

**COMPLEX ASD CLOSURE:
LARGE DEFECT WITH DEFICIENT
RIMS**

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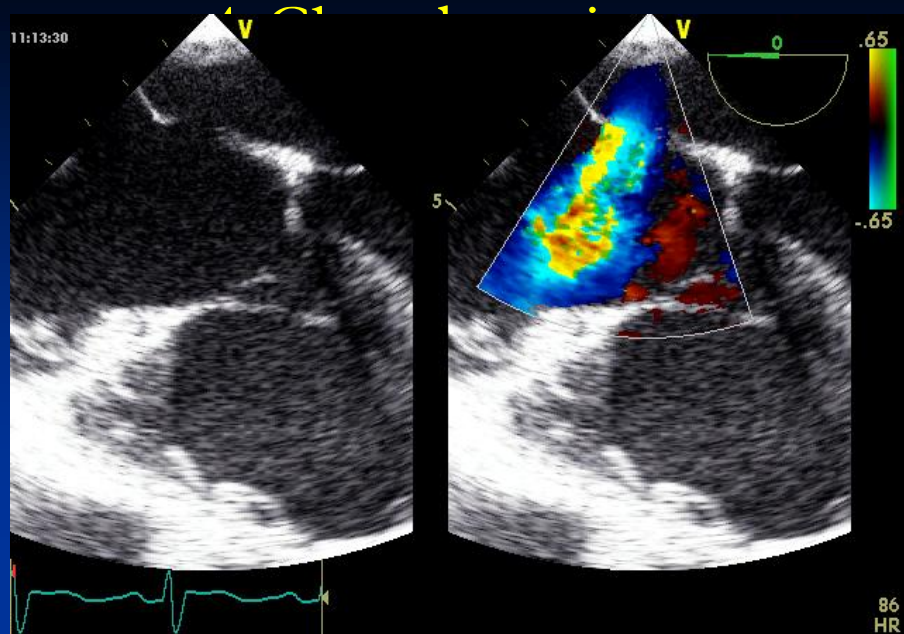
Professor of Paediatric Cardiology

Lahore

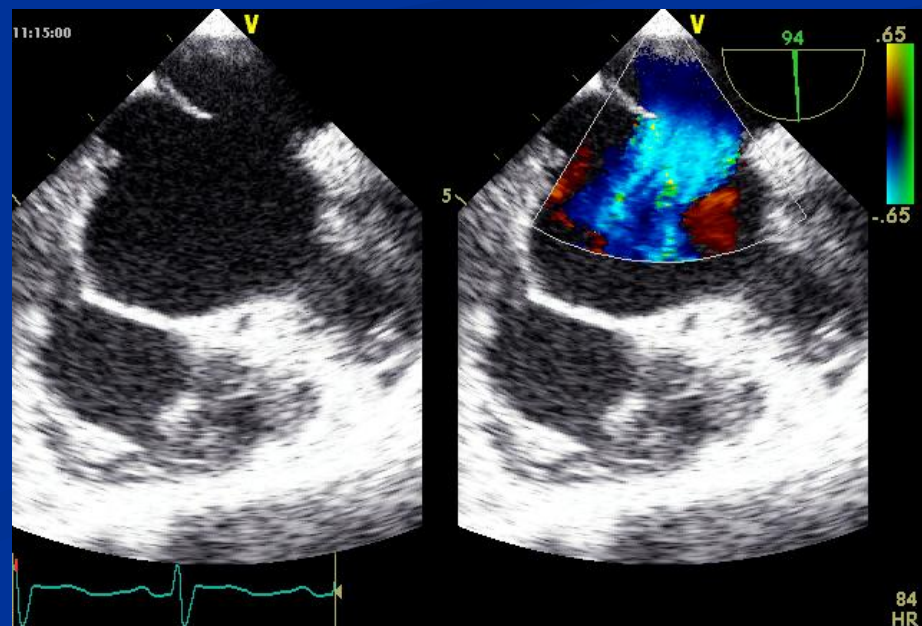
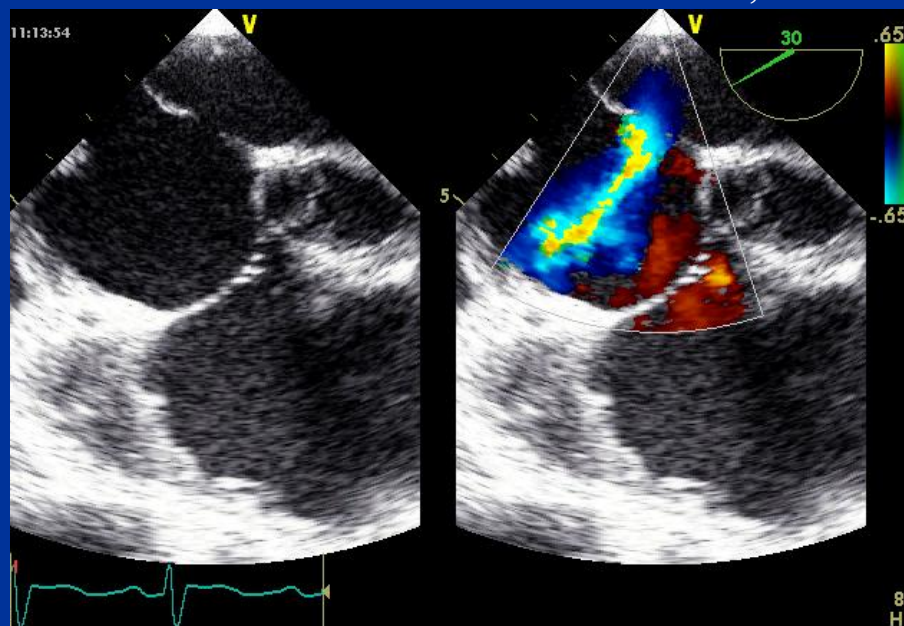
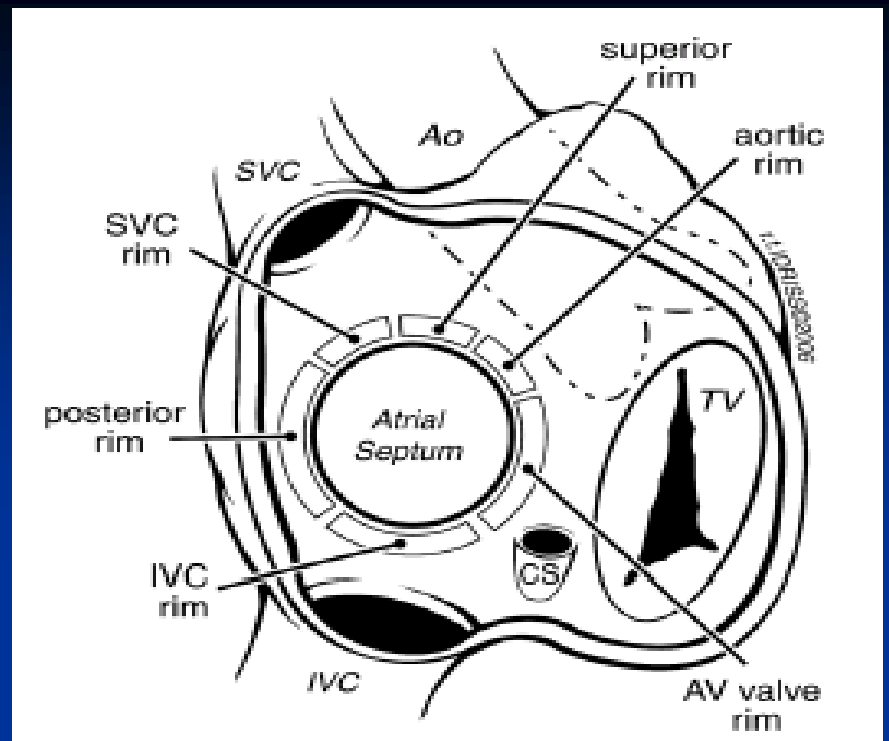
PAKISTAN

Complex ASD

- The presence of a large- ≥ 20 mm (stretched diameter ≥ 26 mm) ASD associated with
 - A deficient (≤ 4 mm) rim located at the anterior, inferior, or posterior portion of the atrial septum
 - Two separate ASDs within the atrial septum (distant or close to each other); and multi-fenestrated septum
 - Defects associated with a floppy, redundant, and hyper mobile atrial septum (excursion ≥ 10 mm), considered to be aneurysmal, irrespective of their size

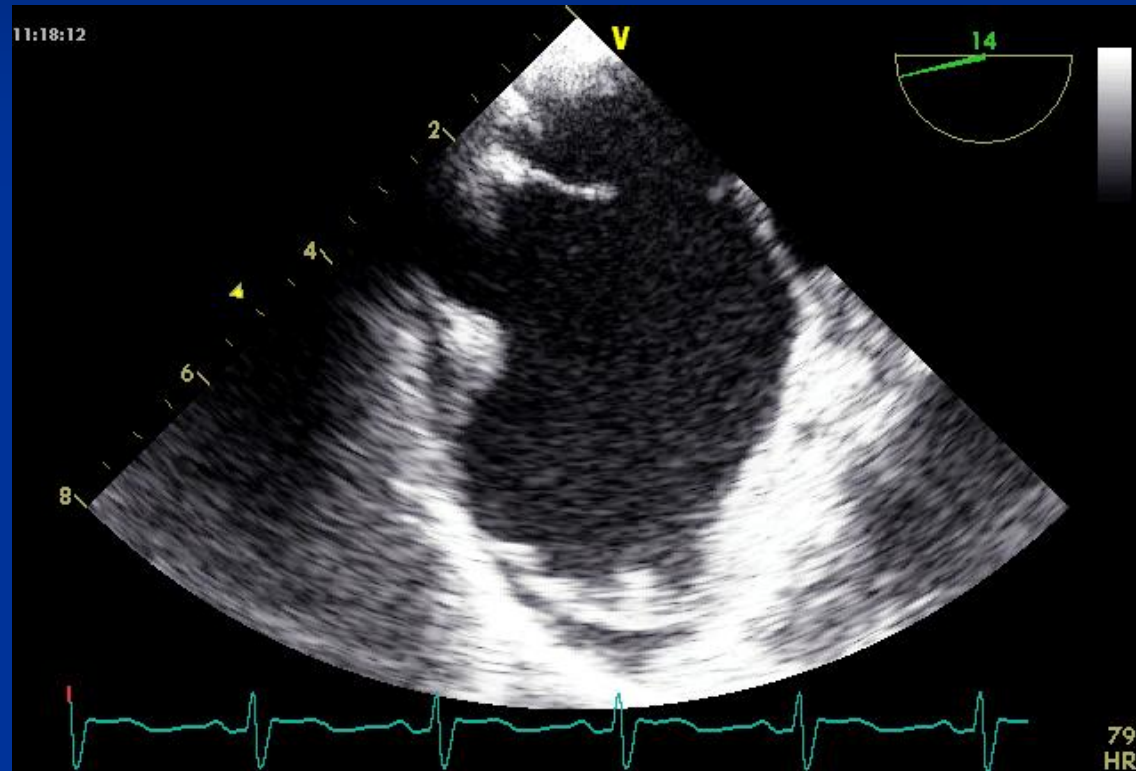


Shrivastava S et al *Ind Heart J* 2003;55:88-89
 Amin Z. *Catheter Cardiovasc Interv* 2006;68:



Logic of rims

- For a circular or an oval orifice it may not be logical to have a fixed number of rims
- Ideally the entire circumference must have a rim and needs to be interrogated
- The complex anatomy of IAS does not always allow this!!

