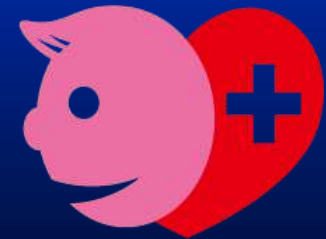


How to Close Post-MI VSDs

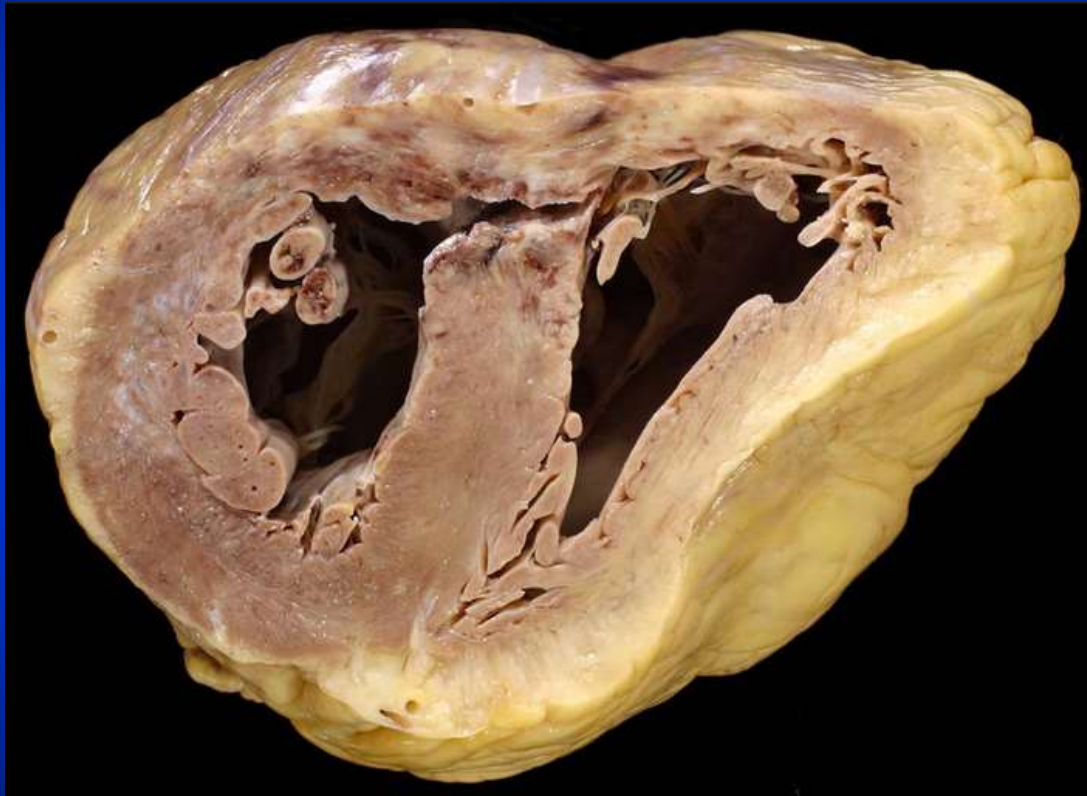
Yun-Ching Fu

Taichung VGH
Veterans General Hospital
Taichung, Taiwan



Post-MI VSD

1-3% $\xrightarrow{\text{Reperfusion therapy}}$ 0.2%

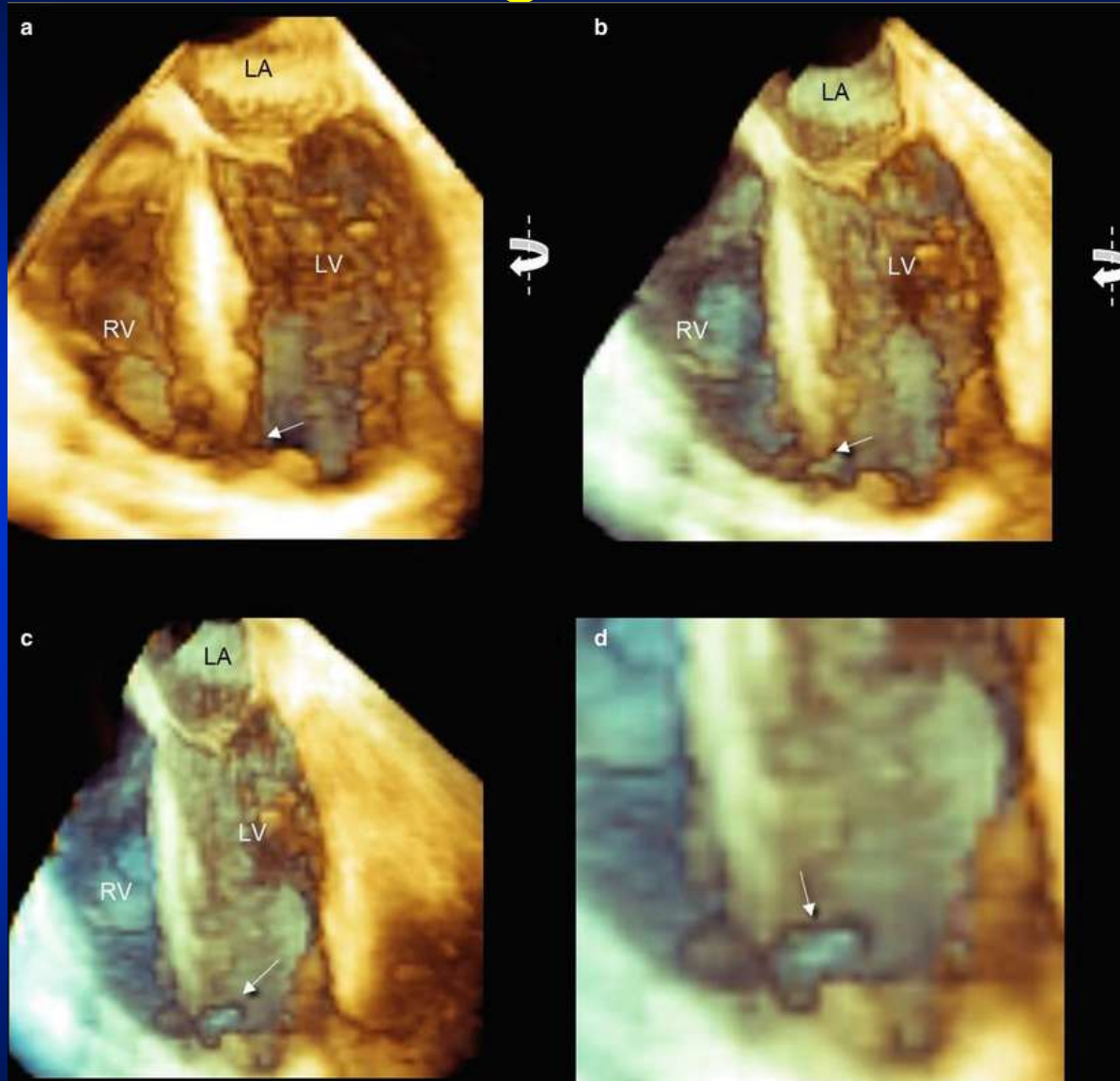


- Untreated mortality
 - >80% within the first month
 - >90% within the first year
- Surgical mortality
 - 50% within 3 wks
 - 38% after 3 weeks
- Surgical large residual 10-20%

Important informations before device closure

- History
 - Pt age, gender, vital signs
 - AMI time, involved coronary artery
 - Previous intervention (surgery, PCI?)
 - Inotropic agents, IABP, ECMO
 - Associated complications (renal function, pulmonary edema, infection?)
- ECG/CXR
- Echo
 - VSD number, size, location
 - LV wall motion, valve function

TEE guidance



Gila Perk, Natesa G. Pandian, Hans-Joachim Nesser and Itzhak Kronzon

Step 1: Vascular accesses

- Rt internal jugular vein
- Rt femoral artery

Step 2: Heparin

- 5000 u if no contraindication

Intraluminal Thrombus



Fibrin sheath extending beyond the tip of the catheter and occluding it completely.



