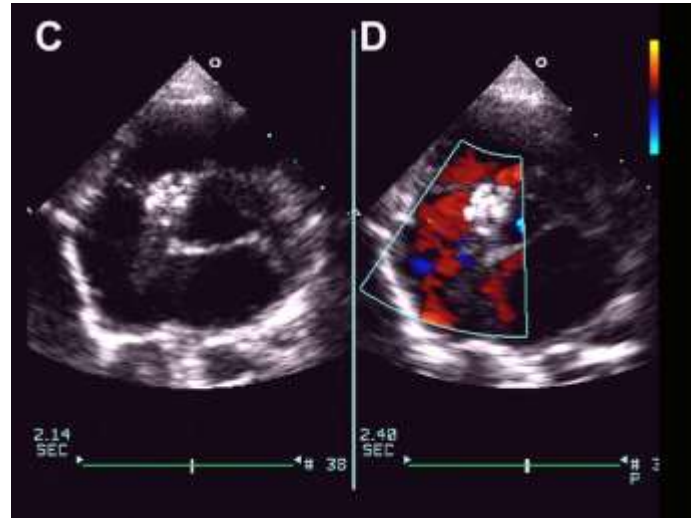
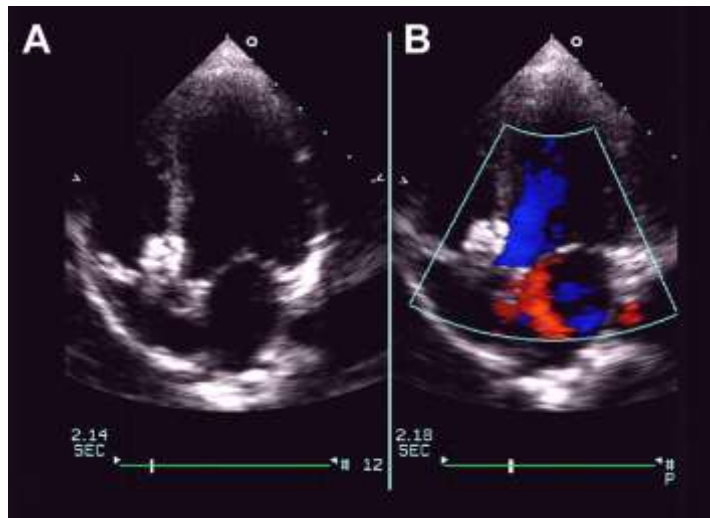
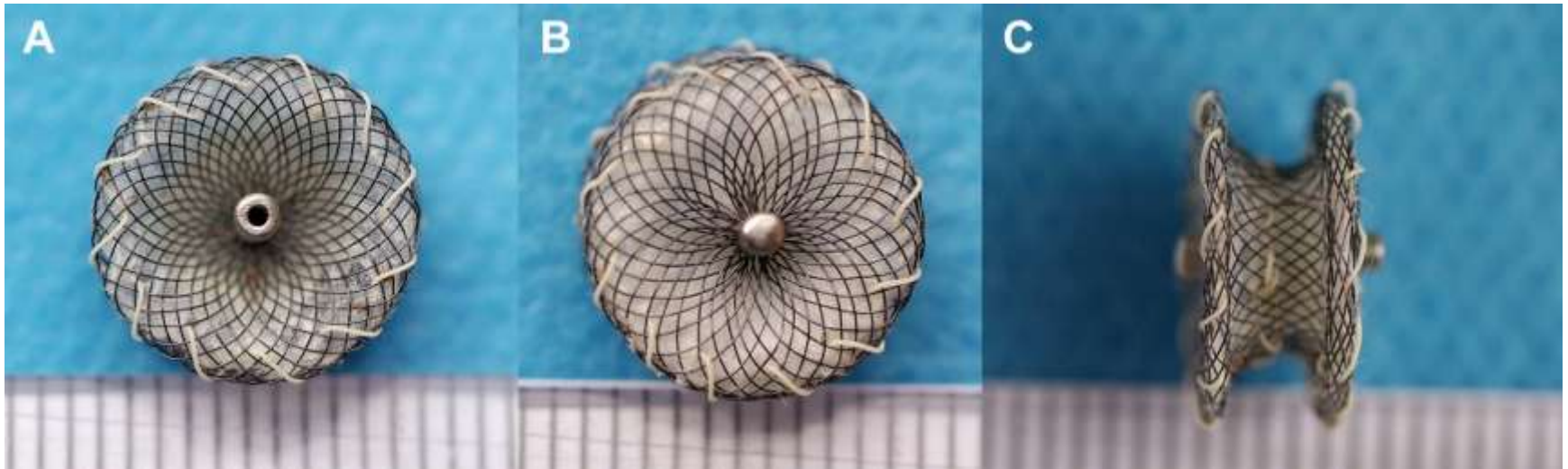


Cera™ Membranous Eccentric VSD
(Lifetech scientific)



Cera™ Membranous Symmetrical VSD
(Lifetech scientific)

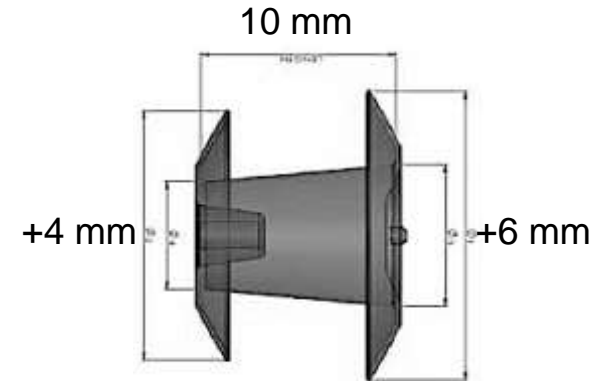
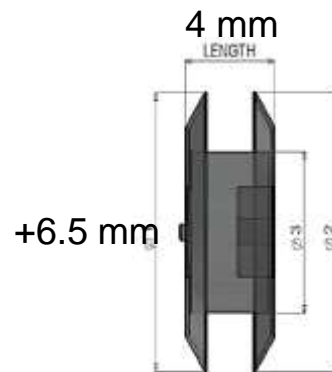
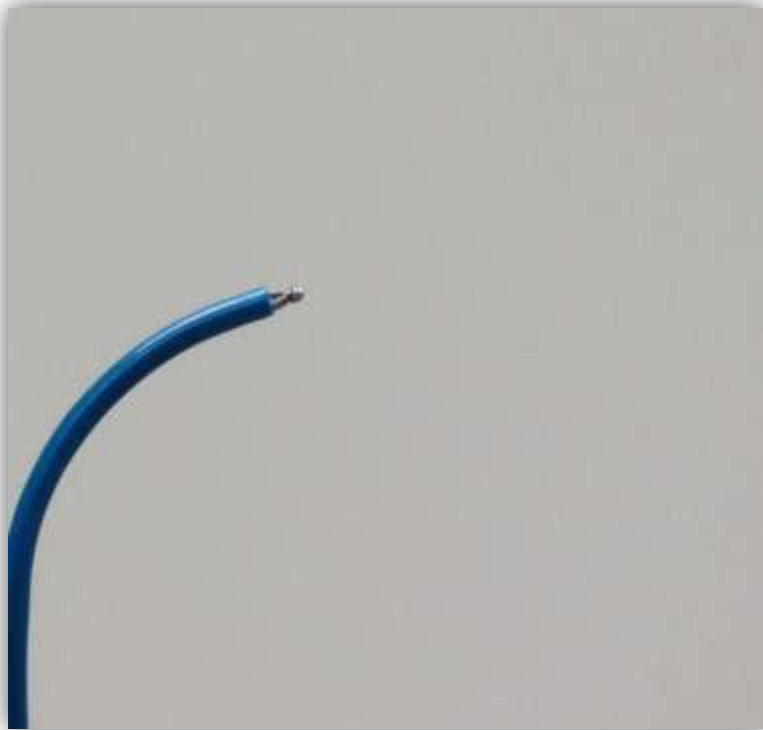
Double Disc Device: Shanghai (Lepu) pmVSD



Double Disc Device: Cocoon VSD

1. Membranous
2. Aneurysm

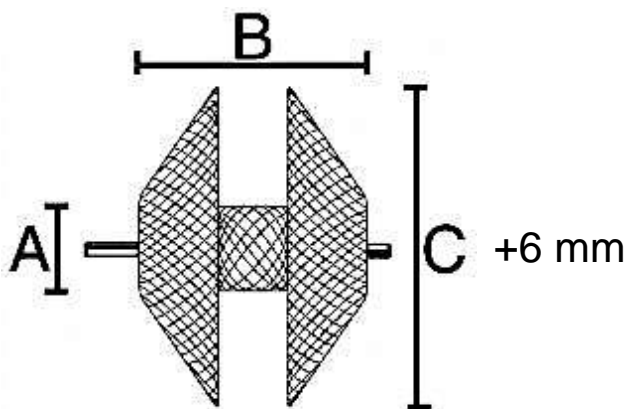
Nitinol wire
Dacron patches
Diameter 4-12 mm



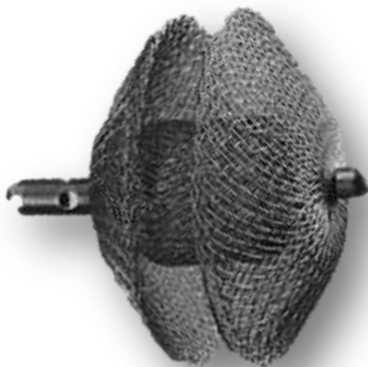
Cocoon™ Membranous VSD
(Vascular innovation)

Cocoon™ Aneurysm VSD
(Vascular innovation)

Double Disc Device: ADO II



- Fine nitinol wire mesh
- Softest device
- No patch
- Small diameter (6 mm max)
- Delivery sheath 4 - 6 Fr
- Flexible delivery cable/sheath