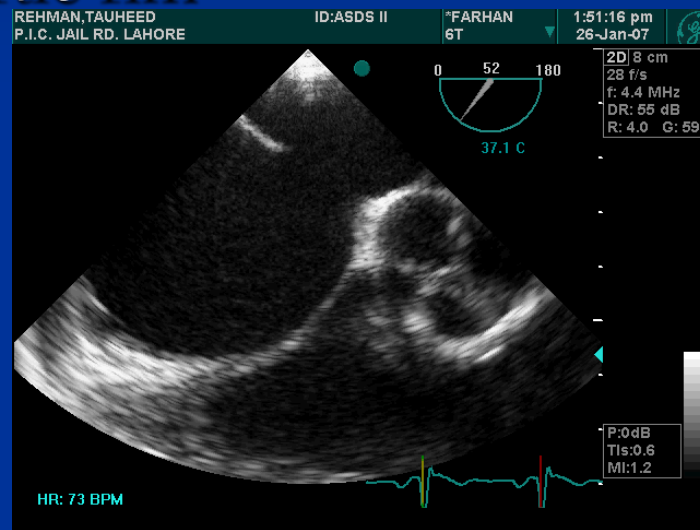


What is an adequate rim?

- 5mm is considered suffice
- Is it true for all the rims? What about superior rim (6-7mm is considered borderline)
- Is the length only issue?
- What about thin and/or floppy margins?

Defects with less than adequate rims

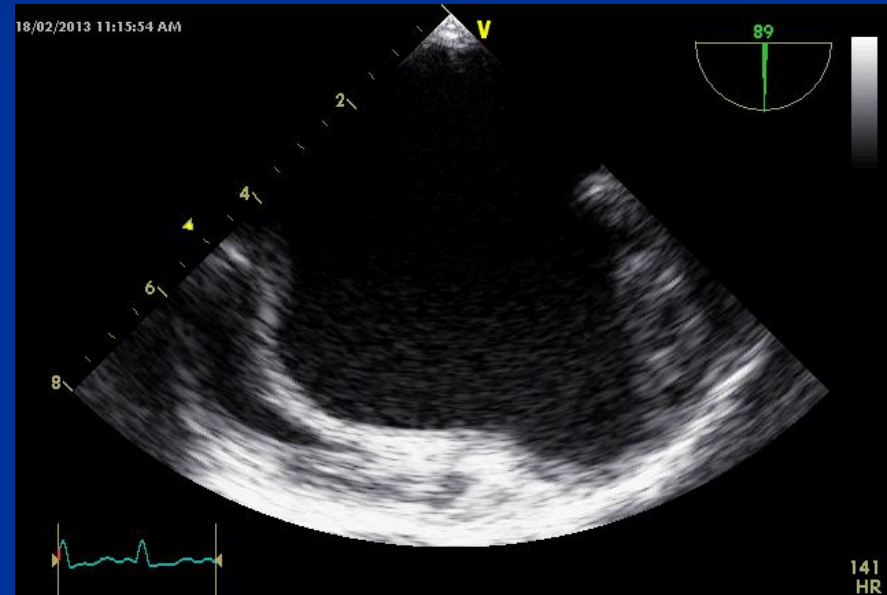
- Which ones are suitable for device closure?
 - Deficient aortic rim



- Which ones increase the likelihood of complications?
- Which ones to avoid completely?

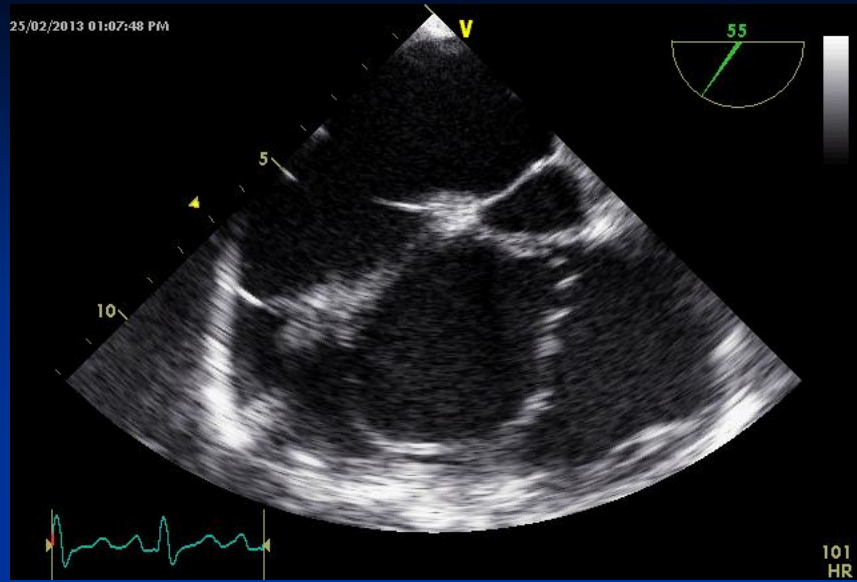
Which defects cannot be closed?

- Large ASDs $>38\text{mm}$ diameter
- Absent or truly deficient
 - IVC rim
 - SVC rim
 - superior rim (PVs rim)
 - inferior (AV valves) rim