An organized thrombus occluding the tip of the catheter.



The organized clot extruded from the catheter.

Step 3: Hemodynamic study

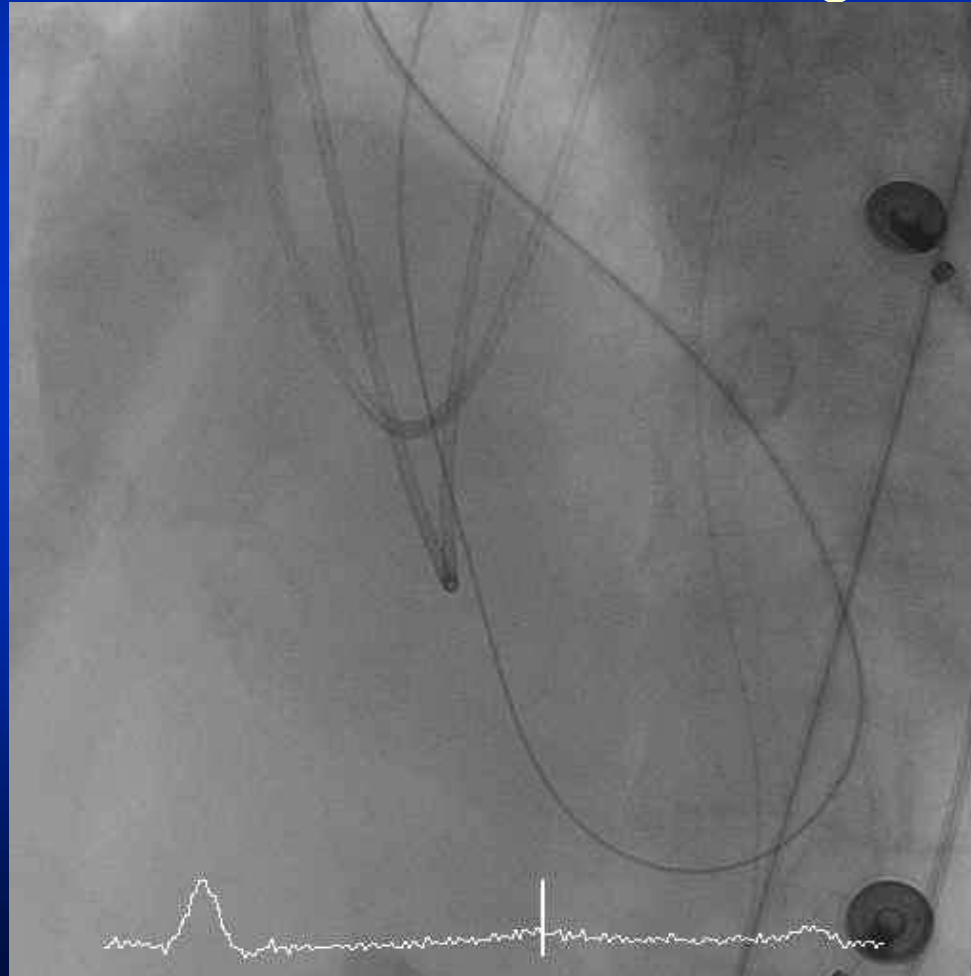
- Measure the pulmonary artery pressure
- Check Q_p/Q_s