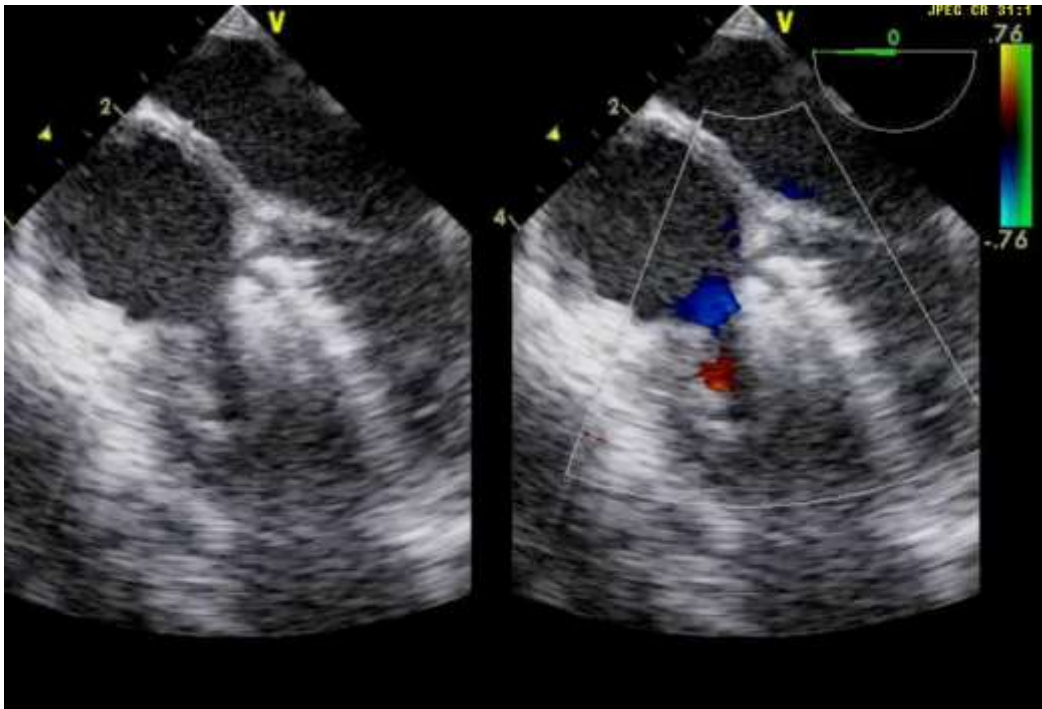
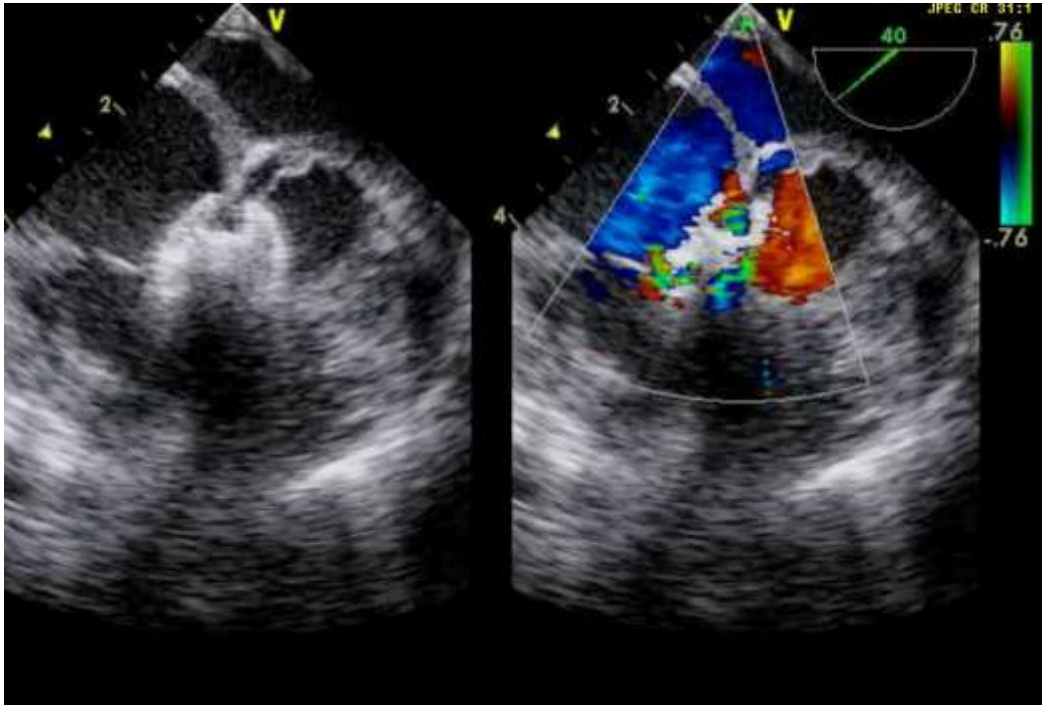
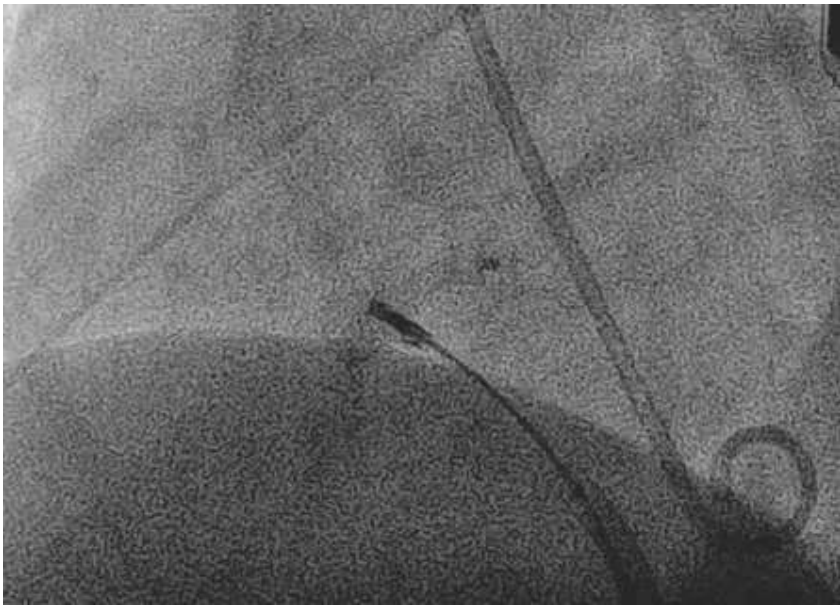
ADO II™ (SJM)

Waist (A): 3,4,5,6 mm

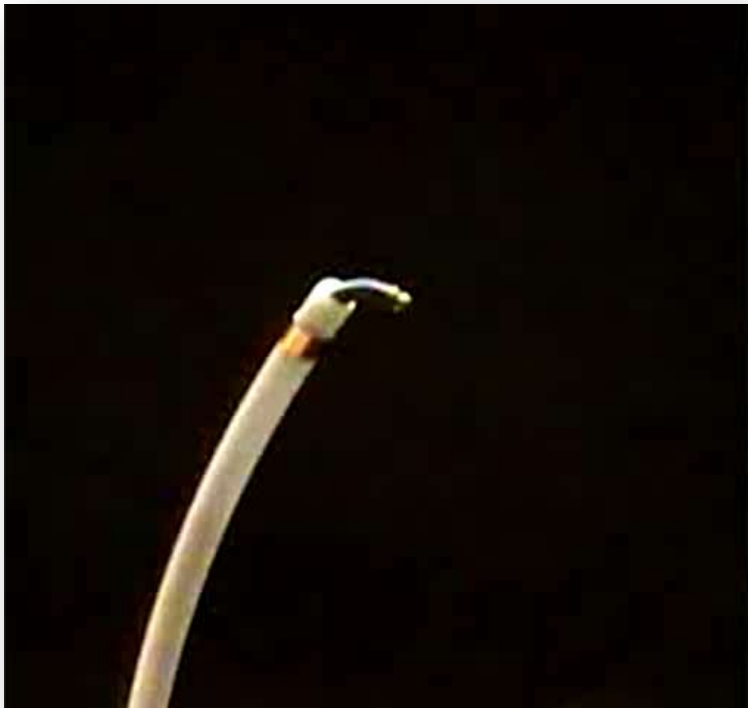
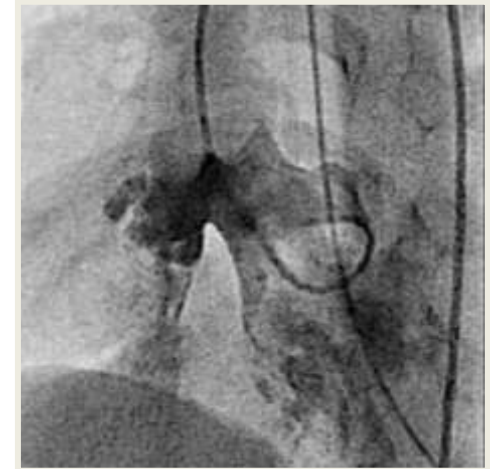
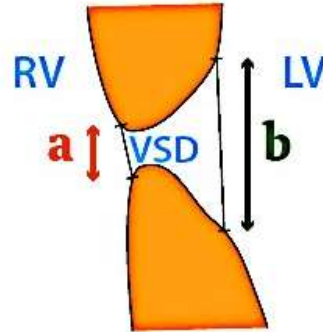
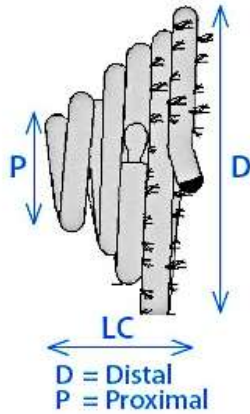
Length (B): 4 and 6 mm

Disc (C): 9,10,11,12 mm (6 mm larger than waist)

RV disc sits above tricuspid valve



Coil: Nit-Occlud[®] L^ê VSD



Coil Size	
Distal	Proximal
8 mm	6 mm
10 mm	6 mm
12 mm	6 mm
12 mm	6 mm
14 mm	8 mm
16 mm	8 mm

Important check list

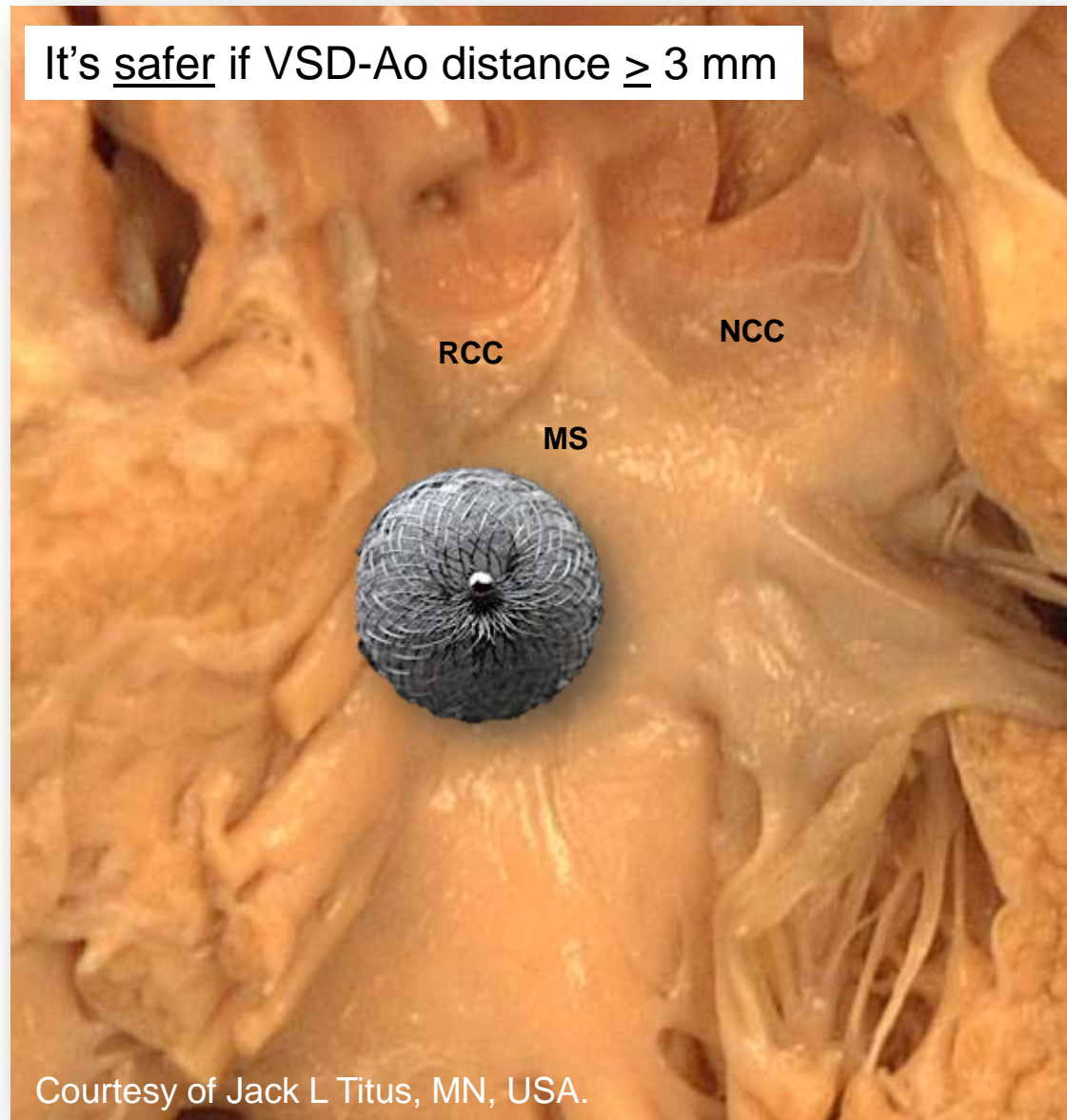
(for device selection)