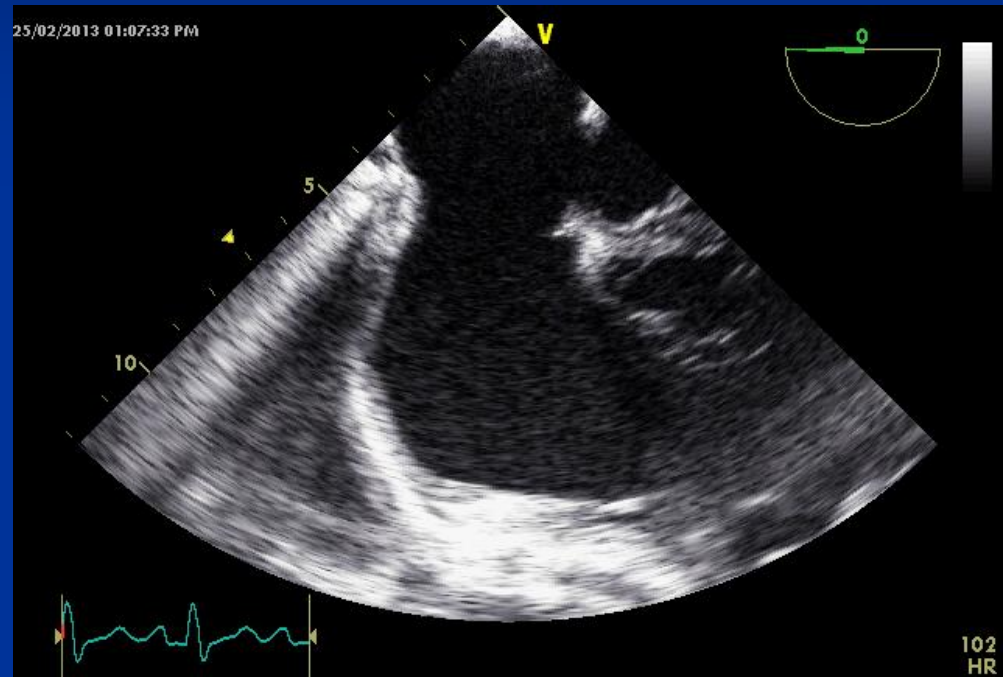


- Those with absent rims in >2 areas
- Device is too large to fit in the atria

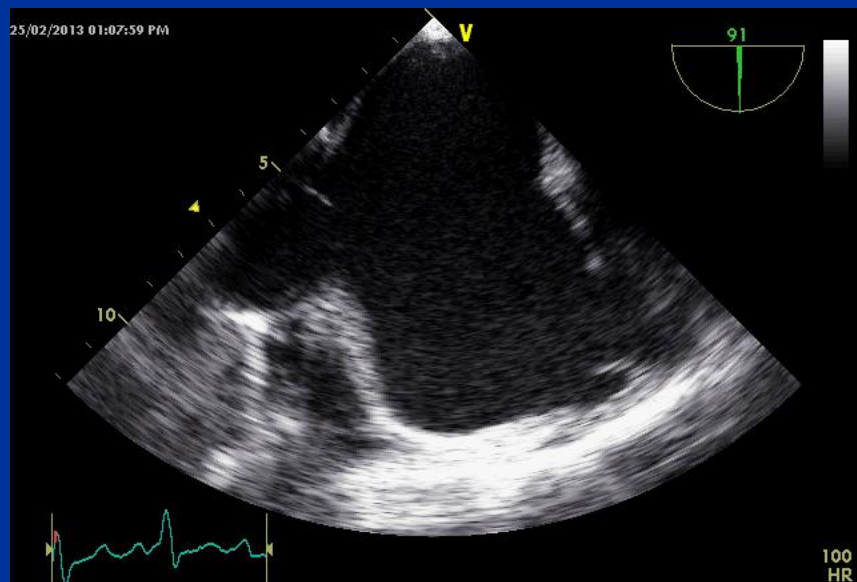
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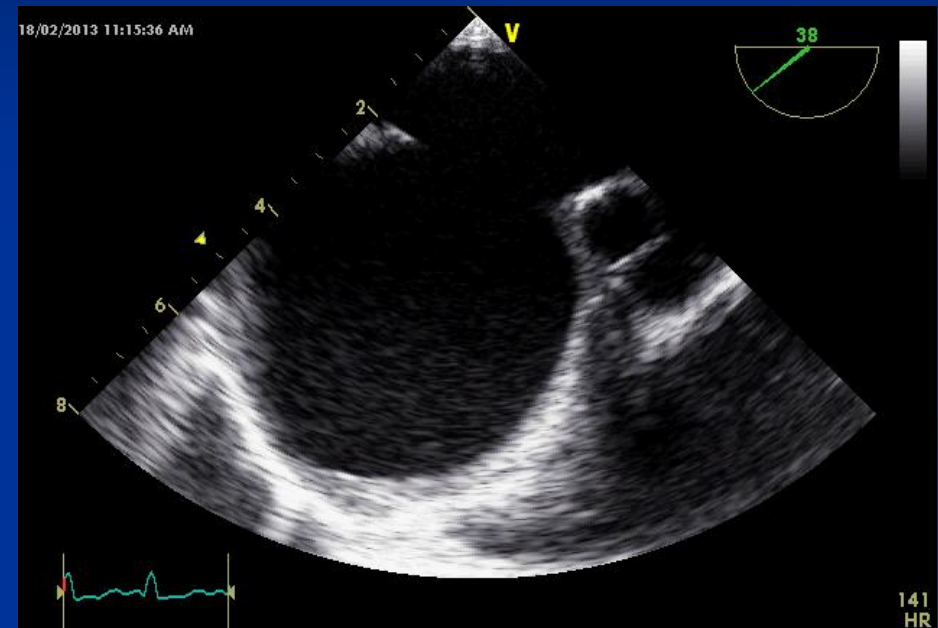
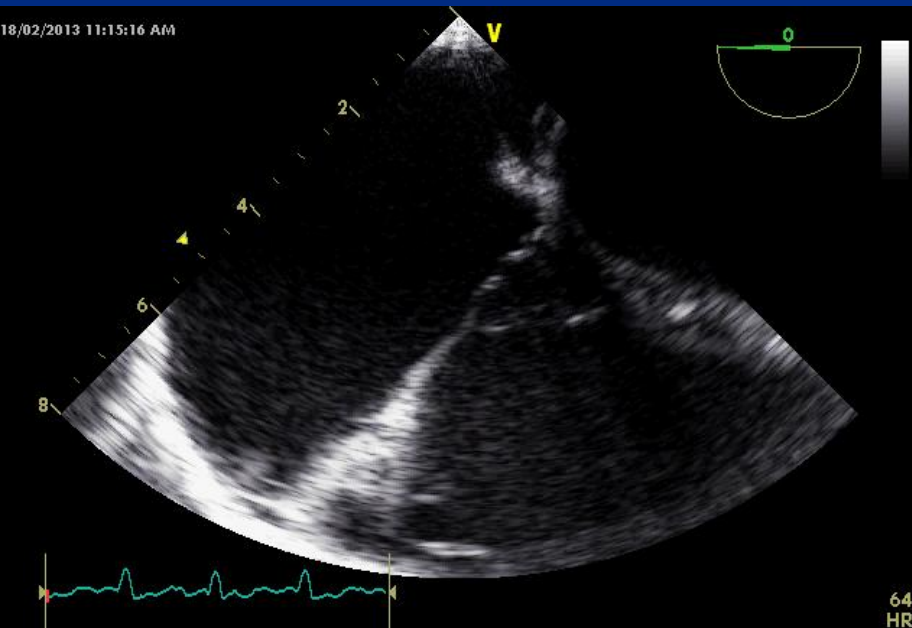
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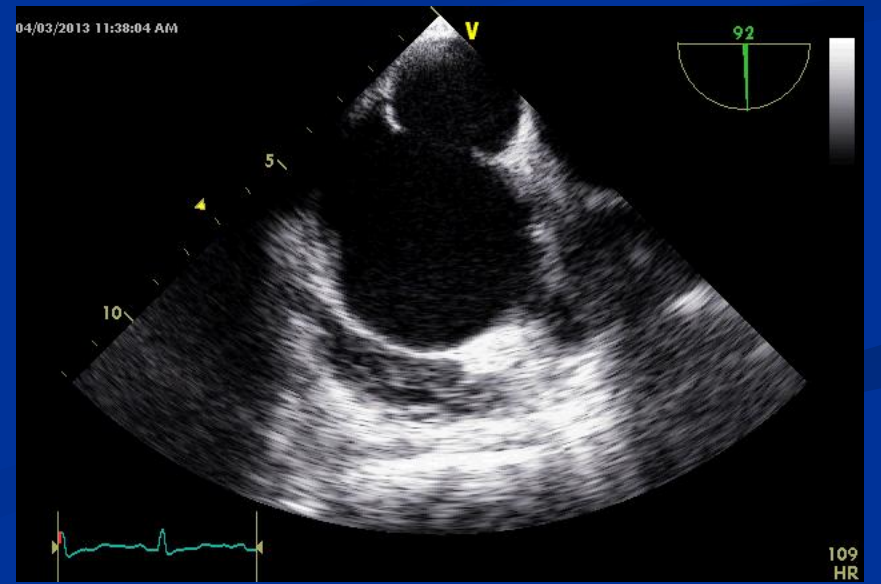
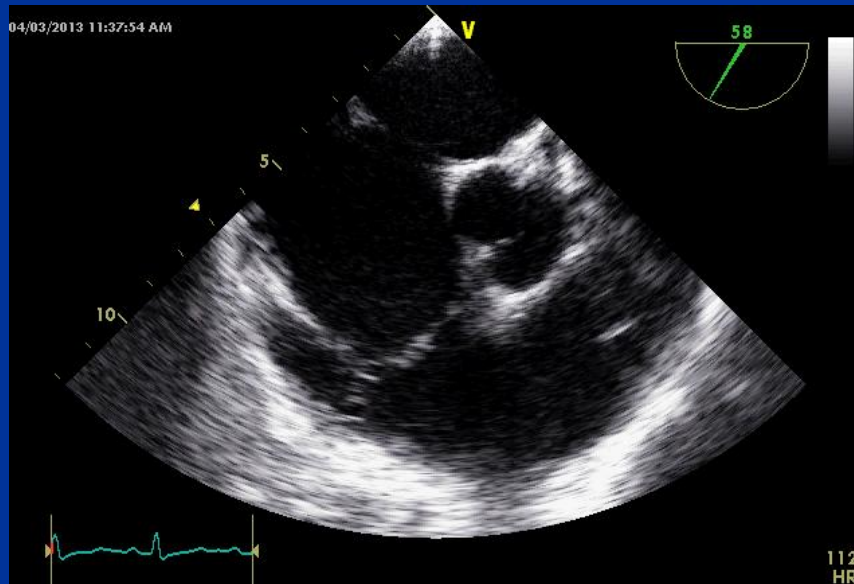
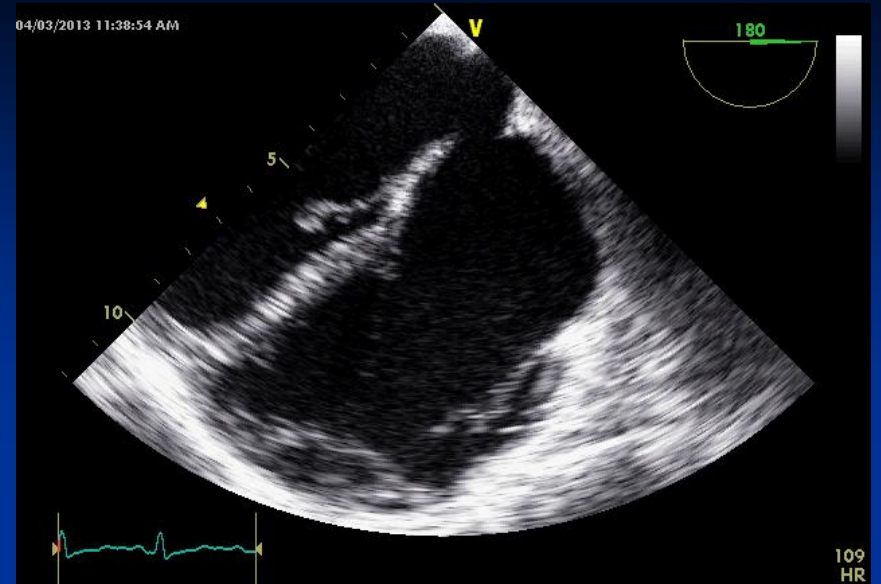
Defects which increase likelihood of complications

- Deficient aortic and posterior rims
 - Deficient superior rim
 - Floppy rims
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- Small child with a large ASD
 - Unusually placed ASD

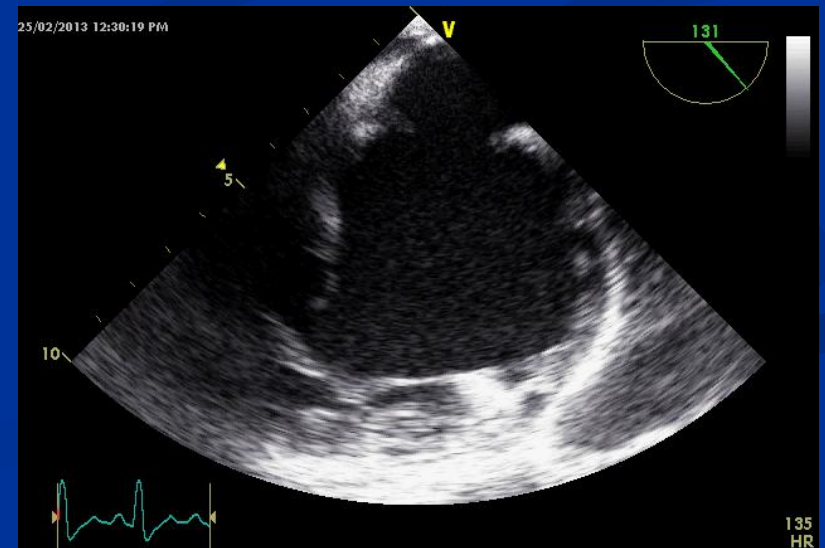
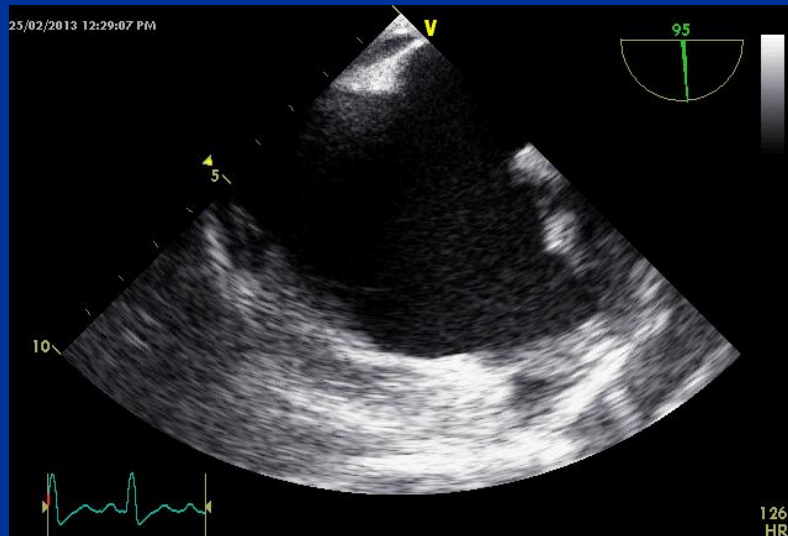
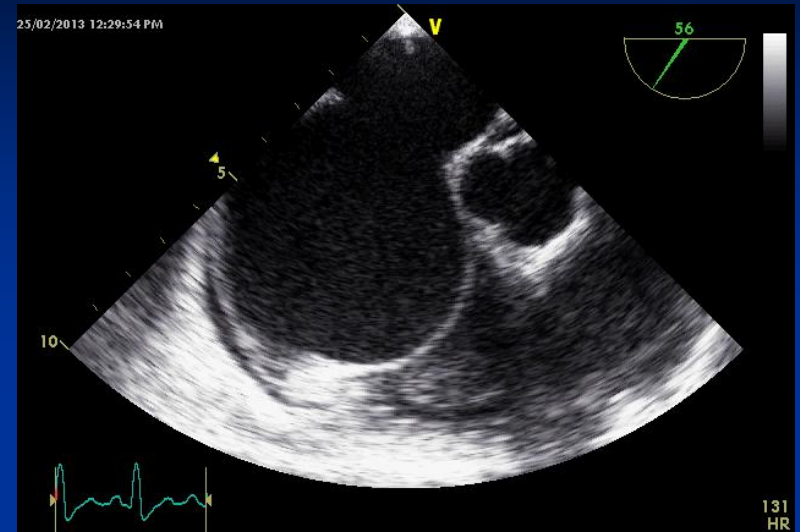
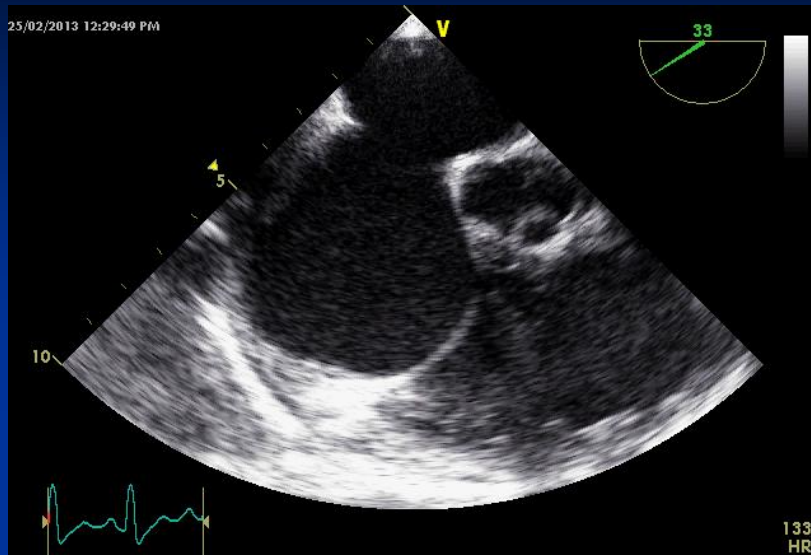
Deficient posterior rim