Step 4: left ventriculogram

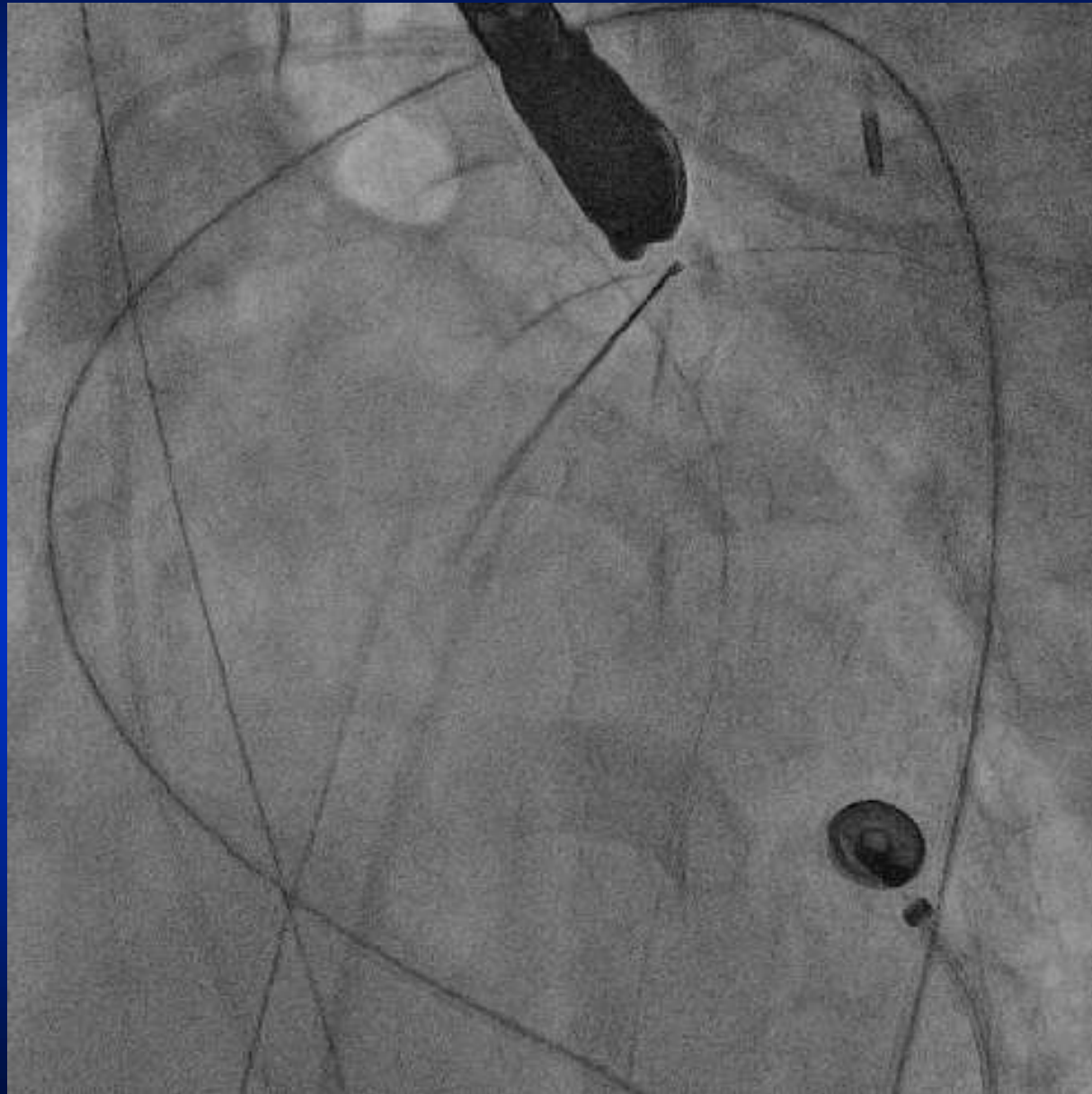


Step 5: Cross VSD

- 6F Judkins right, cut-off pig-tail or wedge balloon catheter
- 0.032 or 0.035-in 260 cm Terumo glide wire



Step 6: AV loop



Step 7: Balloon sizing ?



Step 8: Select type and size of device)