- 1. Shape/Type** of the pmVSD?
- 2. How far** from aortic valve?
- 3. How close** to the tricuspid valve?
- 4. Length** of the VSD?
- 5. Risk vs. Benefit**
- 6. You, your team, your shelf**

pmVSD from LV aspect

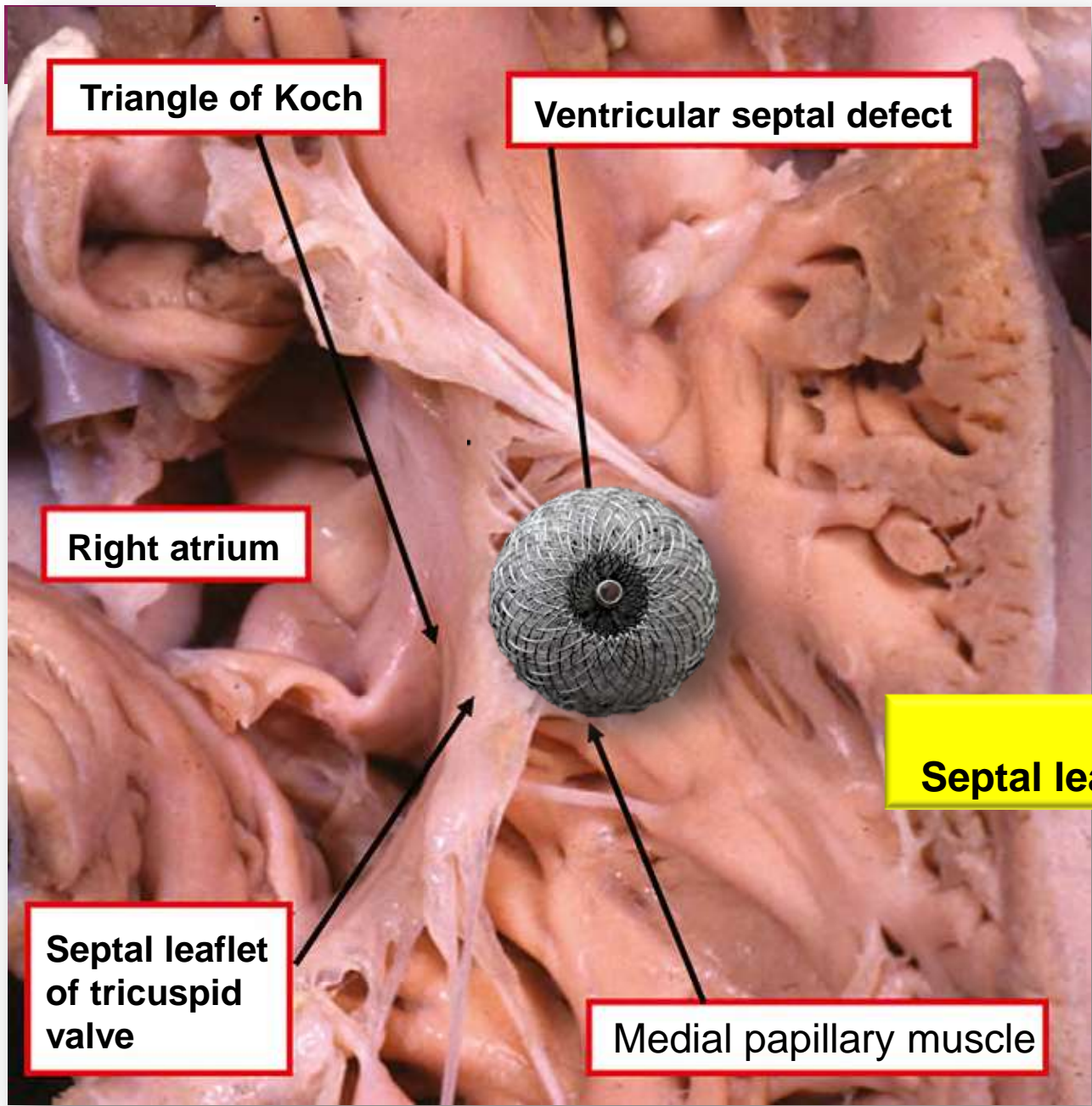
- Close to
1. Aortic valve
 2. His bundle

It's safer if VSD-Ao distance ≥ 3 mm

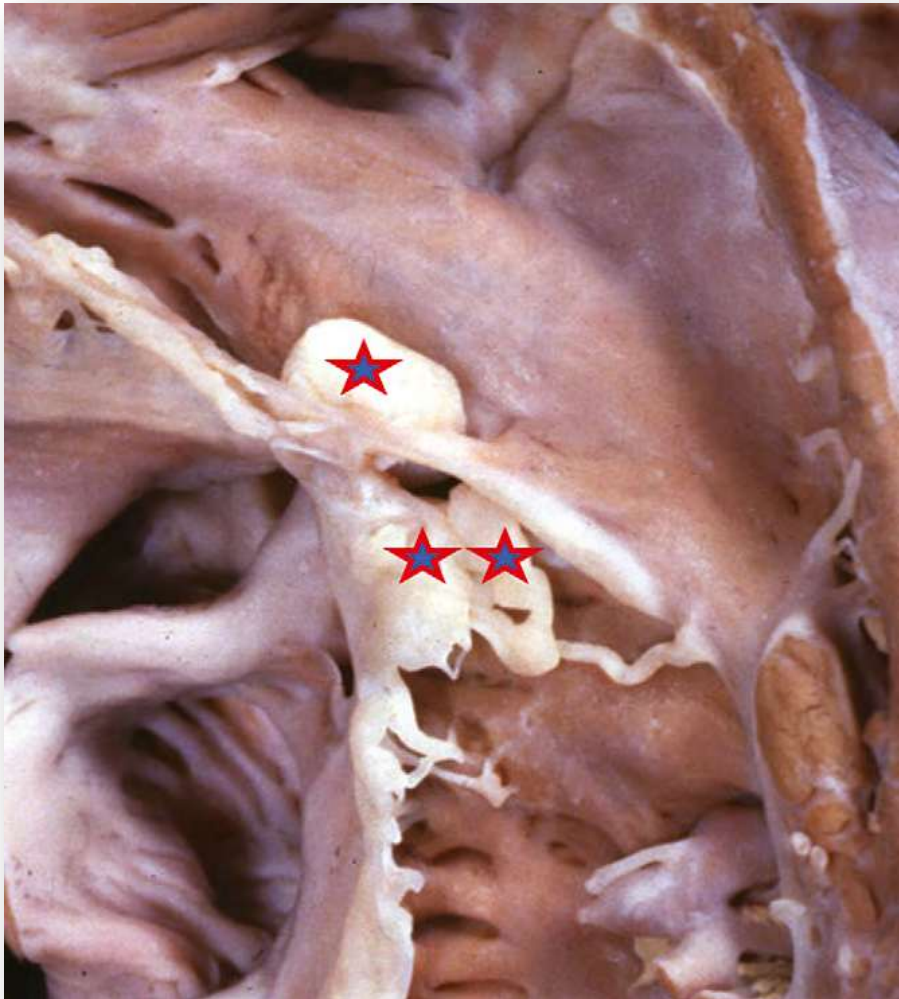


Courtesy of Jack L Titus, MN, USA.