Deficient superior and aortic margin

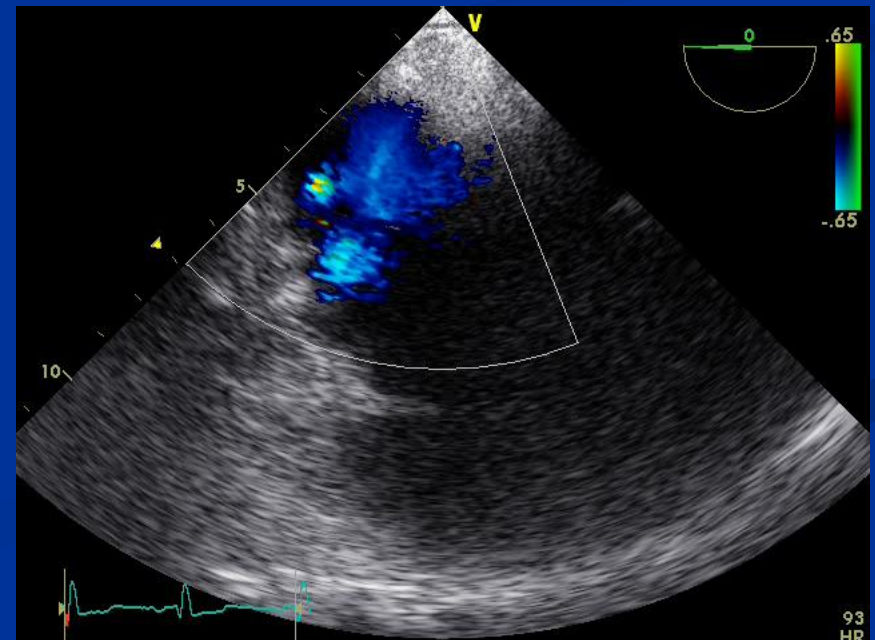
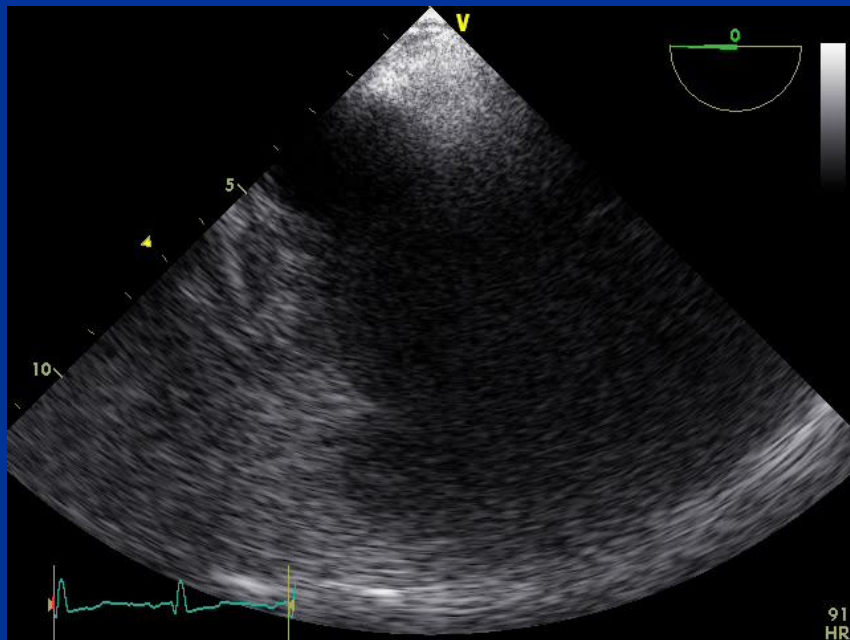


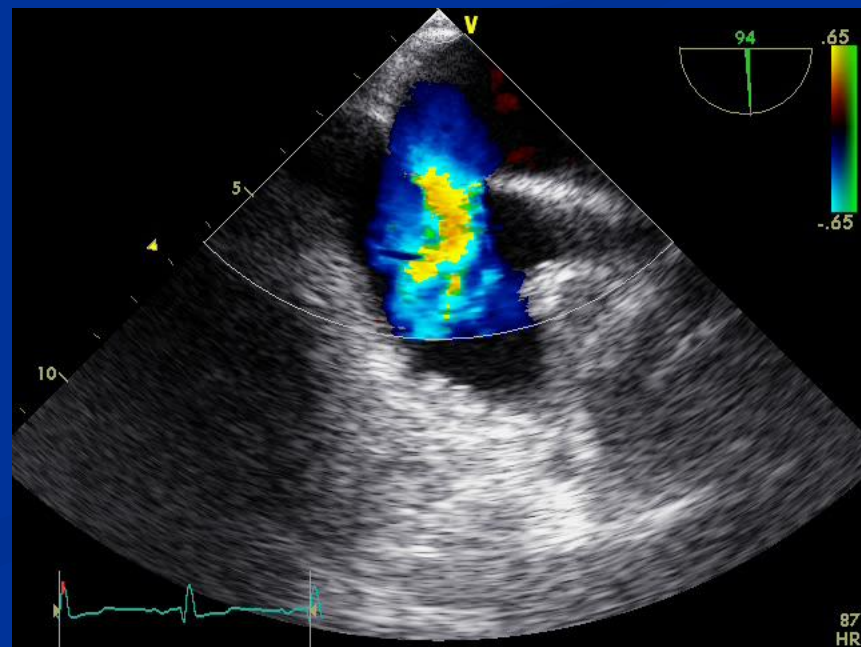
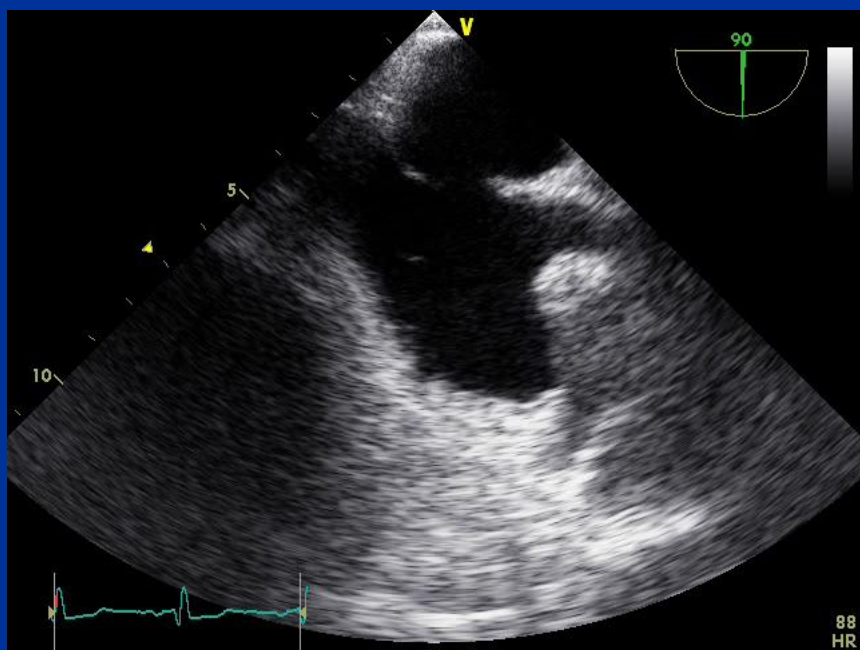
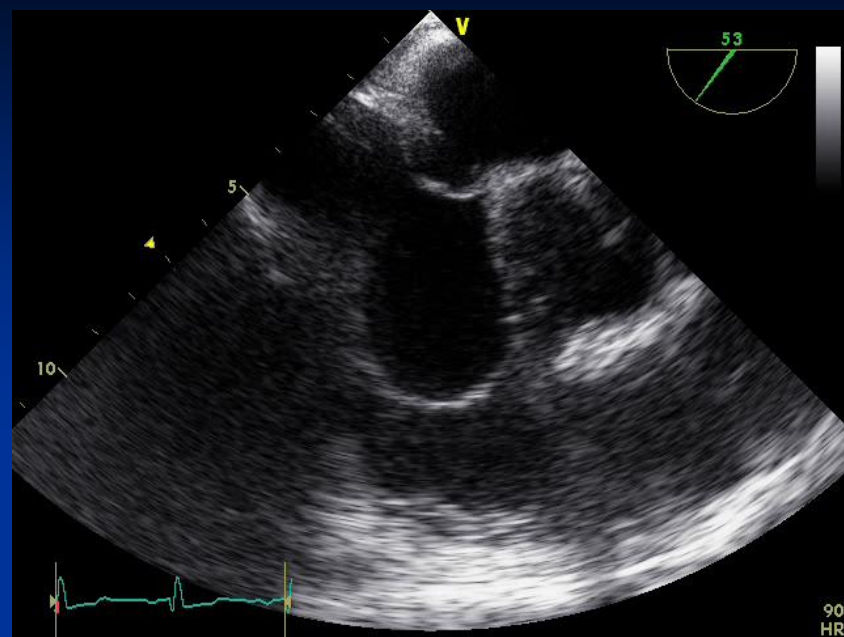
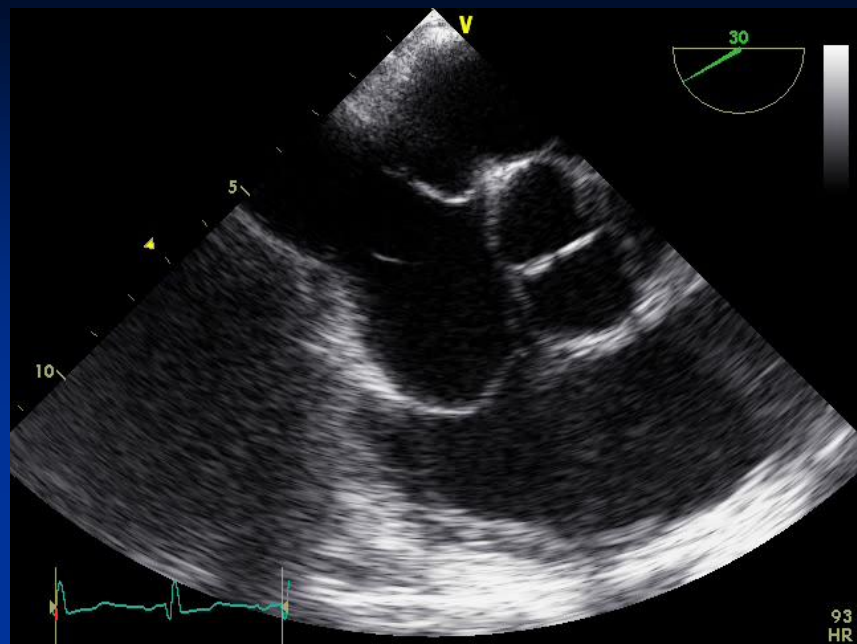
Deficient superior, posterior and inferior margins