Muscular VSD
4-18 mm



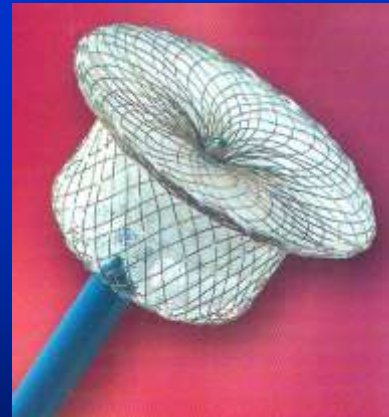
PI Muscular VSD
16-24 mm



ASD
4-38 mm



Cribriform ASD
18-35 mm



PDA
4-10 mm



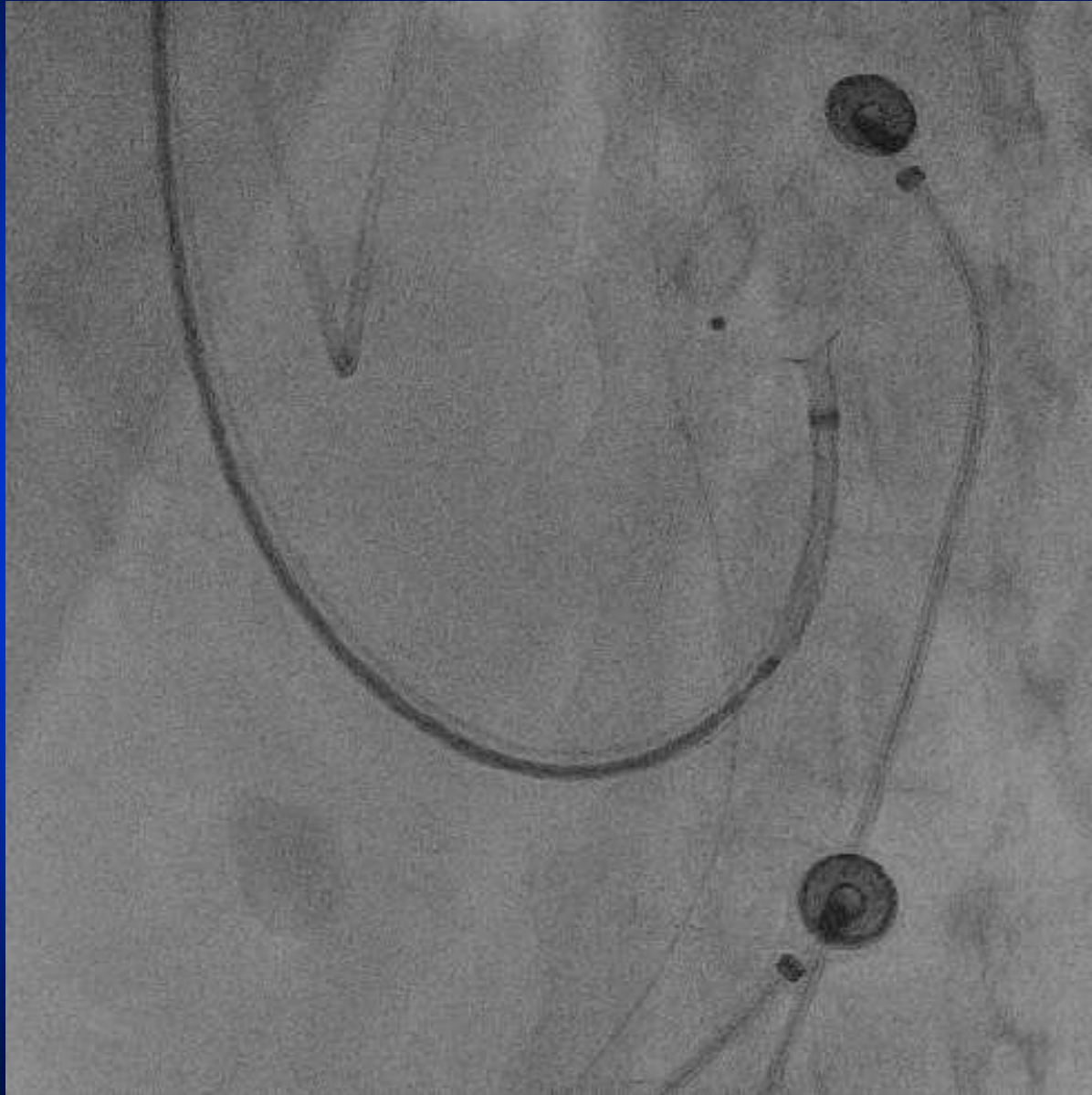
Vascular plug II
3-22 mm

Step 9: Long sheath

- Advance an appropriate sized long sheath in LV



Step 10: Deploy device



Step 11: Confirm position