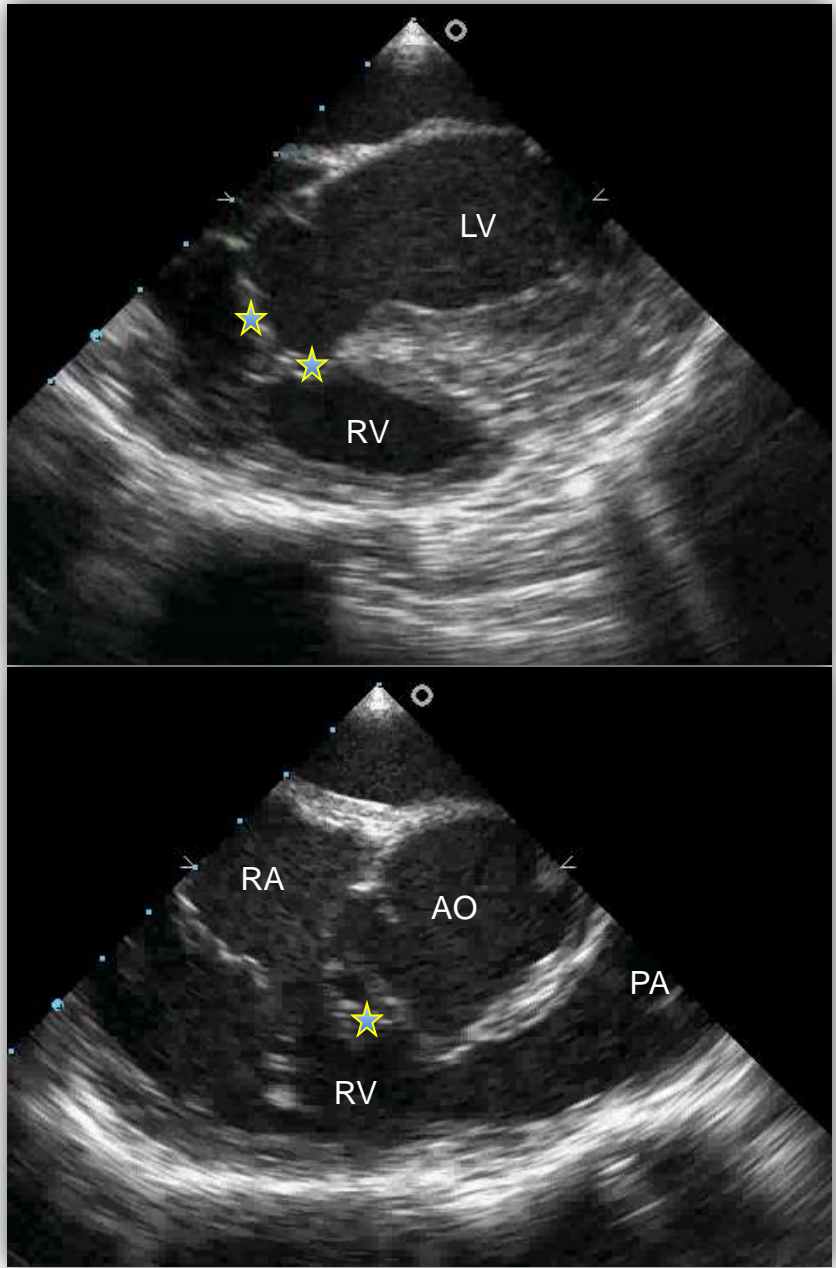
pmVSD From RV aspect



Close to
Septal leaflet of the tricuspid valve

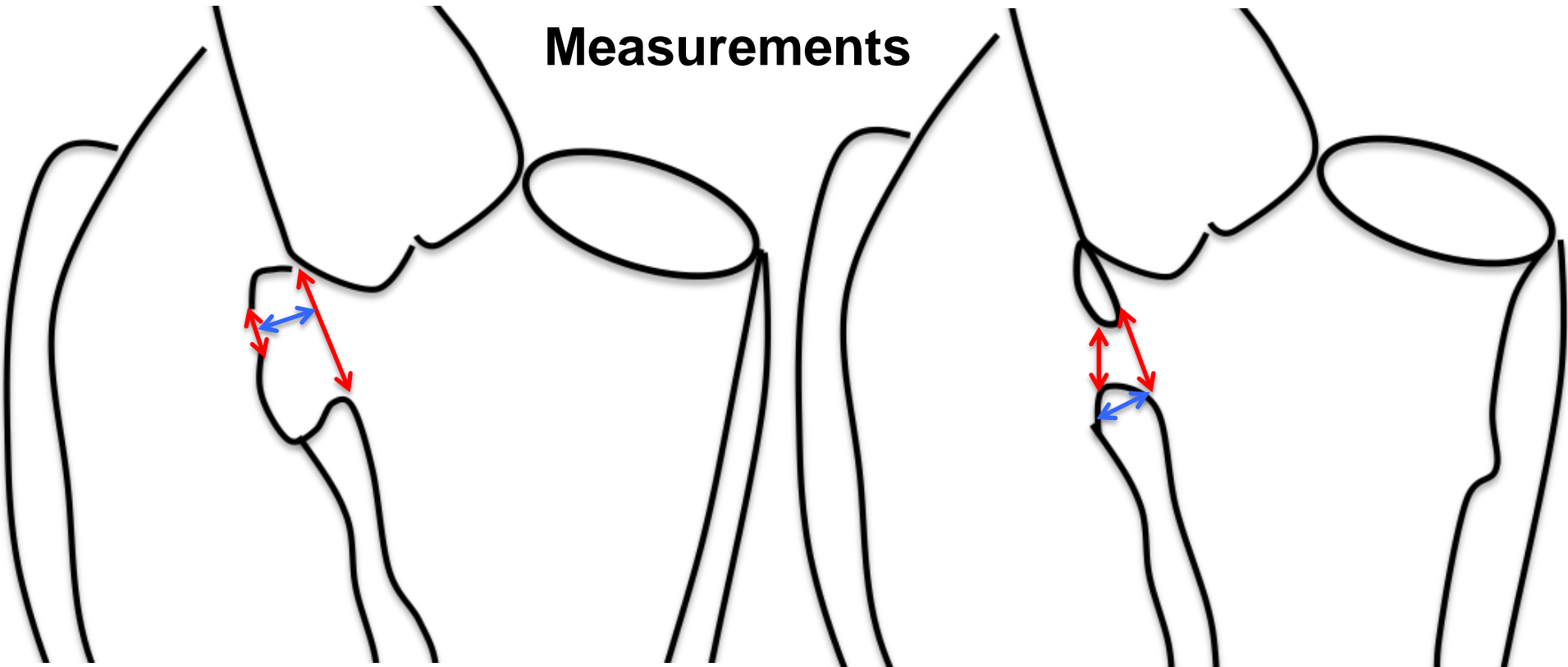


the tissue tags (*stars*) derived from the leaflets of the tricuspid valve.



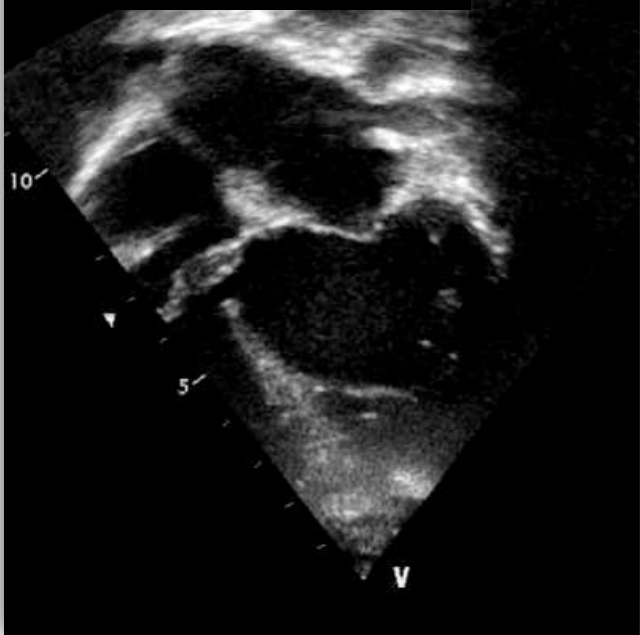
Perimembranous VSD

Measurements

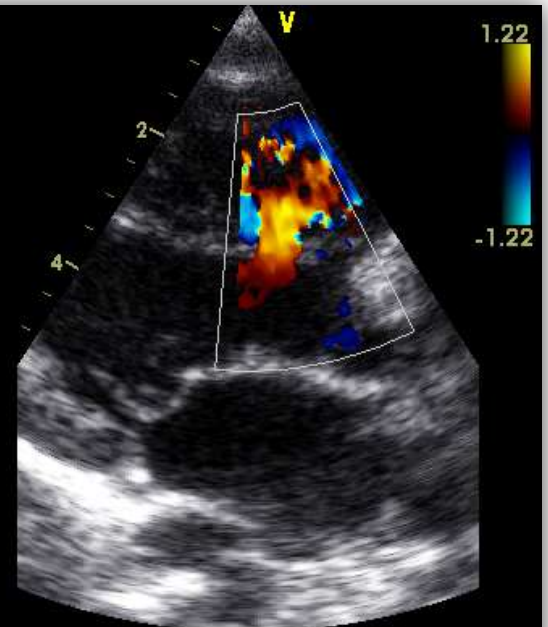
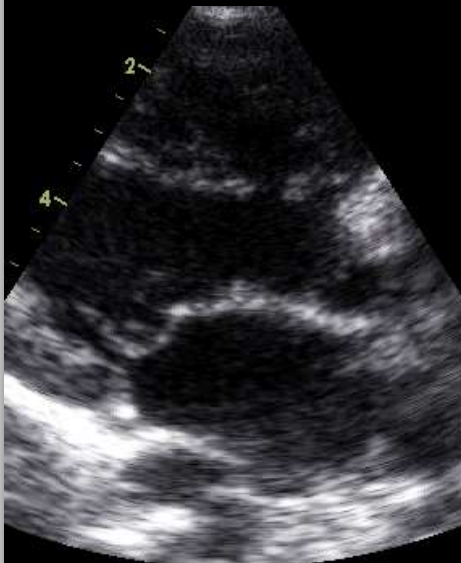