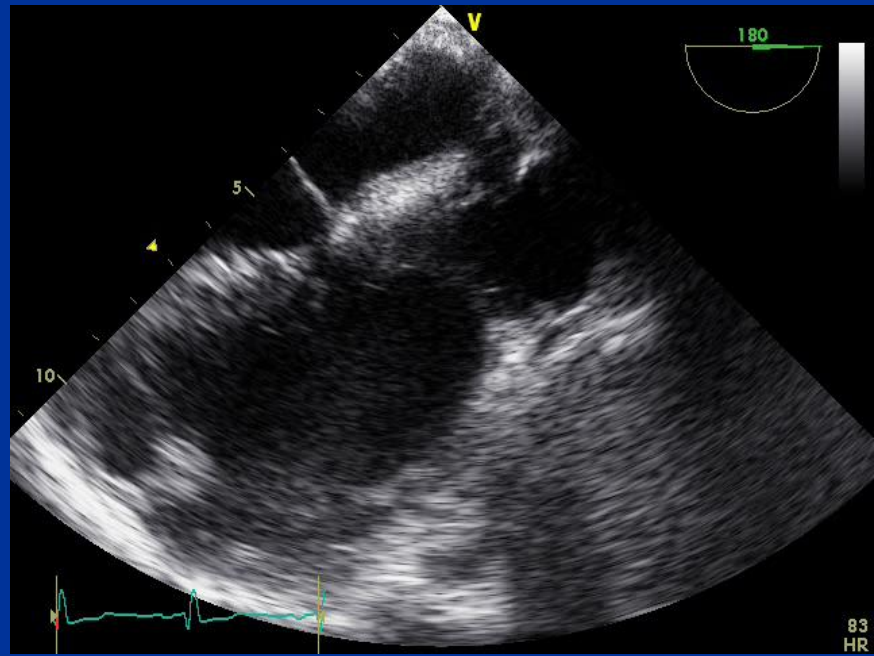
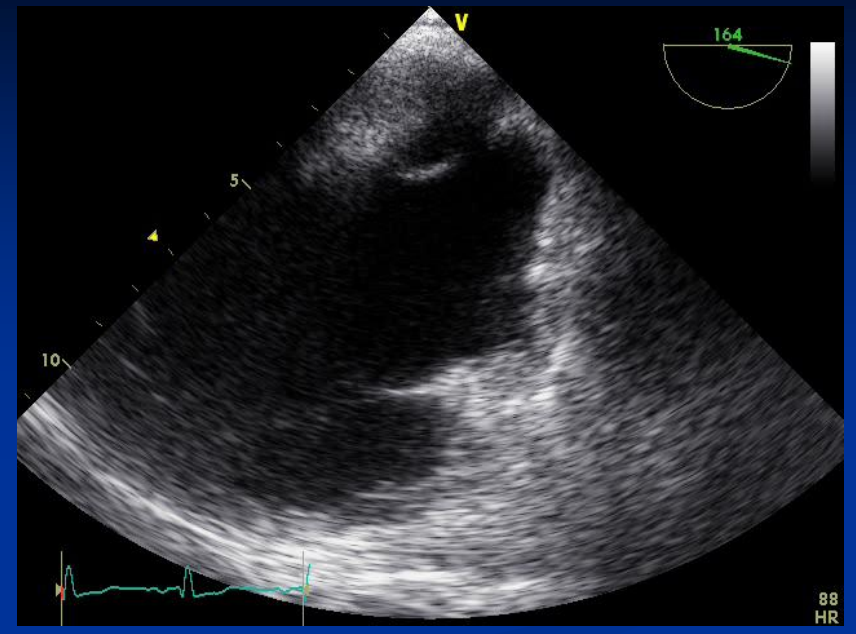
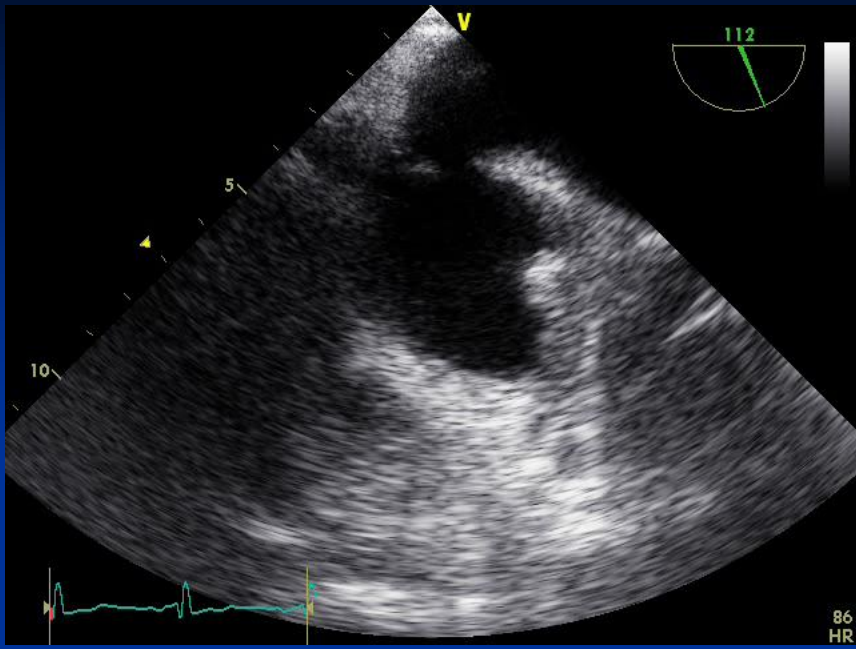


Case Presentation (Case 1)

- A 42 year female presented with progressive shortness of breath
- Clinical signs suggestive of an ASD
- CXR showed cardiomegally and ECG showed RAD with RV volume overload