- Echo: device position, valve impingement
- LV angio

Step 12: Release device and final LVG

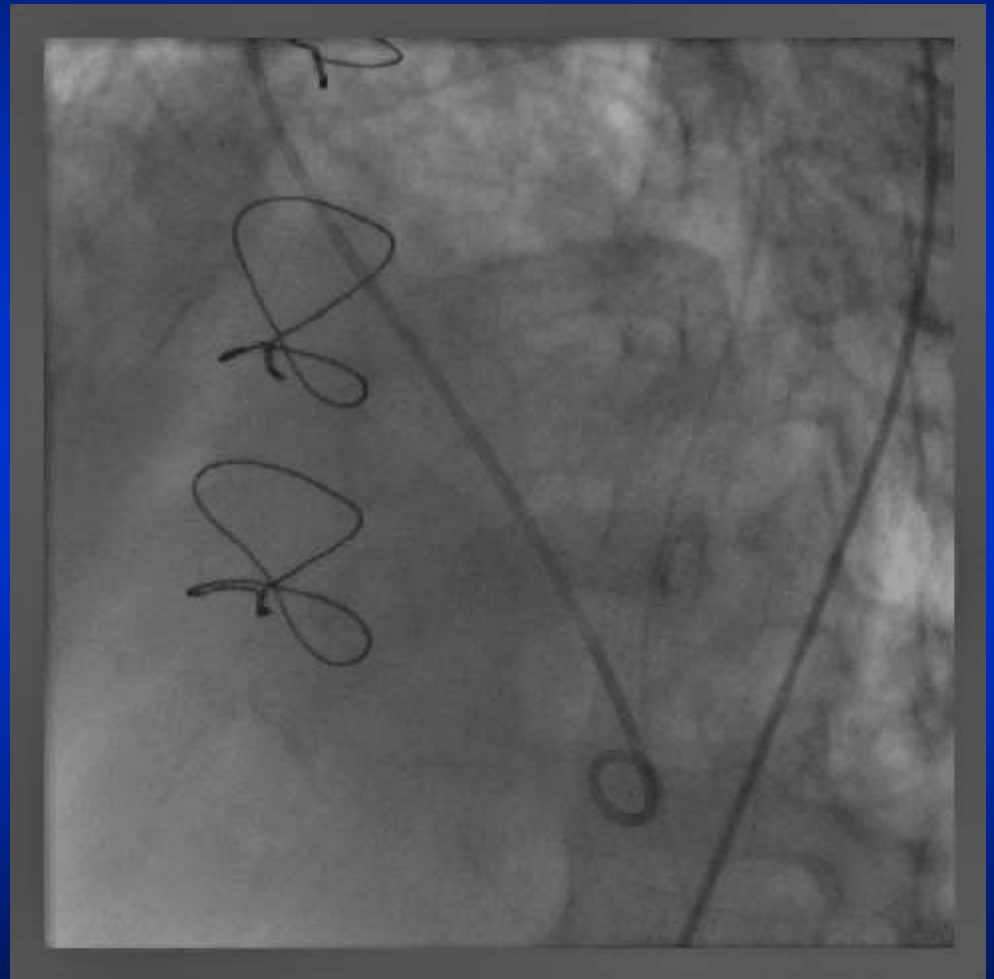
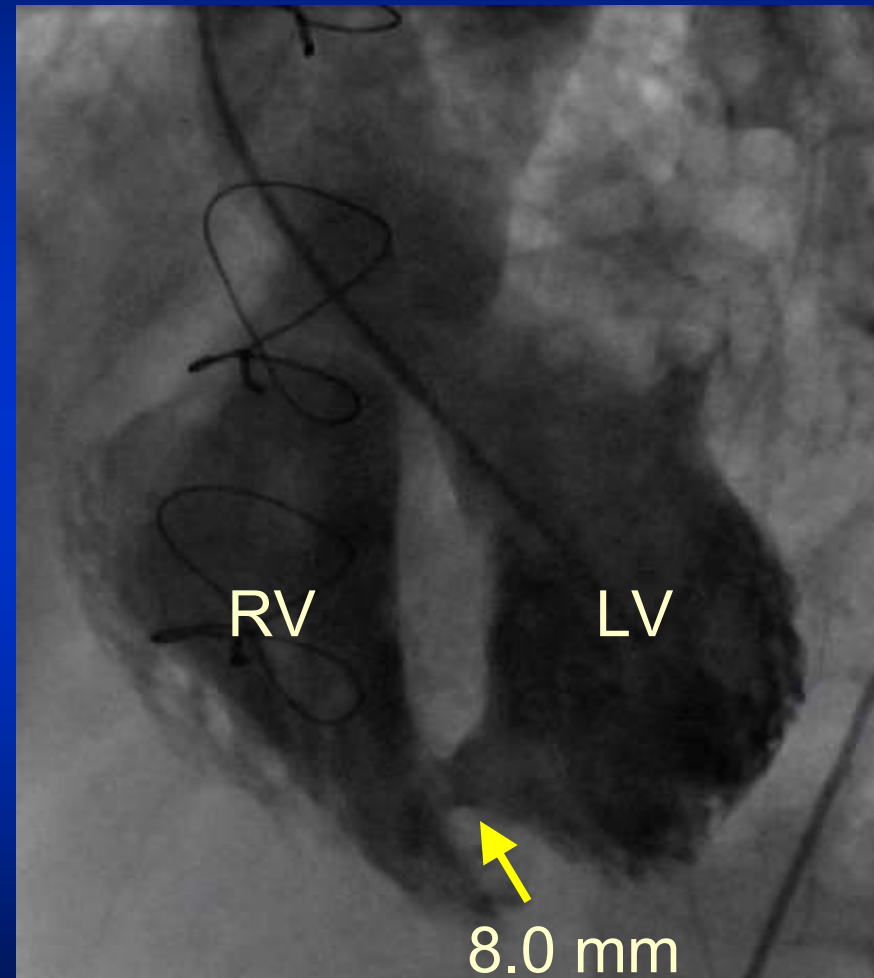


Post-device management

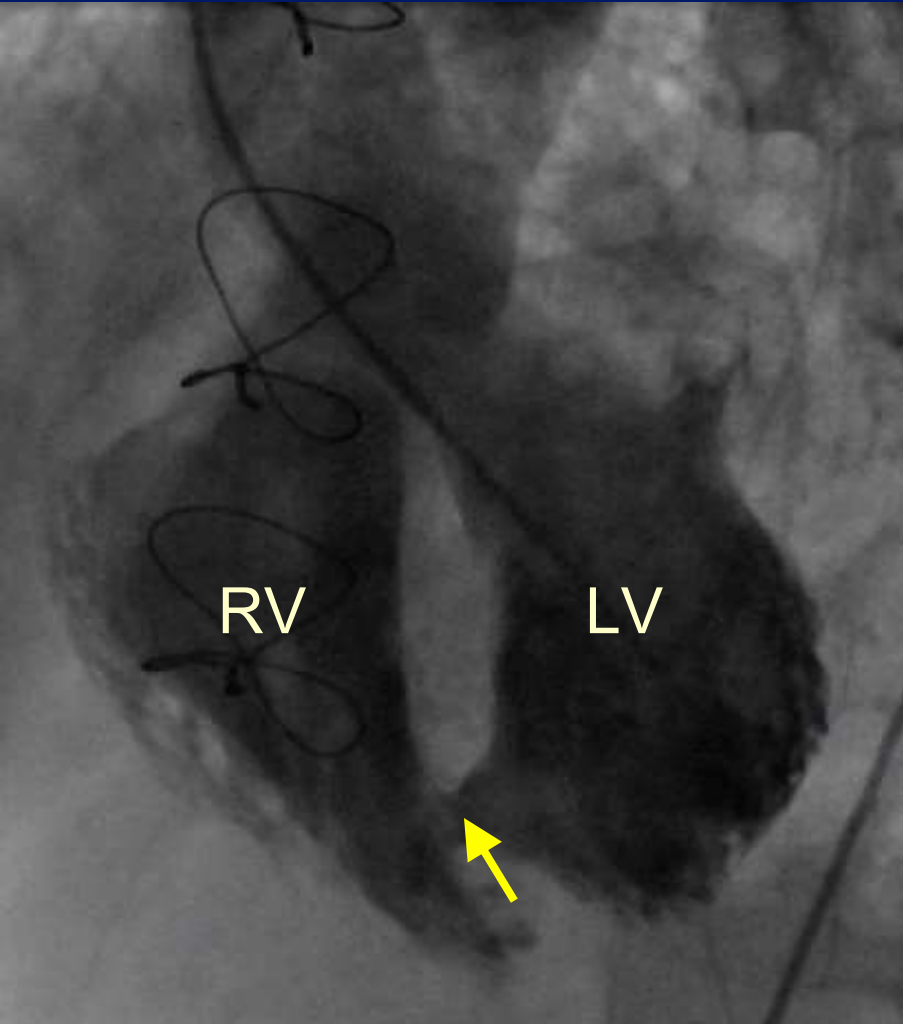
- ECG, Echo, CXR
 - next day, 1 month, 6 months, 12 months
- Anti-platelet
 - Mono or dual for at least 6 months