Transthoracic Echocardiogram

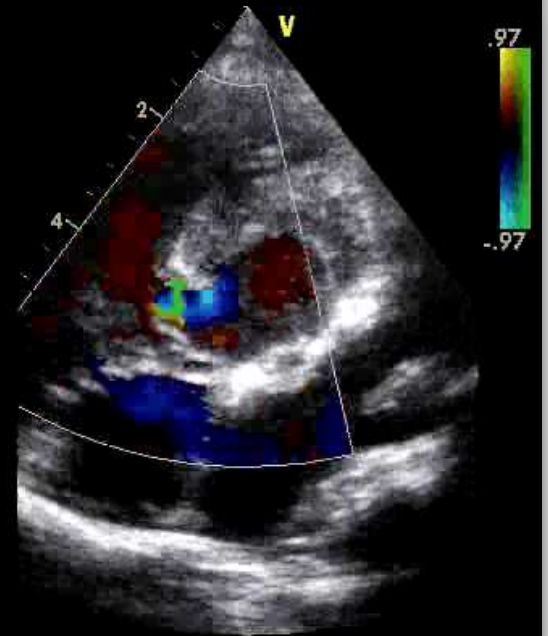
Apical 4/5 chamber views



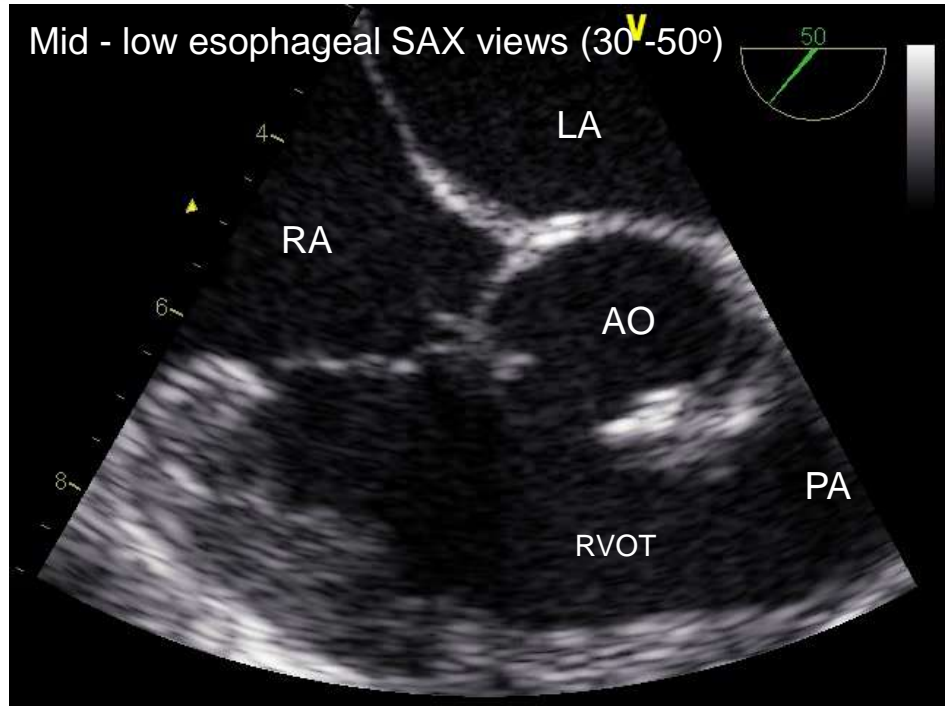
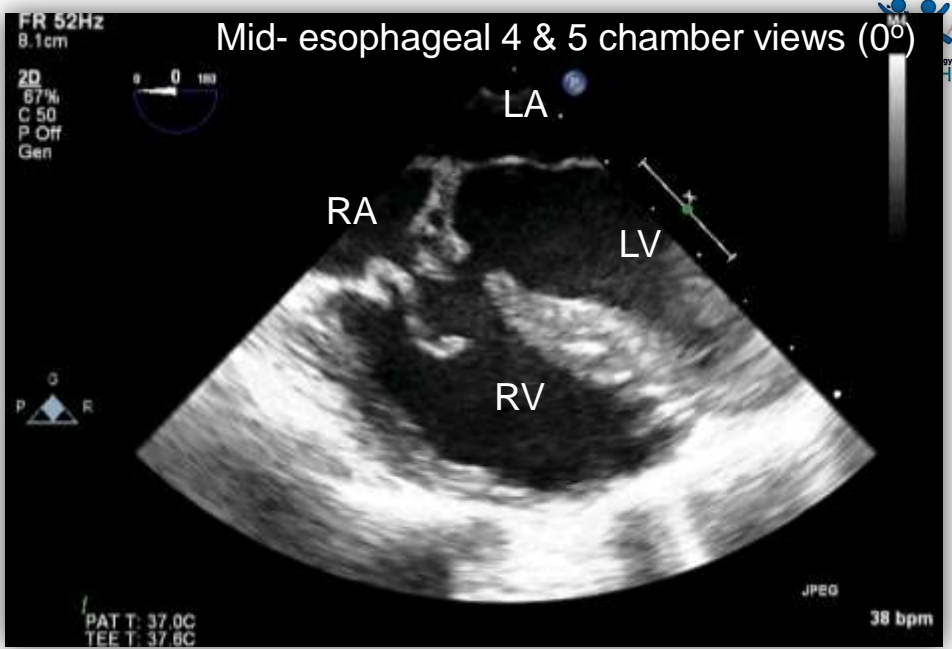
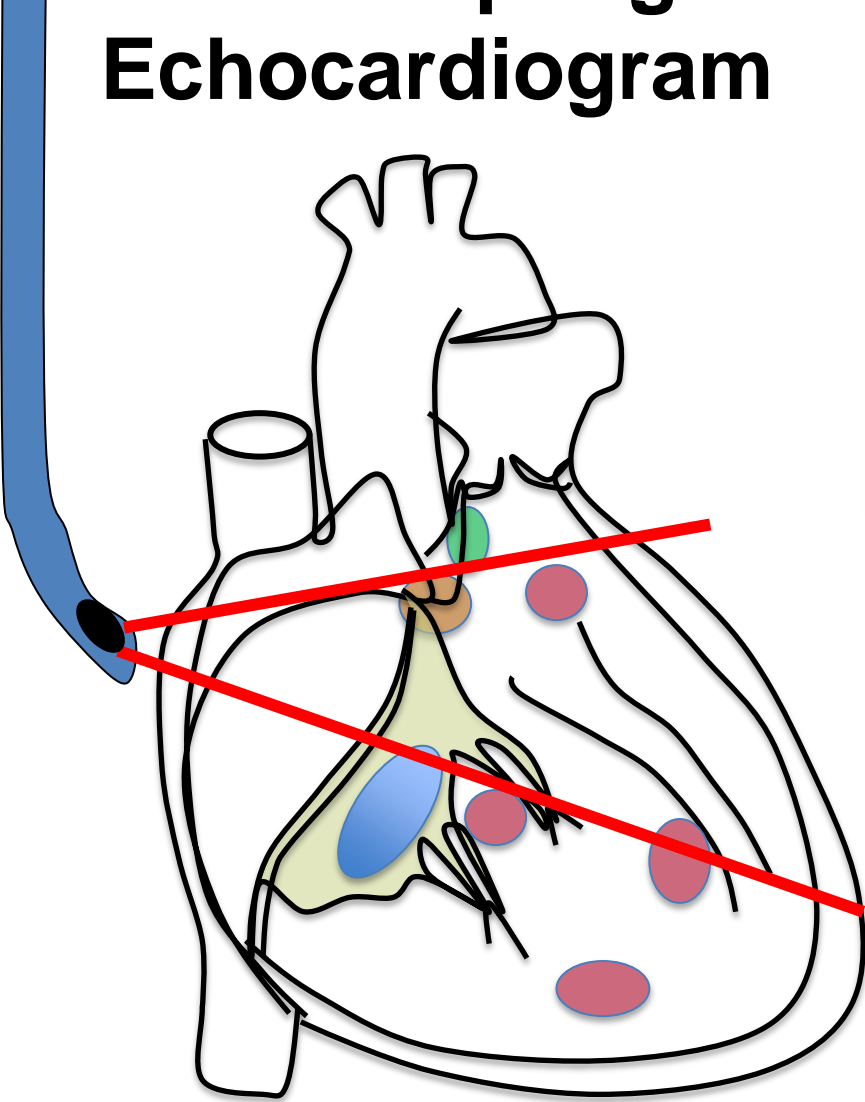
Parasternal LAX view

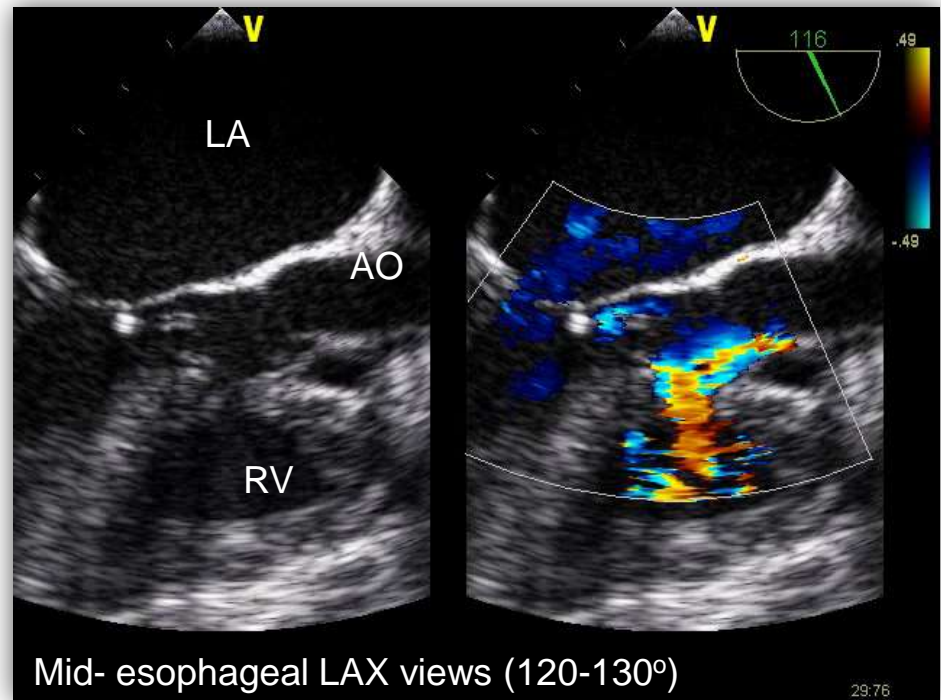
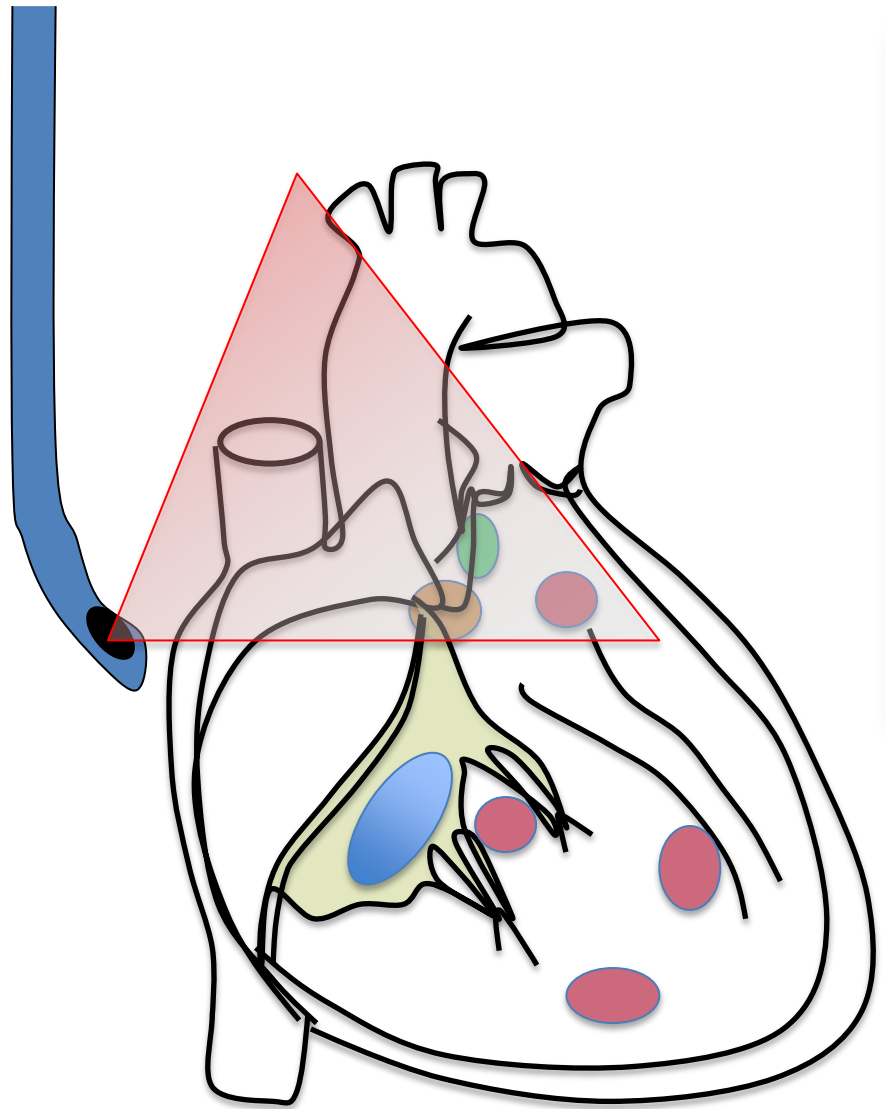


Parasternal SAX view

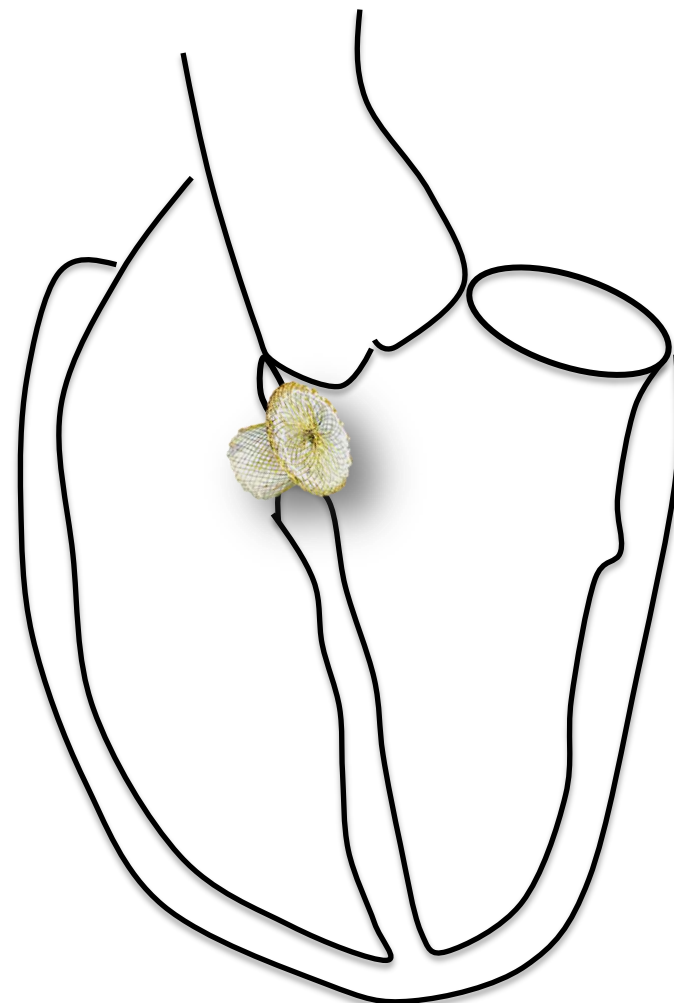
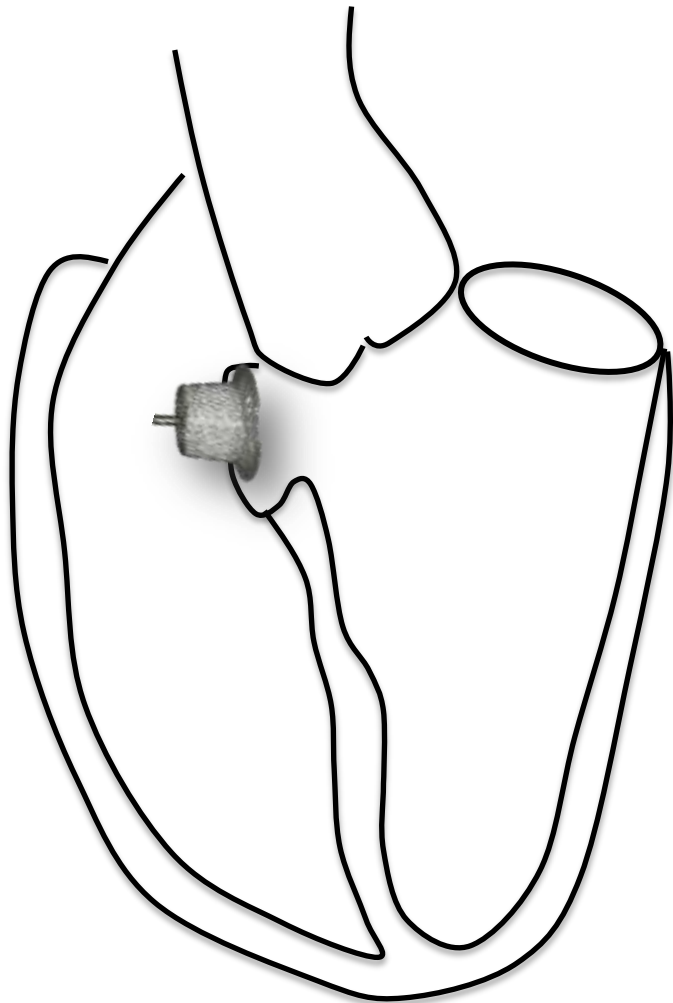