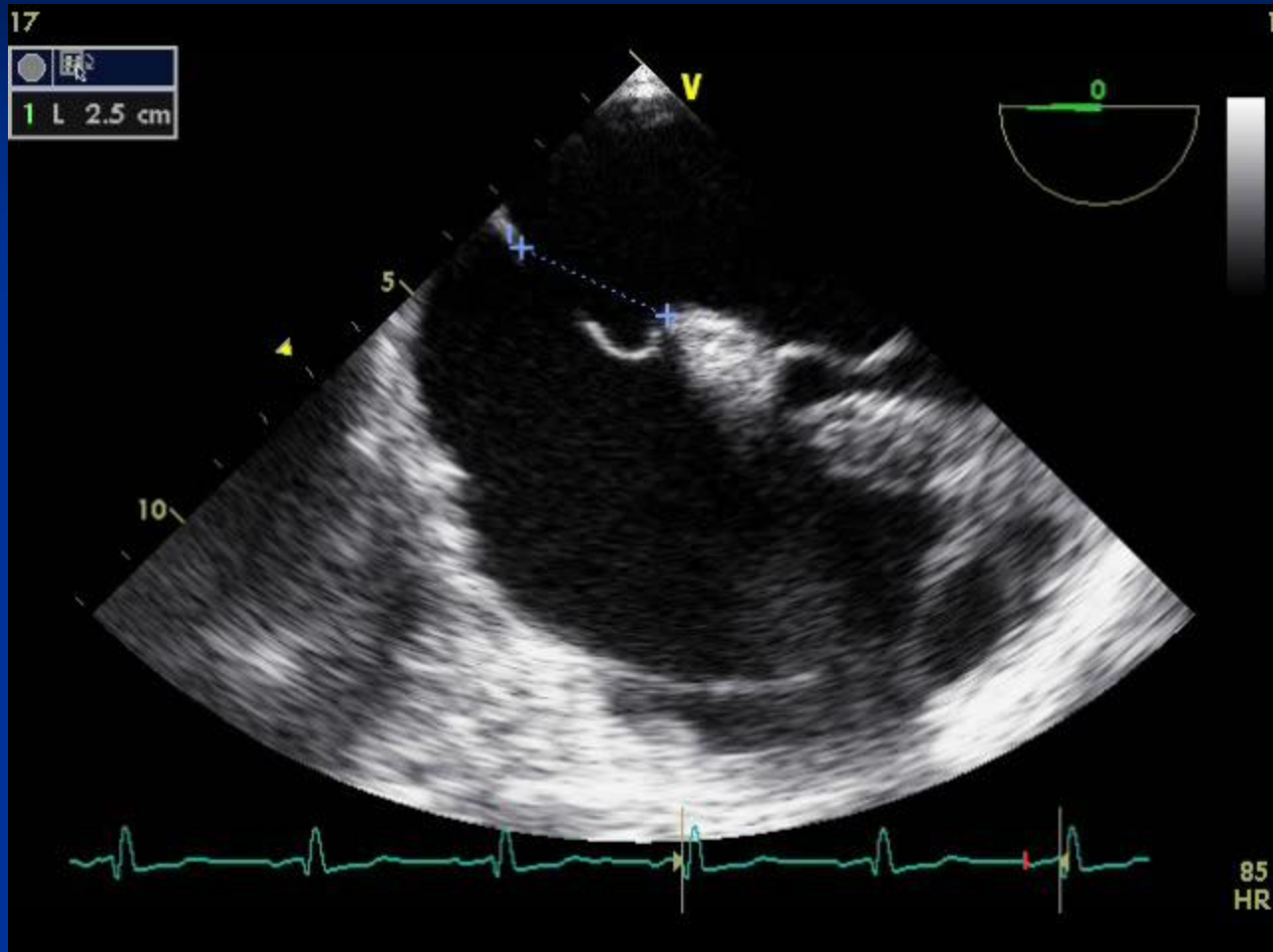






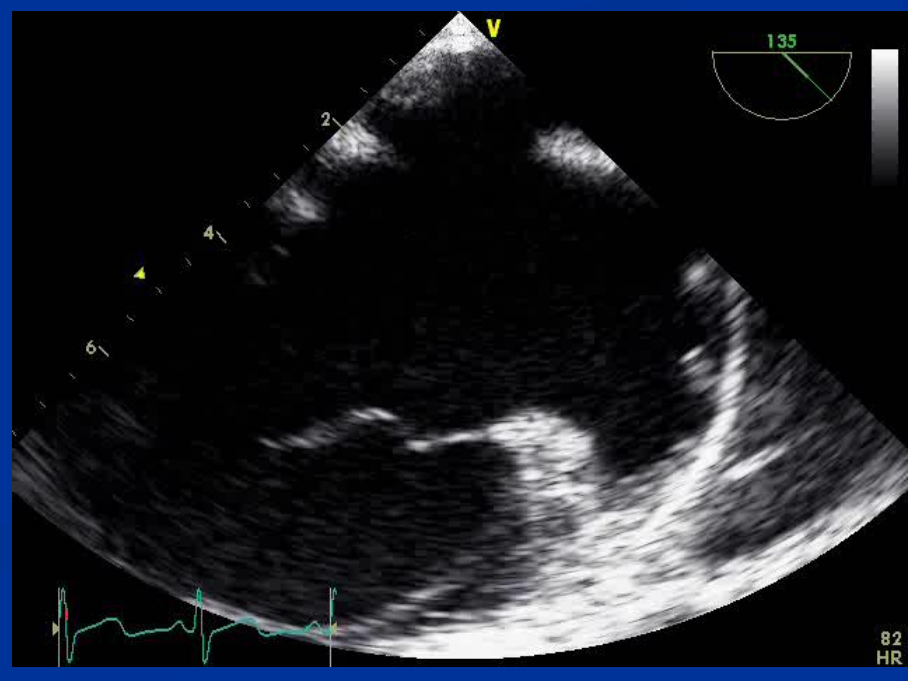
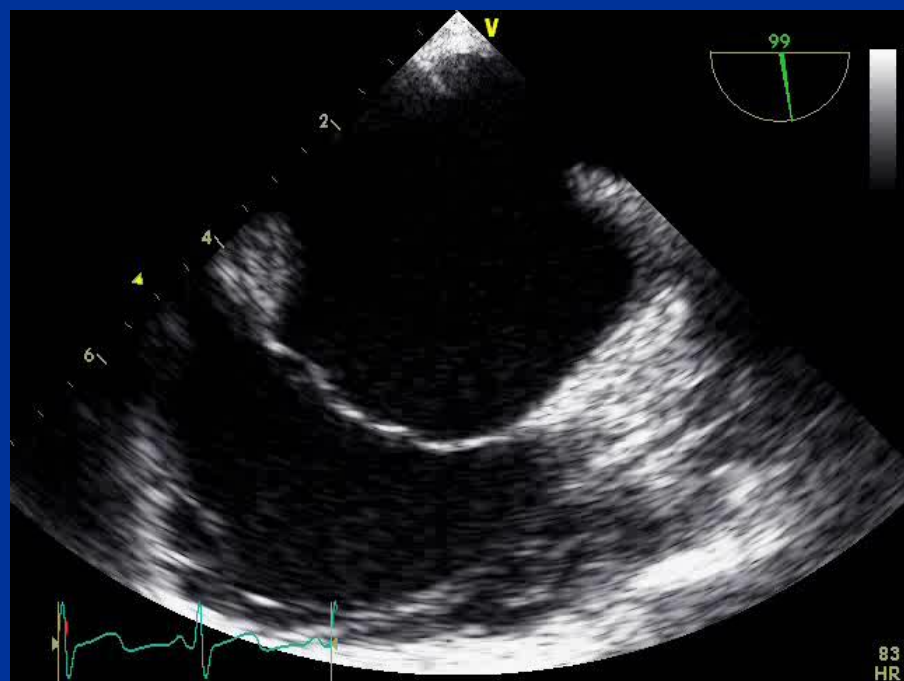
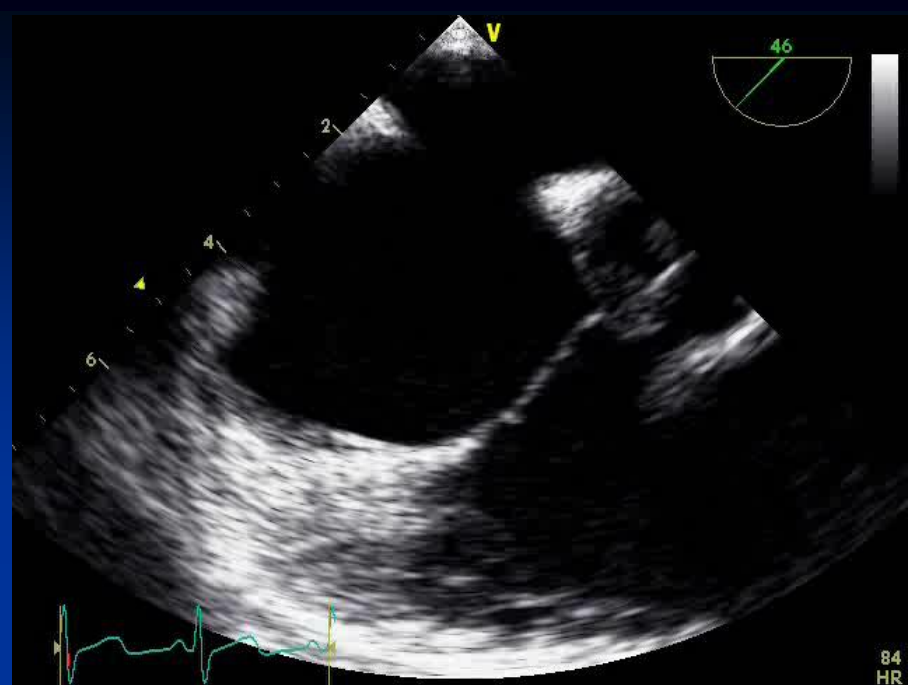
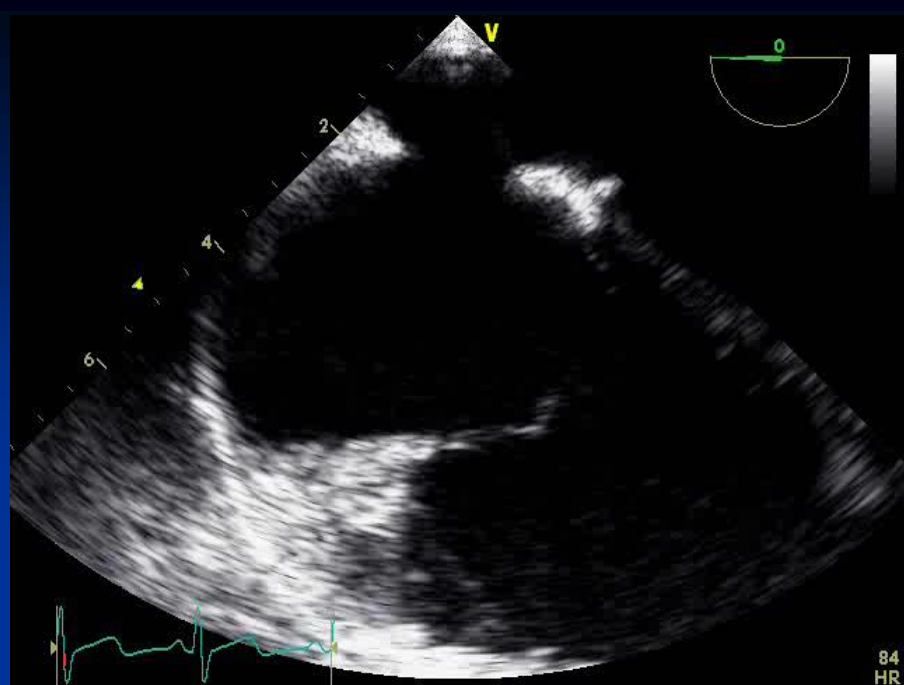
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● 
1 L 2.5 cm

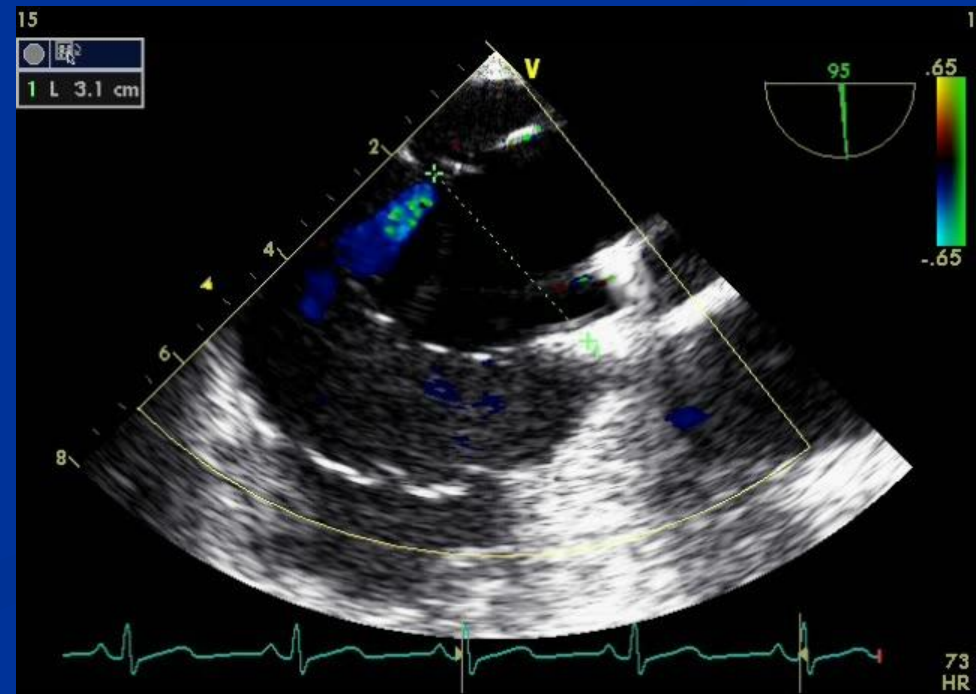


Case presentation (Case 2)