73 y/o male PMIVSD

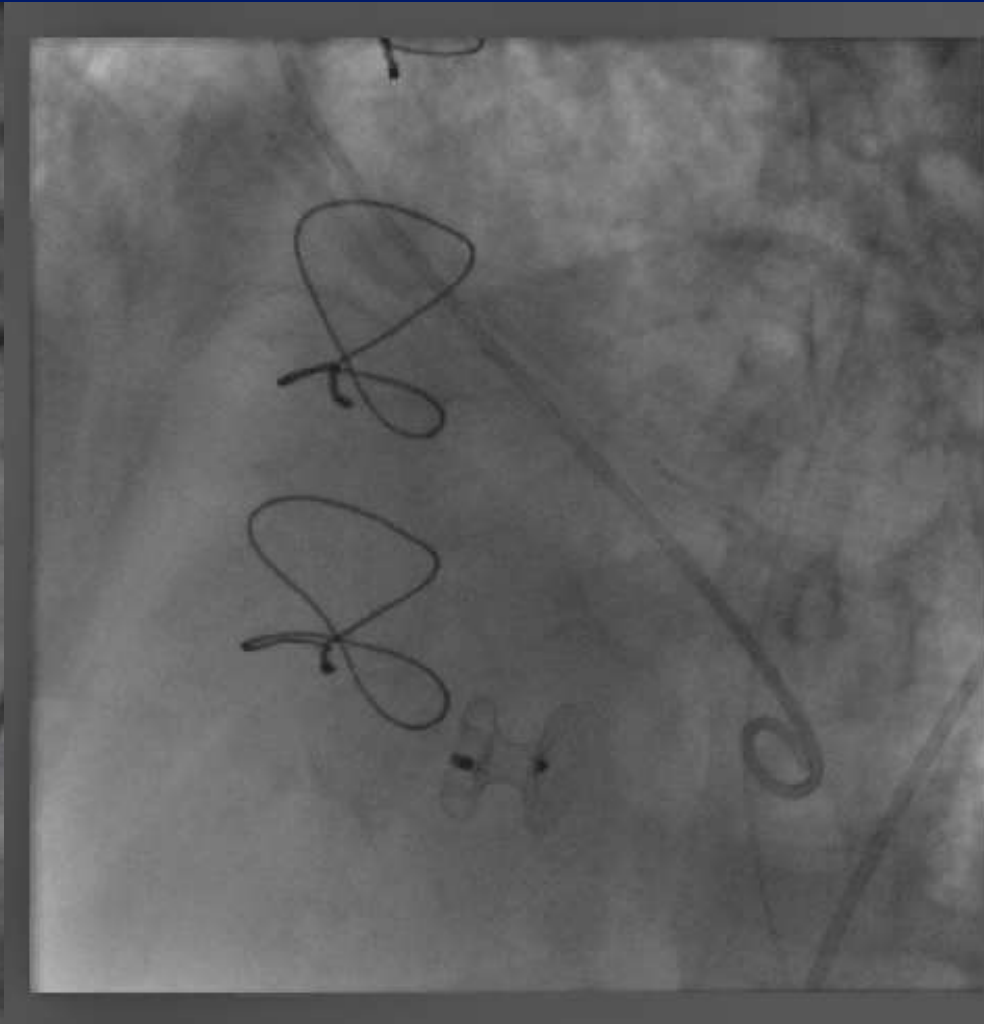
$Q_p/Q_s = 2.5$ (2012-02-23)