Transesophageal Echocardiogram

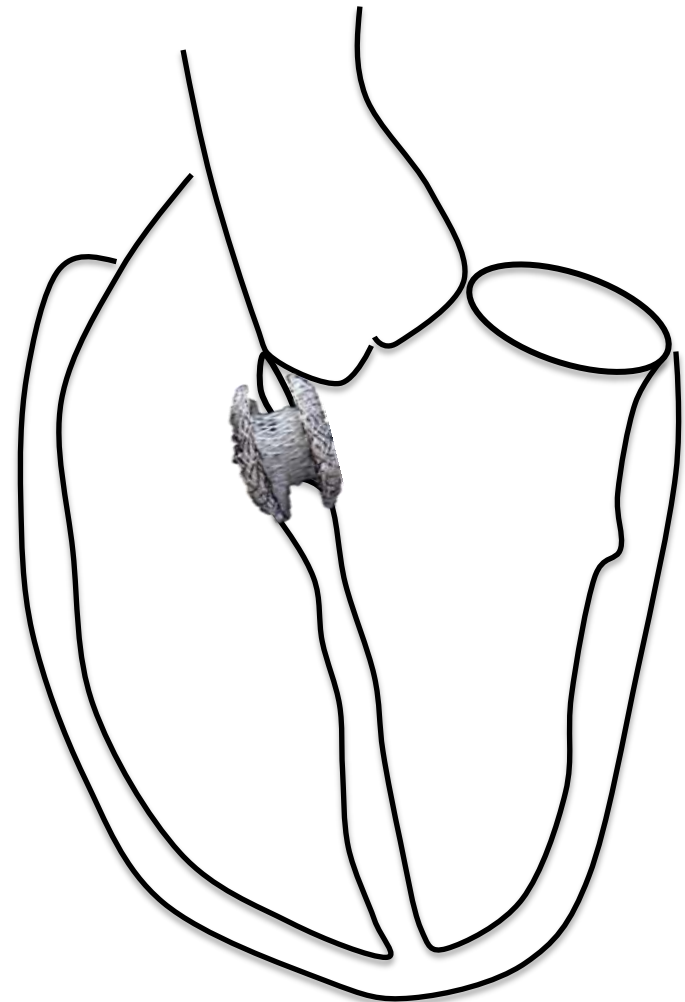
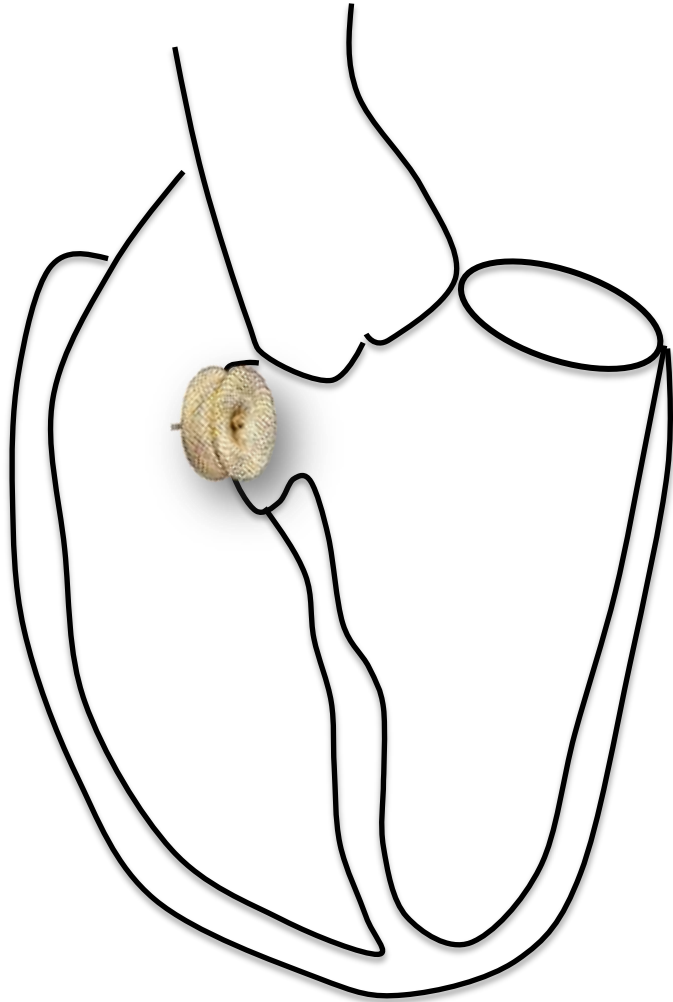




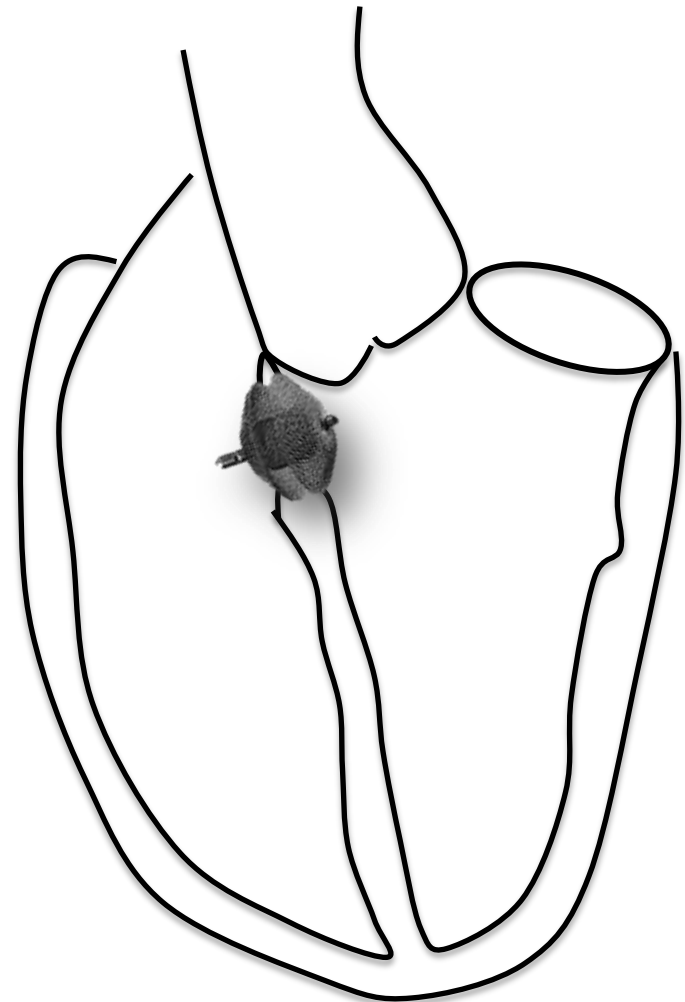
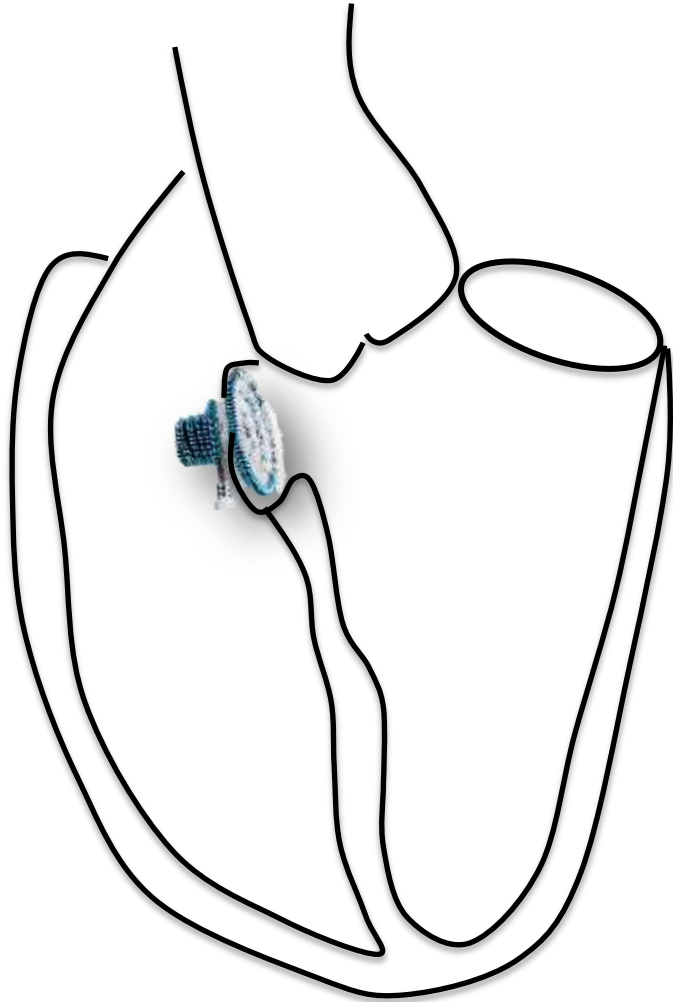
Perimembranous VSD