- A 26- year old woman presented with shortness of breath and easy fatiguability
- Married with 2 children
- History of palpitation off and on but no other symptoms in the past
- **CXR:** Cardiomegally
- **ECG:** SR, RAD and RSR in V1
- **Echo:** ASD with mild MR



BALLOON SIZING

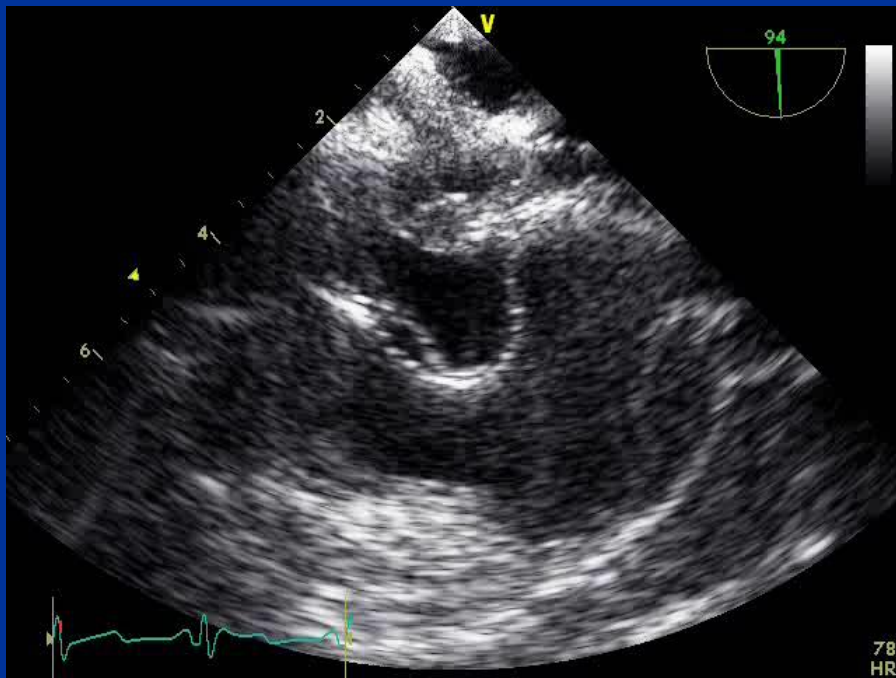
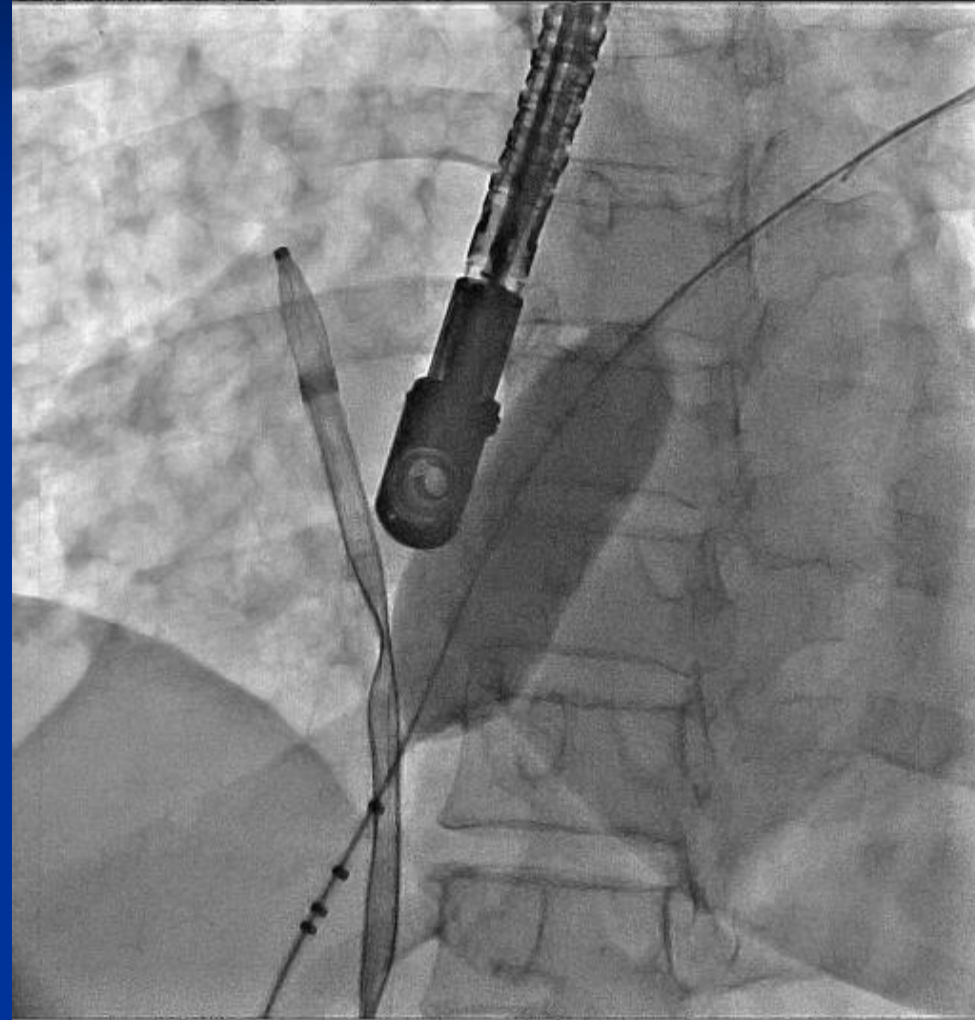
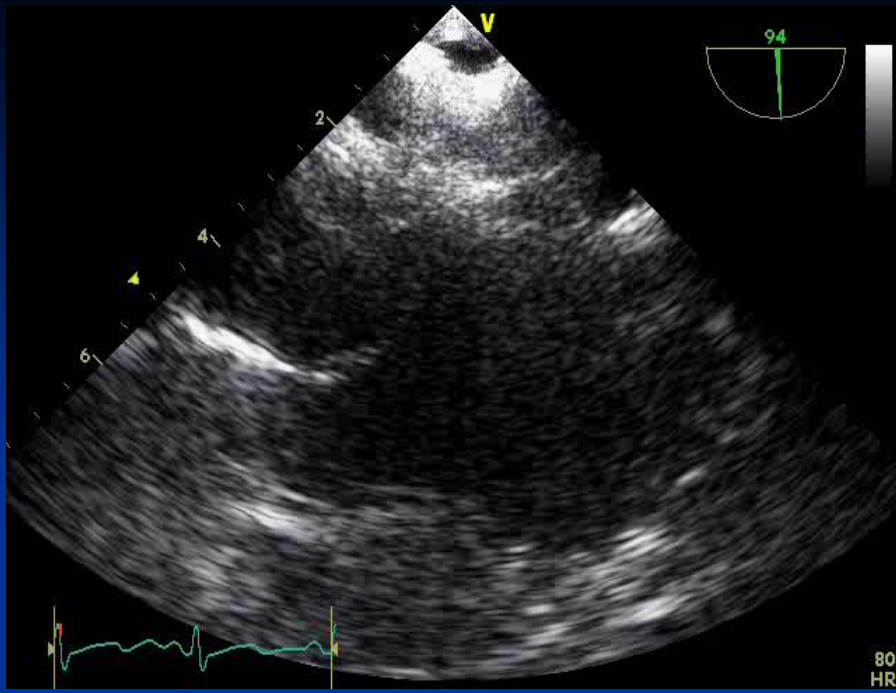