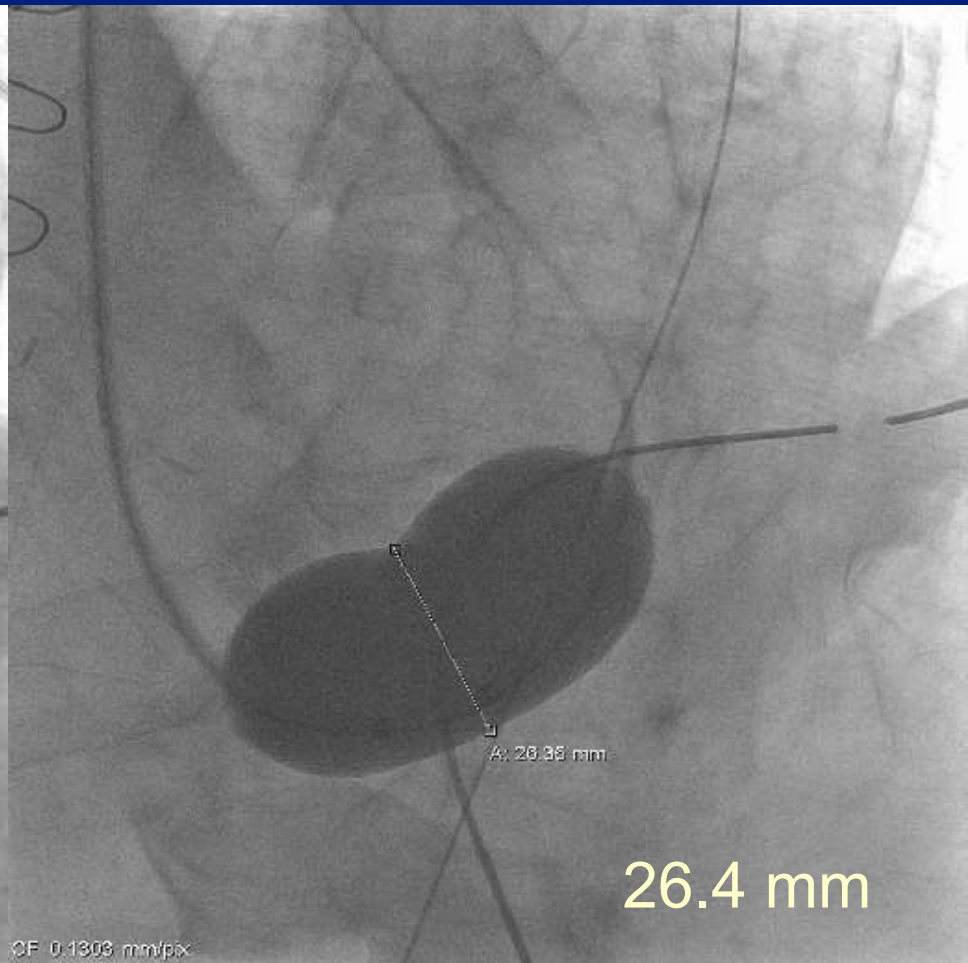
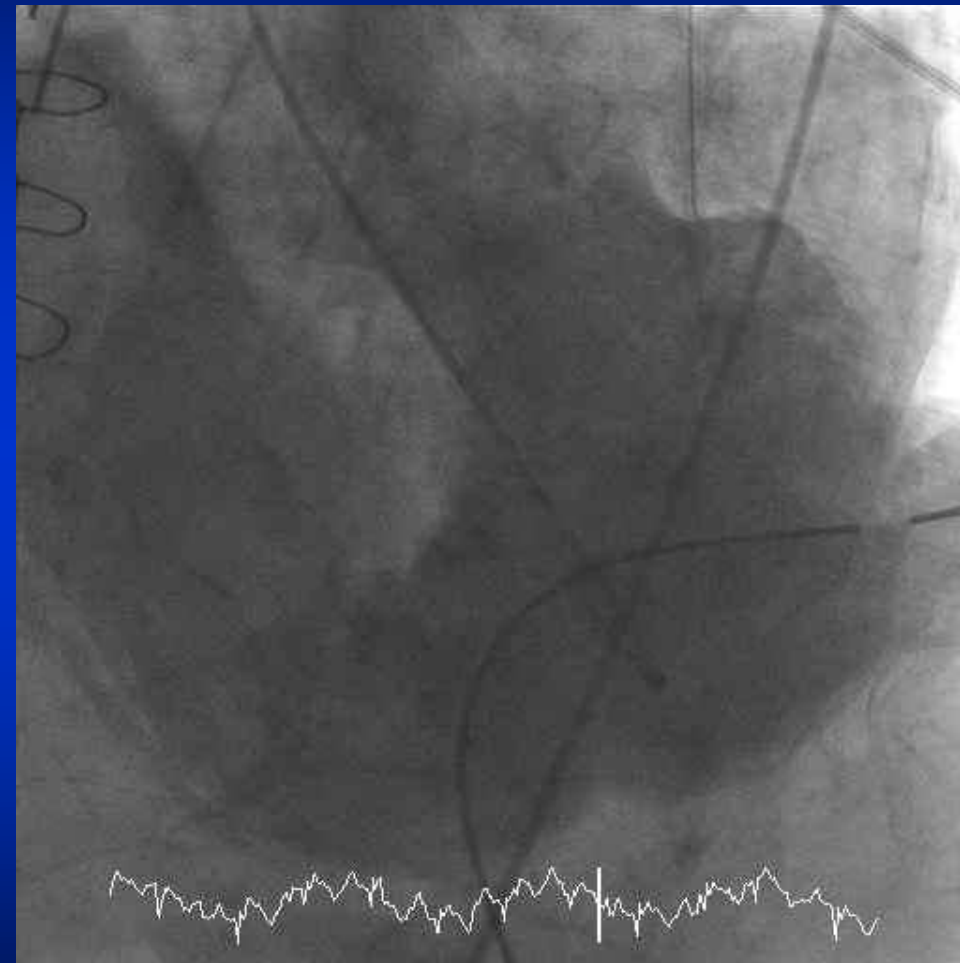
Pre



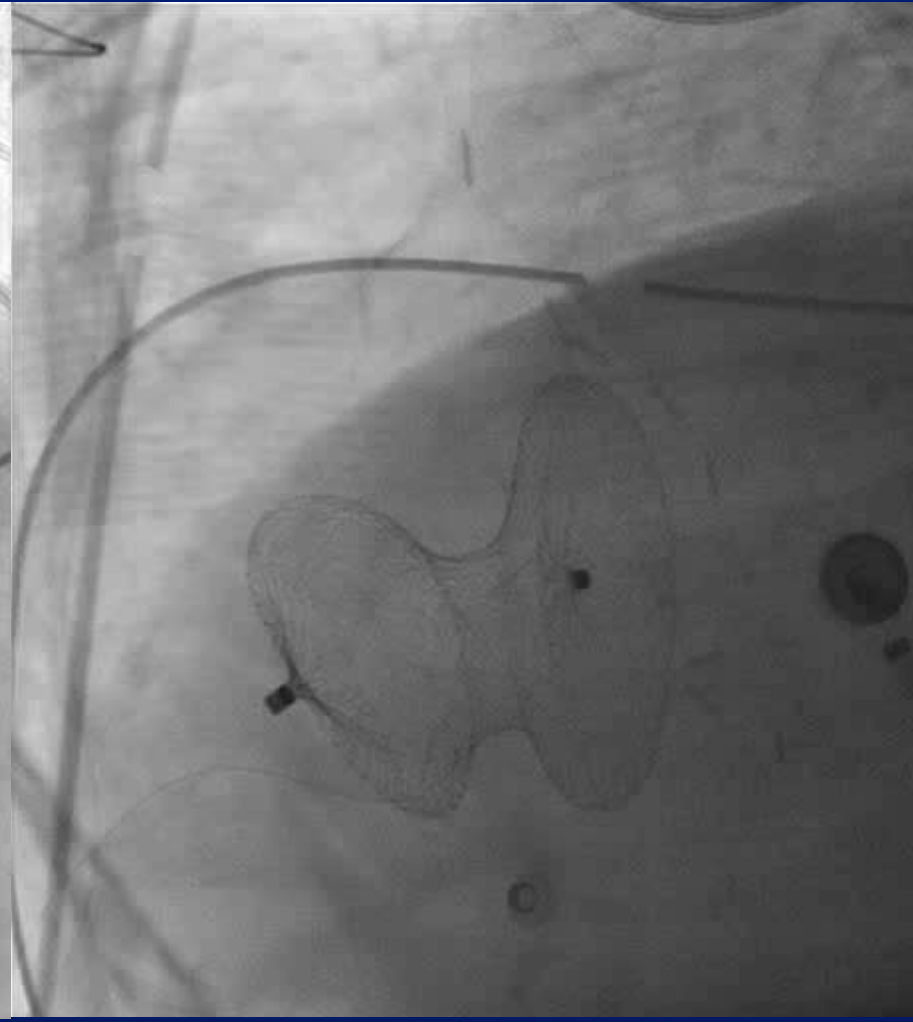
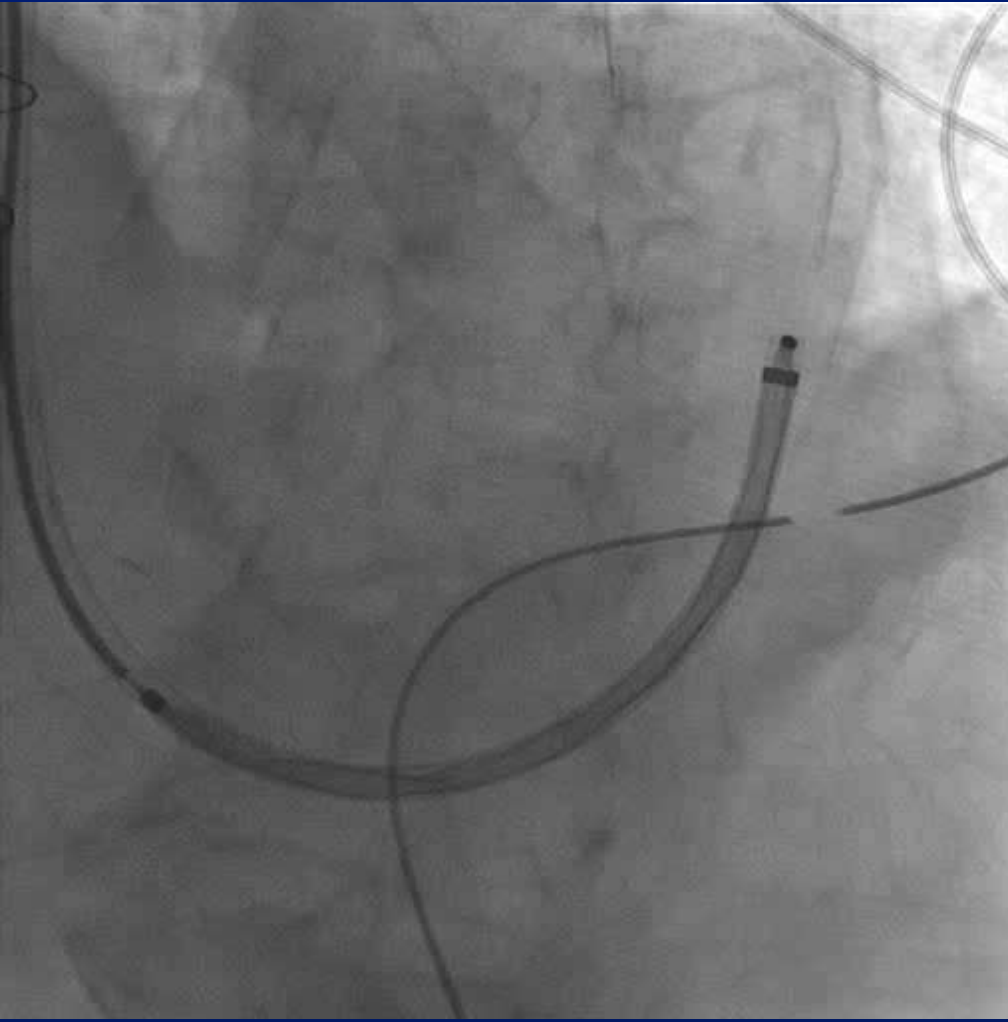
Post
12 mm muscular VSD occluder