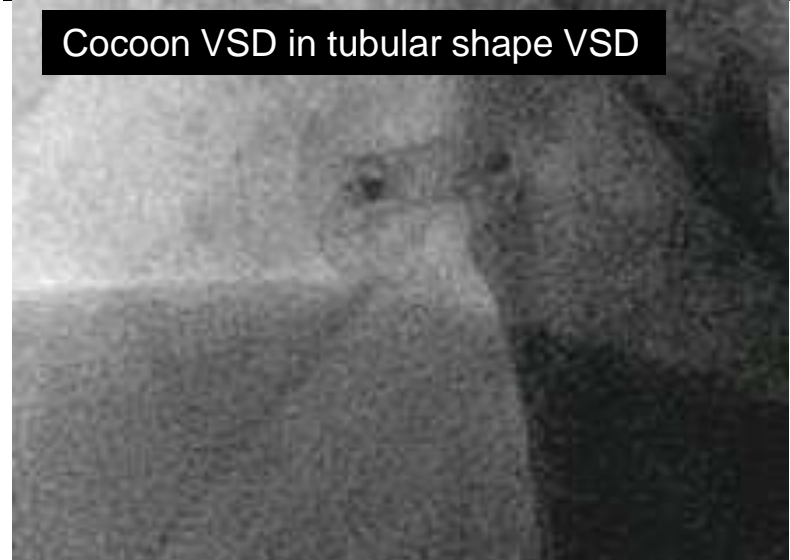
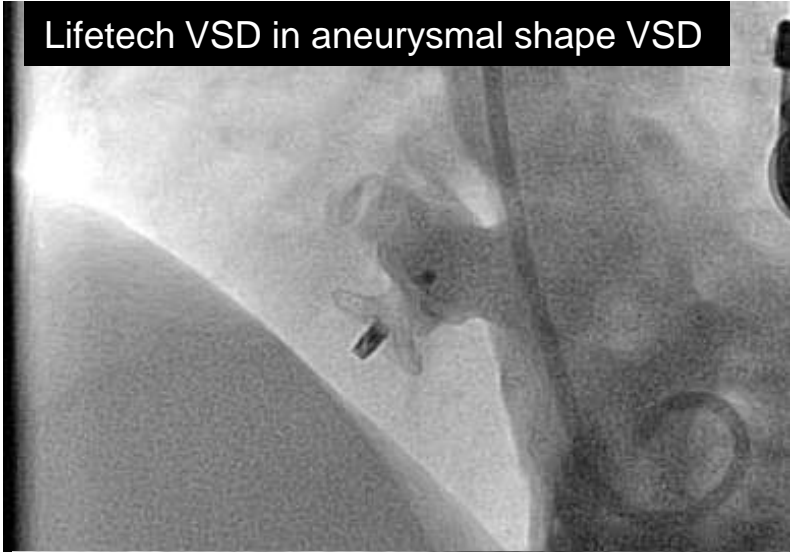
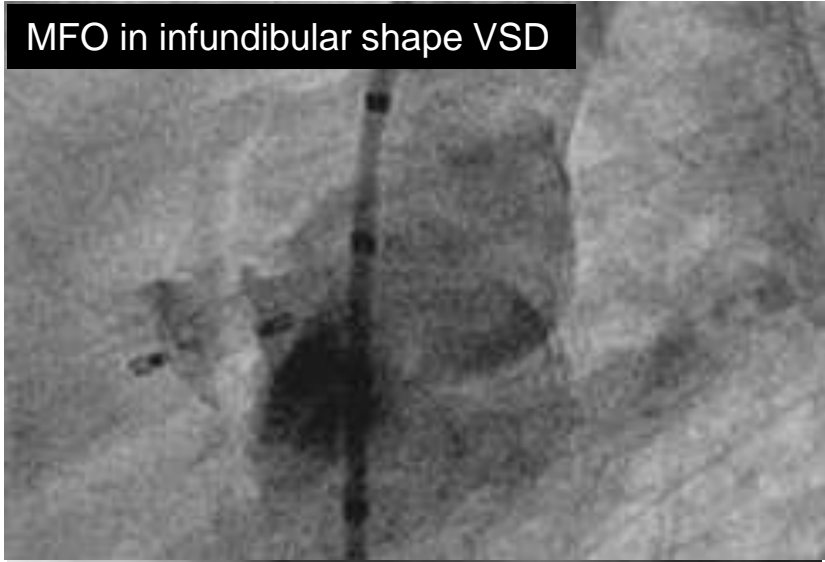
Perimembranous VSD



Perimembranous VSD

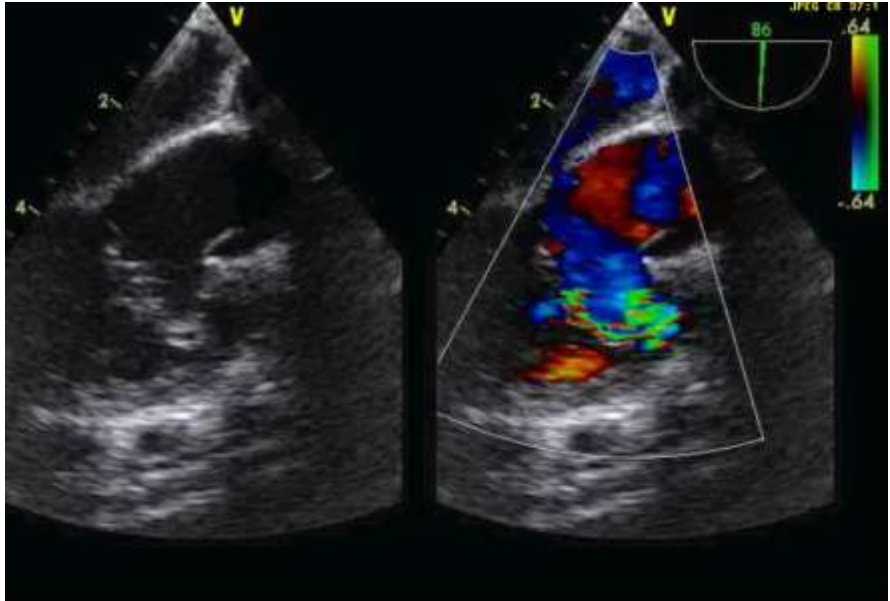
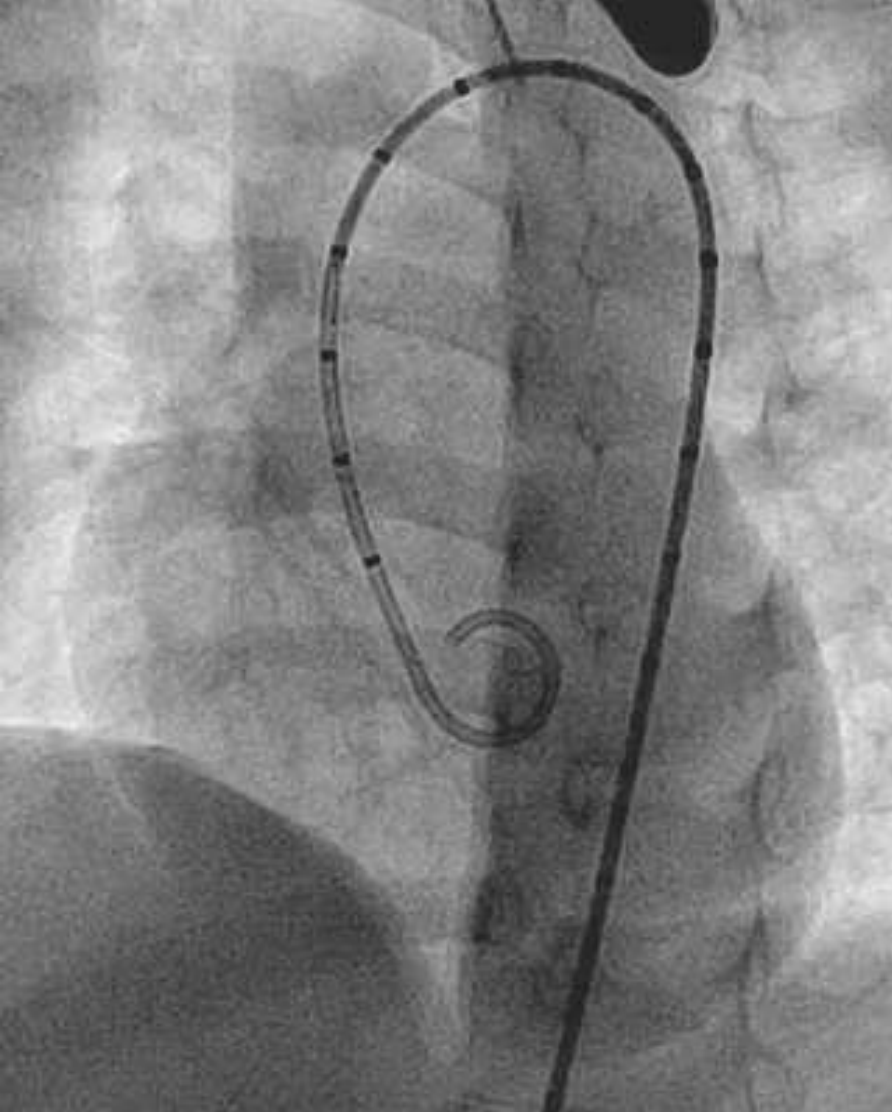