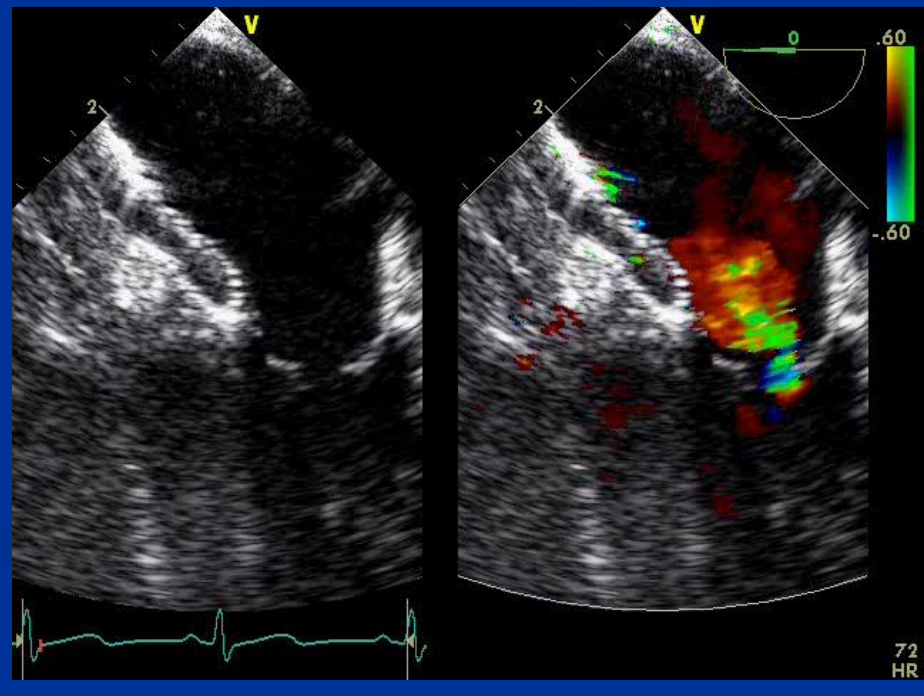
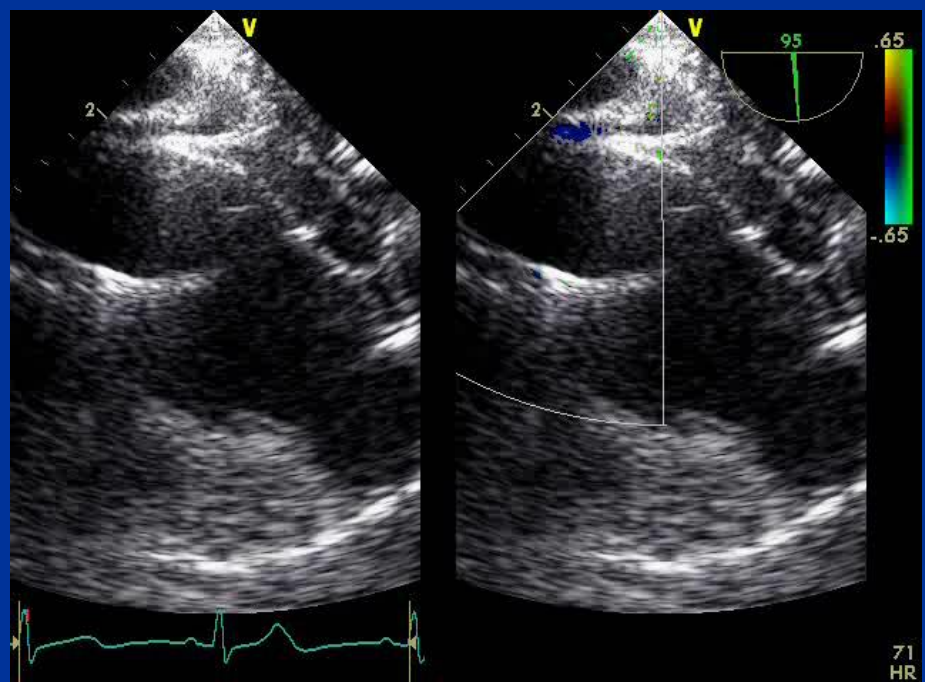
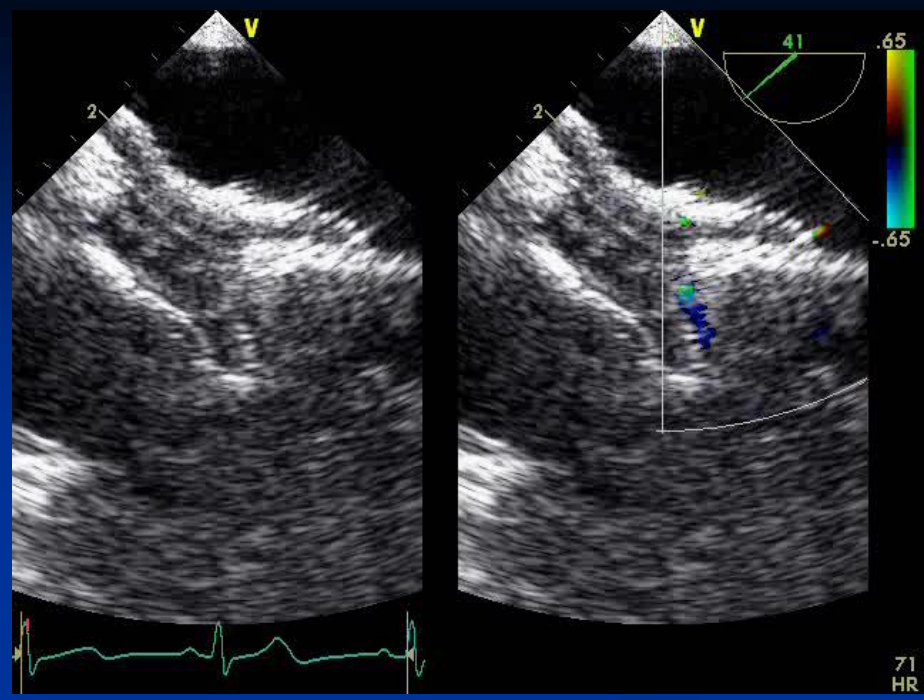
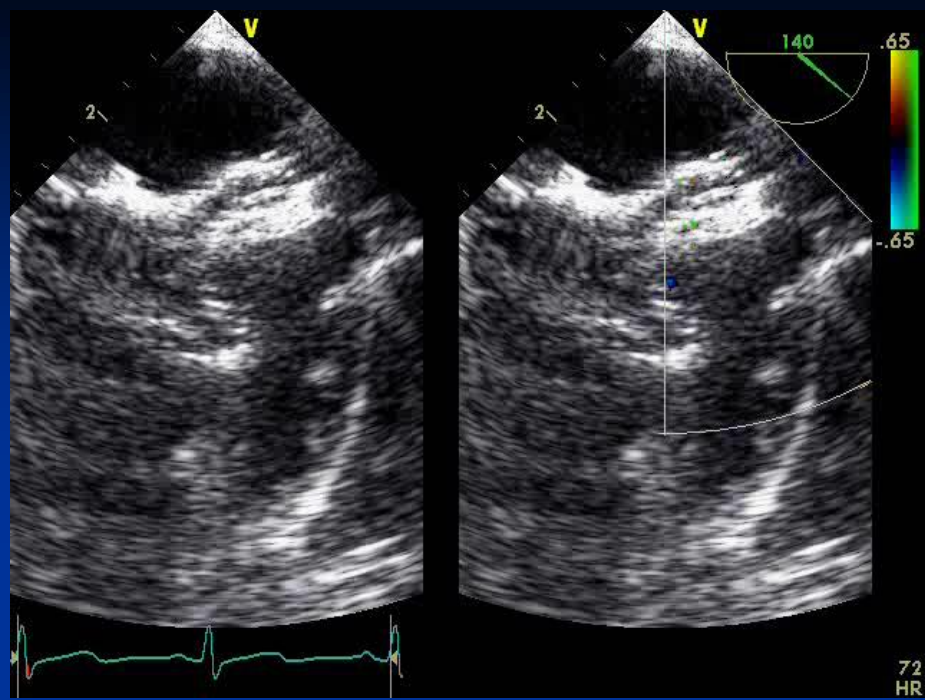
Balloon sizing is very useful to understand tissue characteristics and size in large defects with

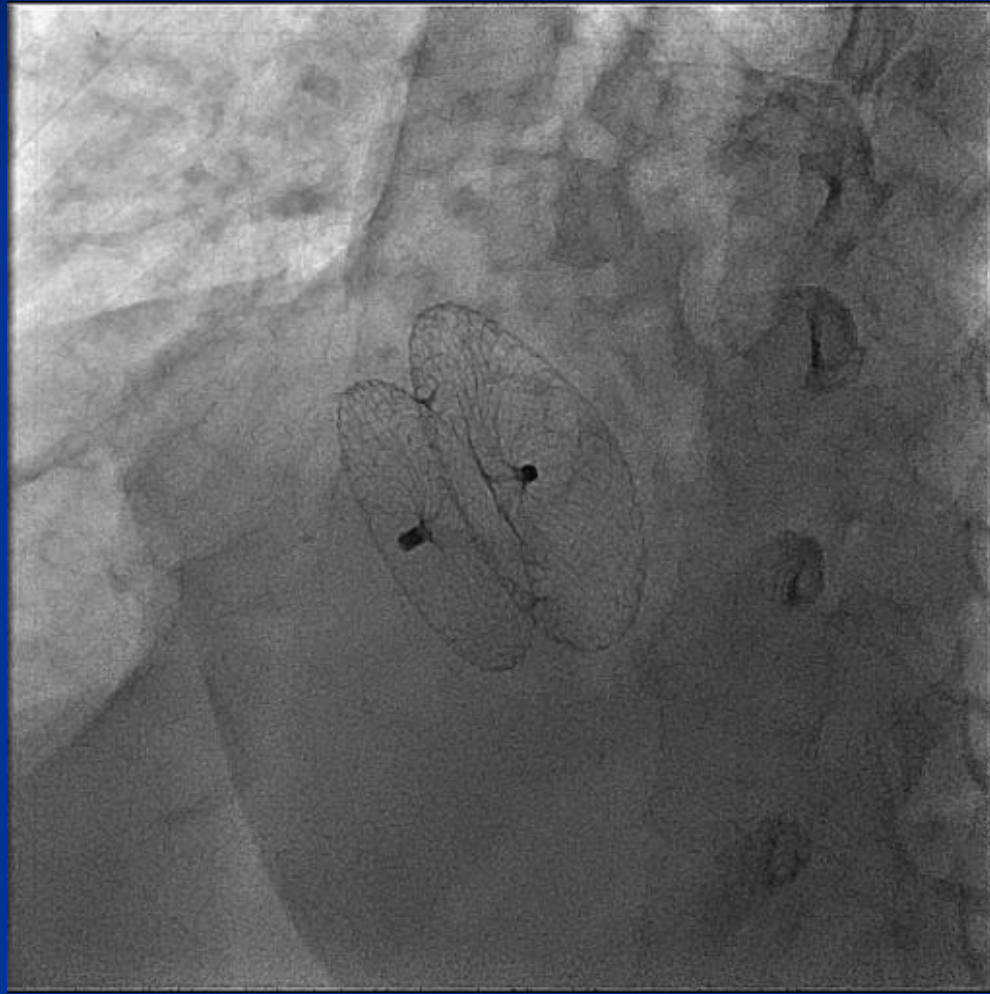
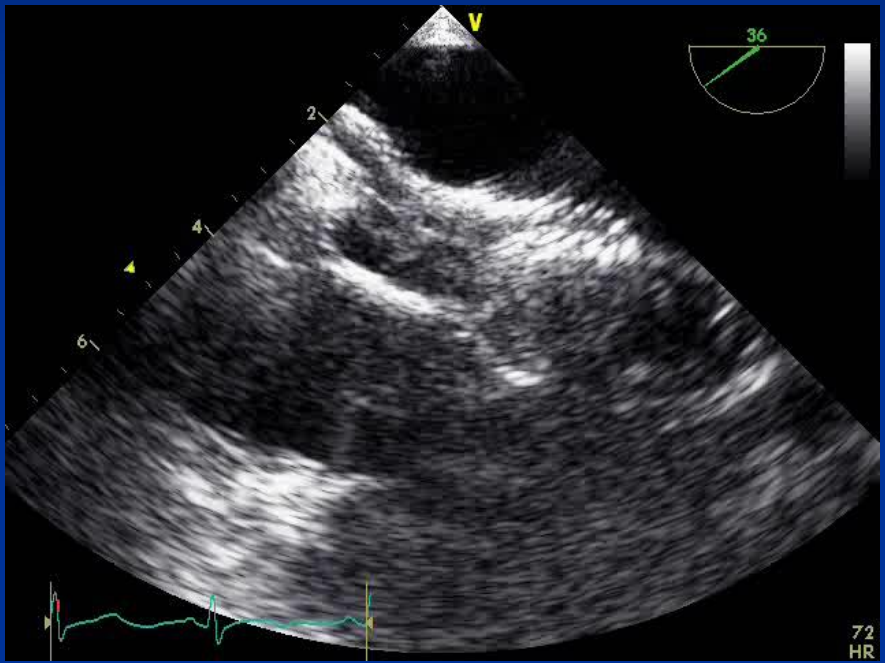
- Floppy margins and deficient rim
- Unusually placed

If there is a waist there is a way!

Balloon Assisted Technique







Conclusions

- Large ASDs can be closed but in addition to size- **rims and stability** of the septum define limits
- Use of an “adequate” size device that safely fits
- If IVC rim is completely absent or >2 rims are significantly deficient it may be better NOT to do it- I can do it but shall I do it?