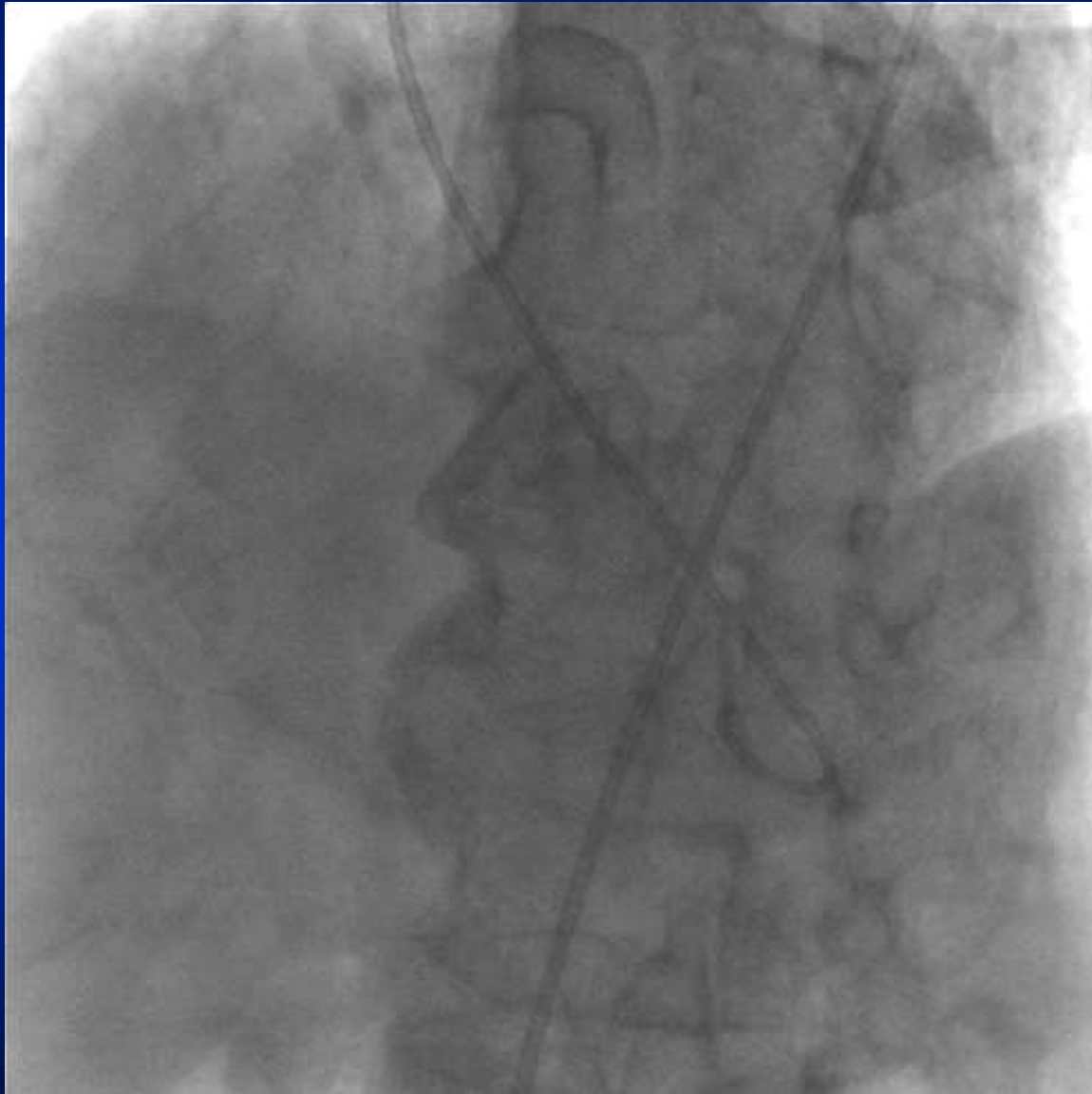
71 y/o male post-MI VSD



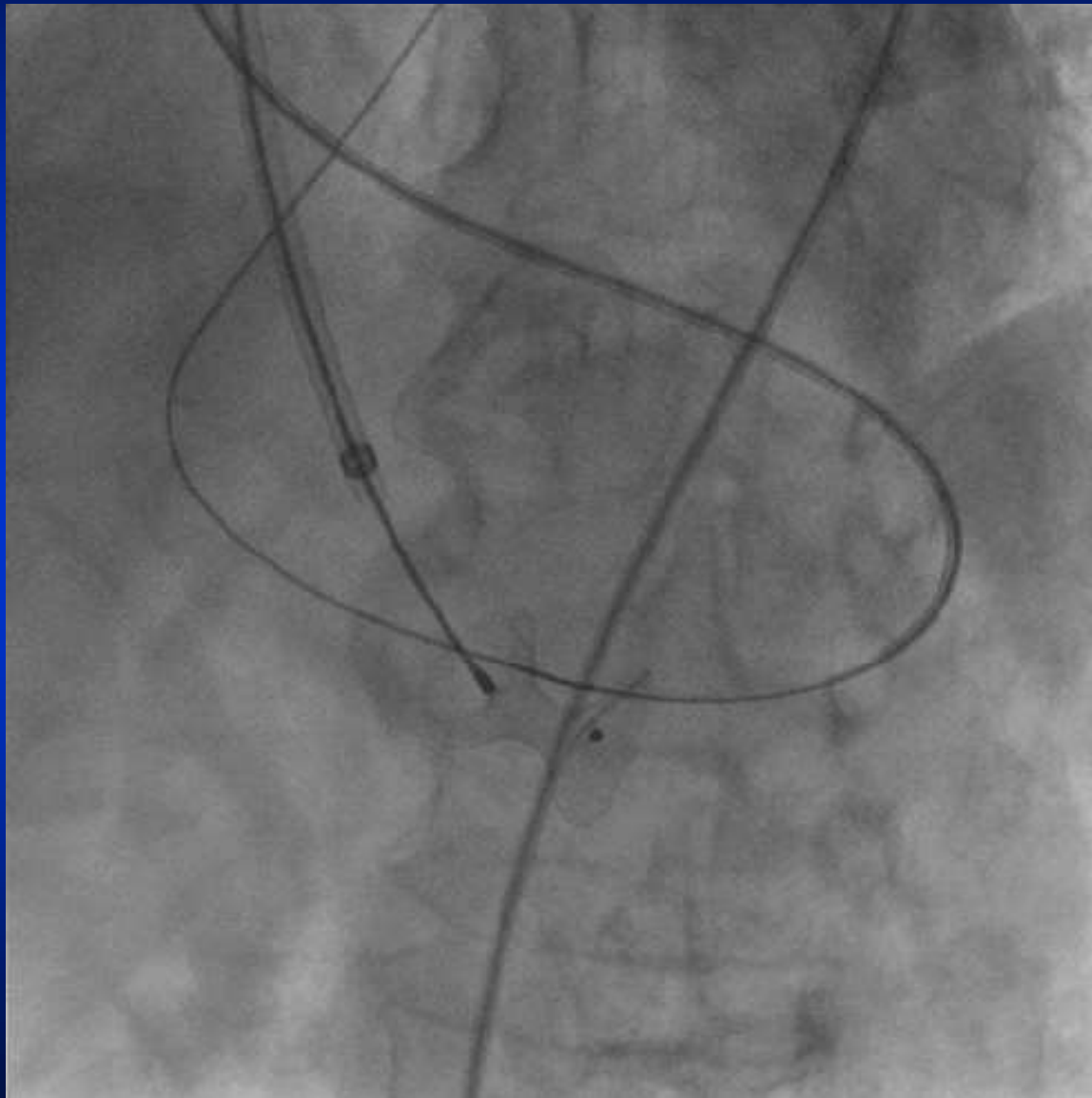
38 mm Amplatzer septal occluder



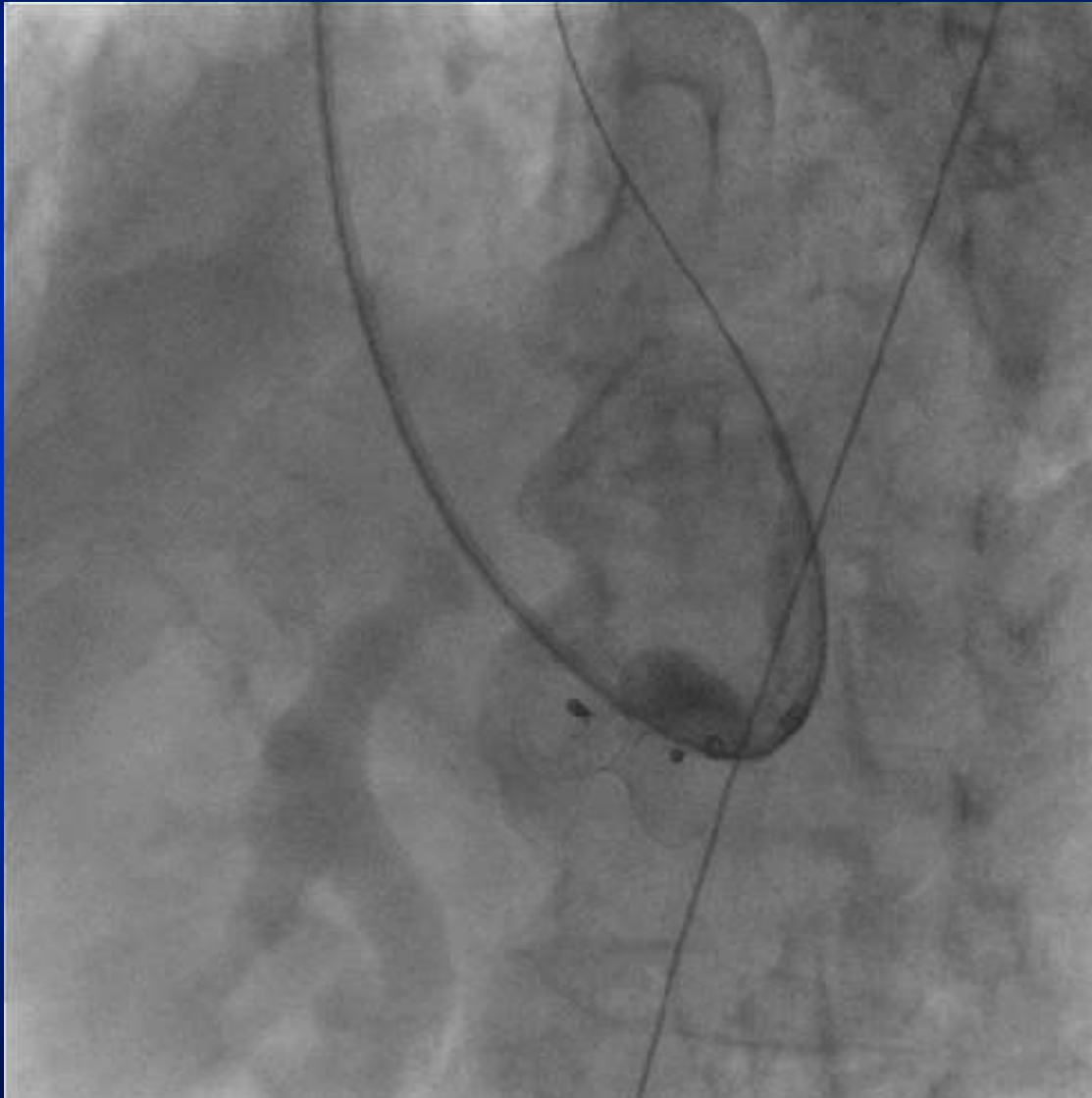
79 y/o man



Cross 2nd VSD



Balloon sizing 2nd VSD



79 y/o man s/p closure with two Amplatzer muscular VSD occluders (18 mm)



Conclusions

- With the advance of devices and techniques, percutaneous device closure of post-MI VSD is feasible, relatively safe and effective to reduce the shunt.
- However survival still depends on many factors including LV function, associated complications etc.