Variety of devices can be used in different shapes of pmVSD

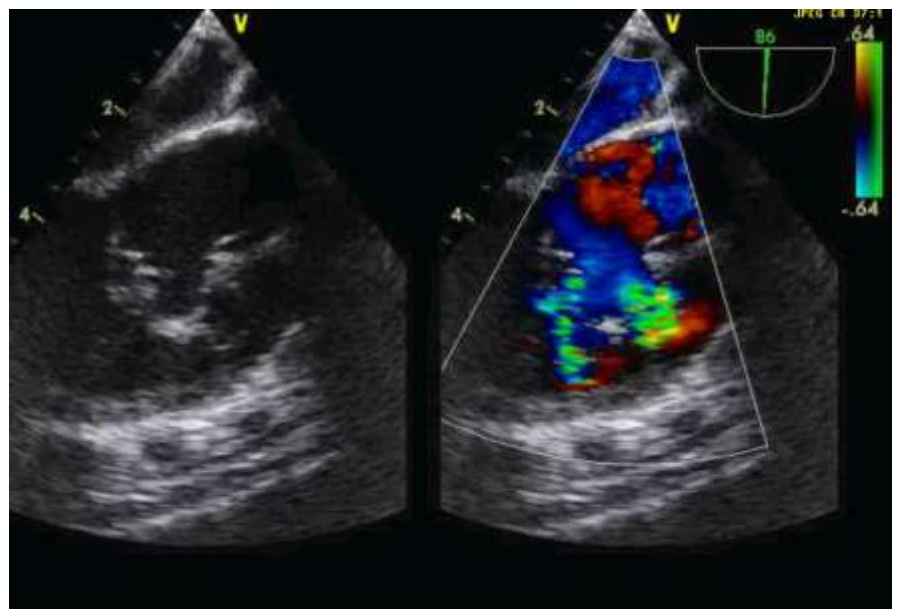
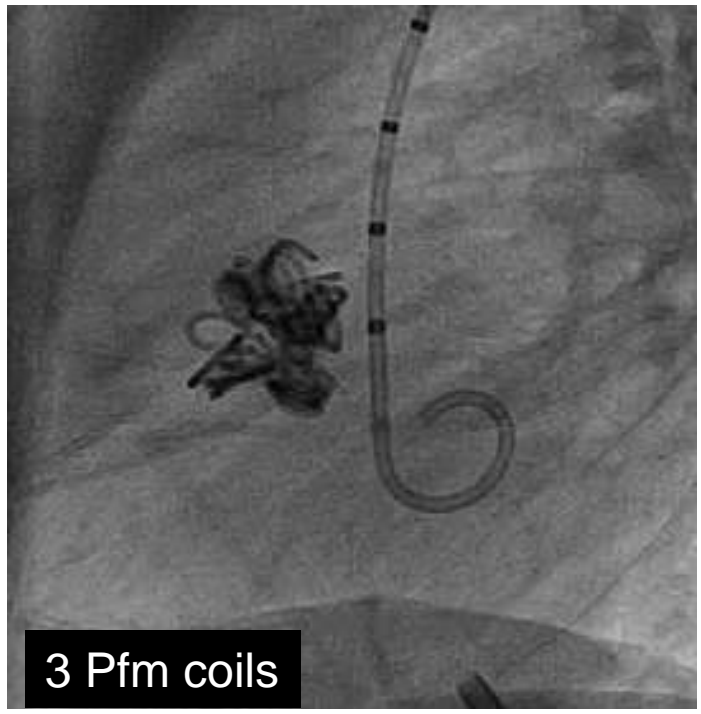
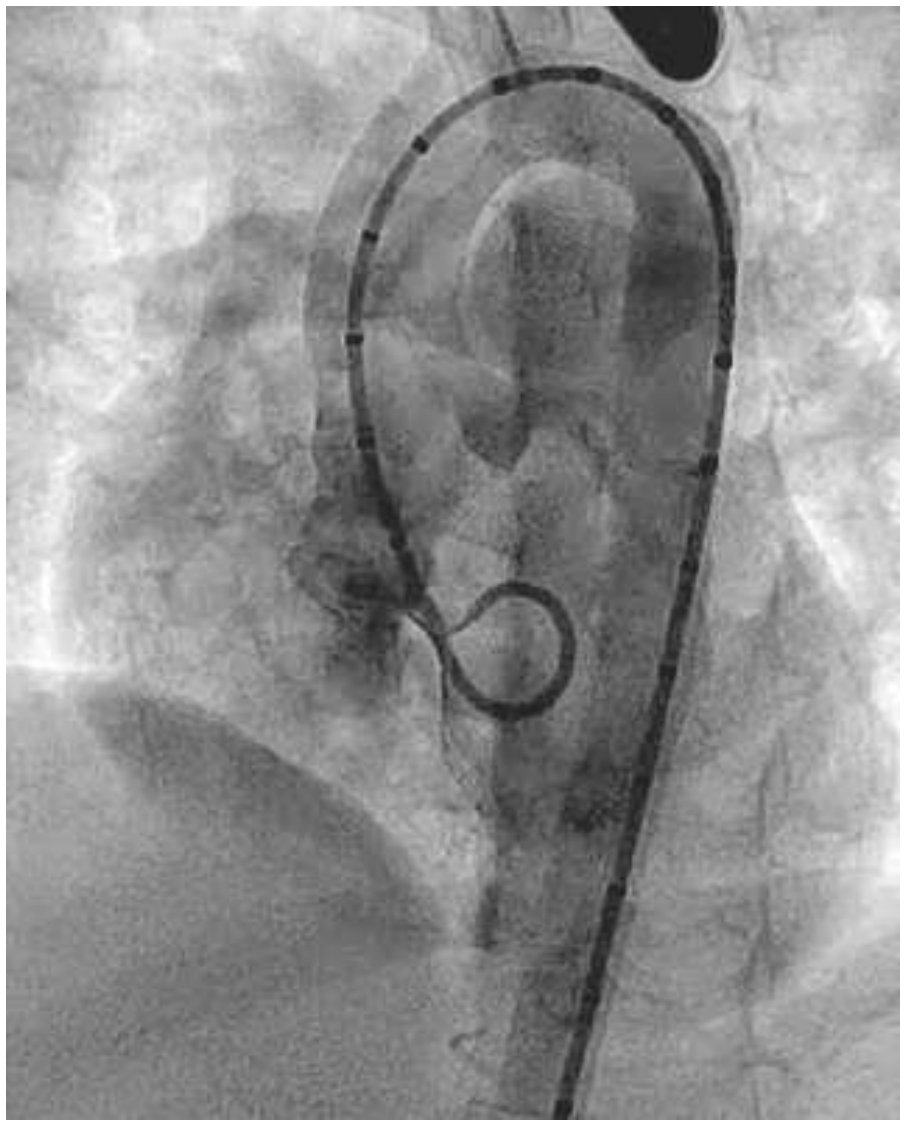


Some considerations

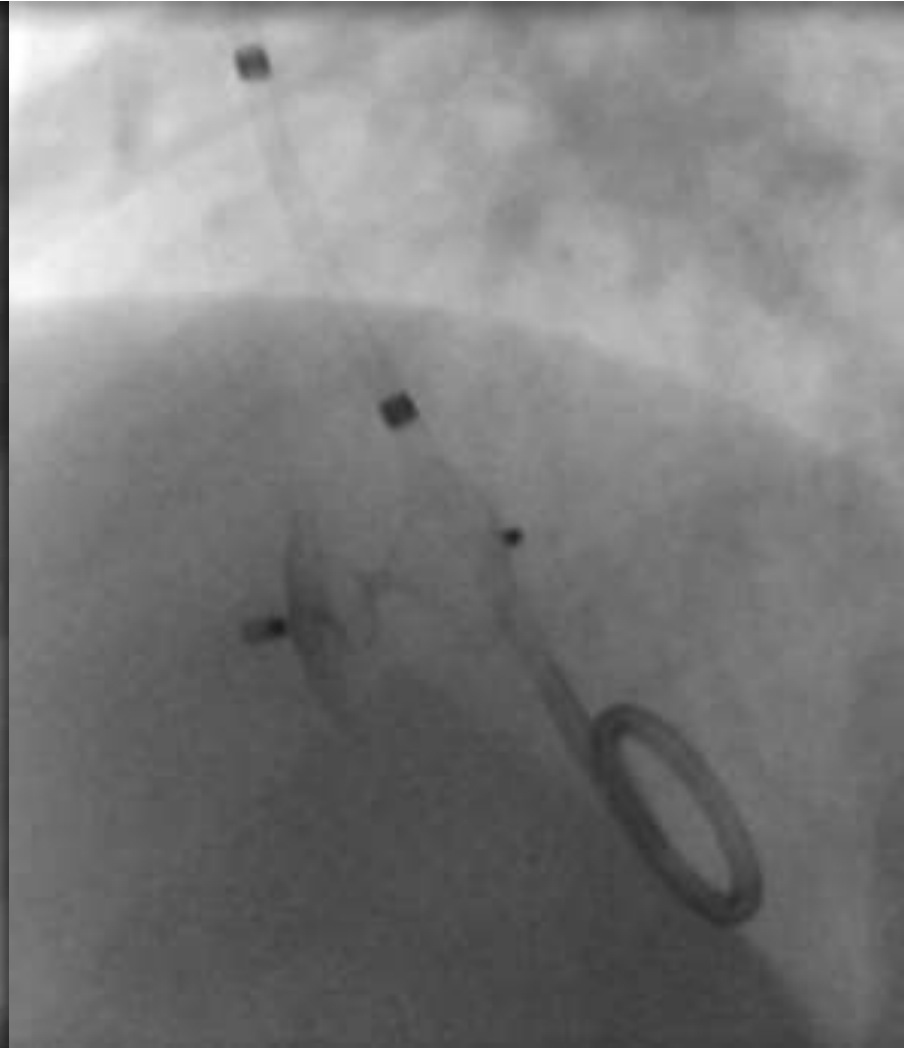
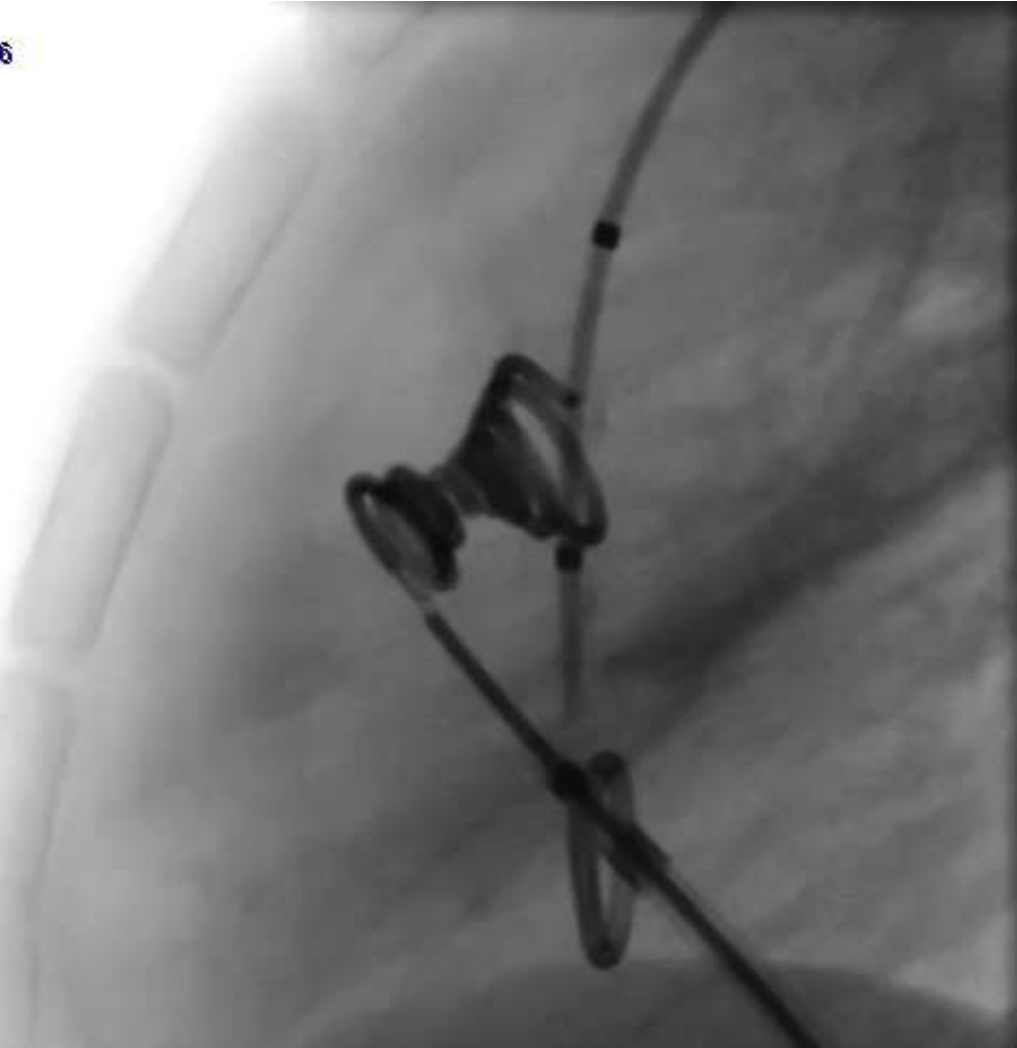
Aneurysmal VSD with multiple exits



Aneurysmal VSD with multiple exits



Outlet extension VSD



Courtesy Do Tin

Device selection for pmVSD

Any kinds that.....

1. Fits nicely to the anatomy
2. Does not disturb tricuspid and aortic valve
3. Does not obstruct RVOT-LVOT
4. Less clamping force
5. High occlusion rate
6. You are familiar with!!!!

We need more scientific information among these devices



The 3rd Bangkok International Fetal Echocardiography Symposium

18–20 January 2016

Bangkok, Thailand

Save the date!

