

A Modified Technique of Annular Enlargement with Valve Repair in a Patient with TOF

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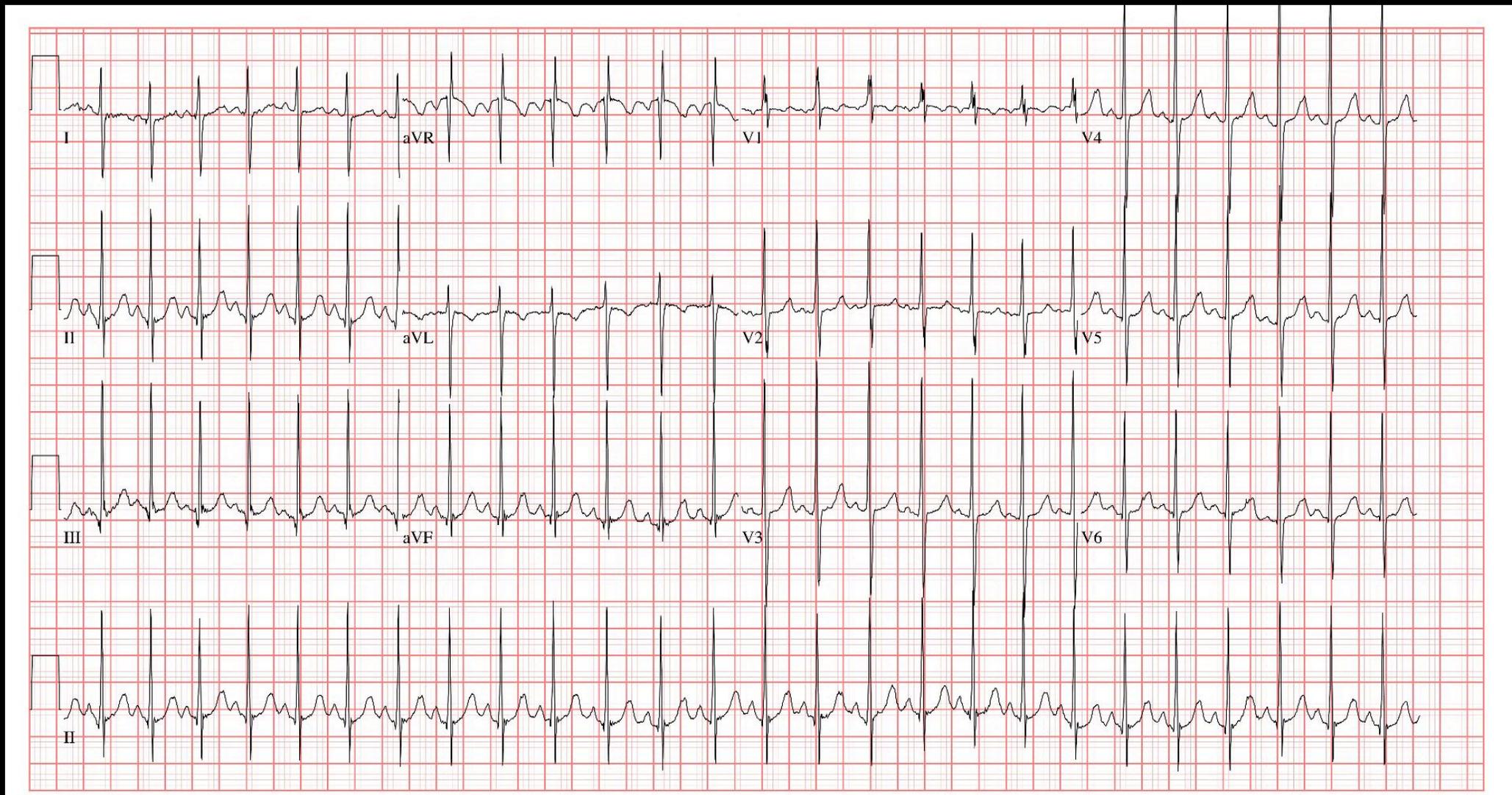
Brief history

- GA 38+3 weeks, 2.4kg, female
- Diagnosis: TOF
- Admission for total repair
 - 5 months old, 6.2kg
 - SpO₂: 91%

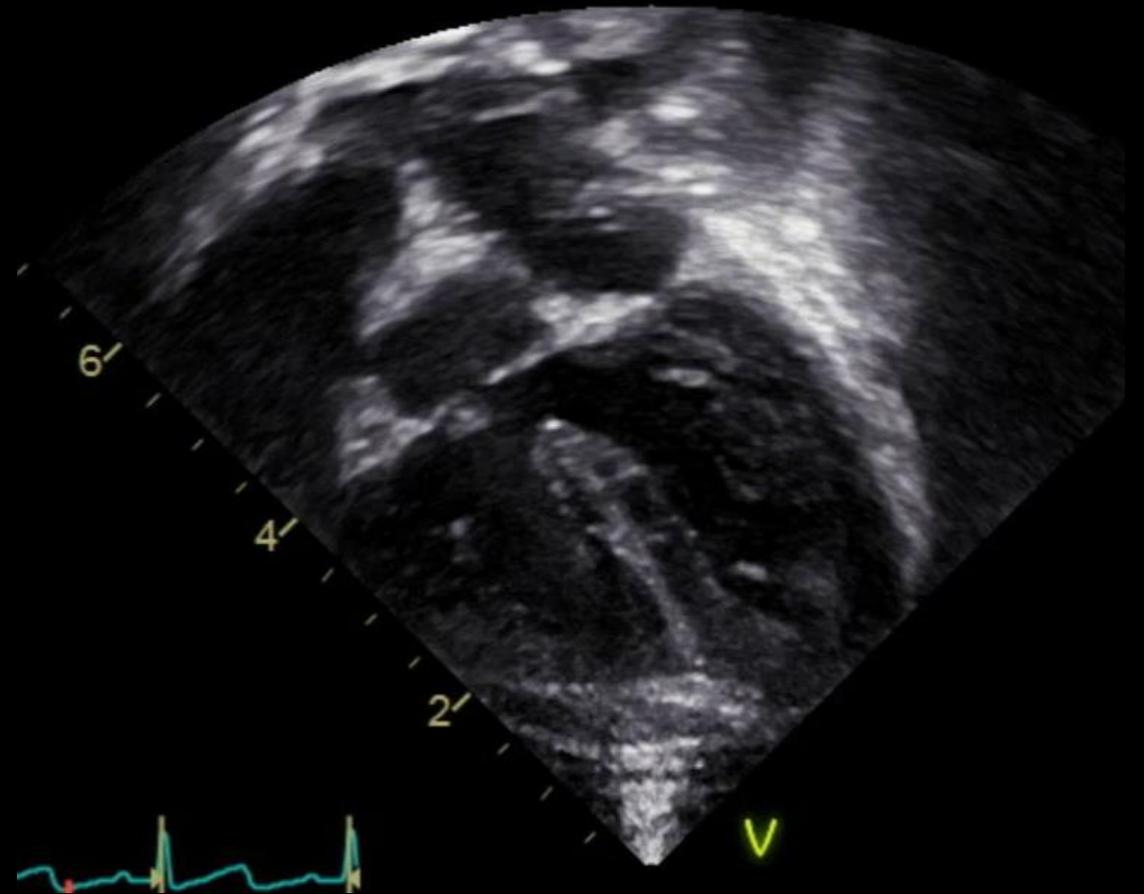
Preop. CXR



Preop. EKG

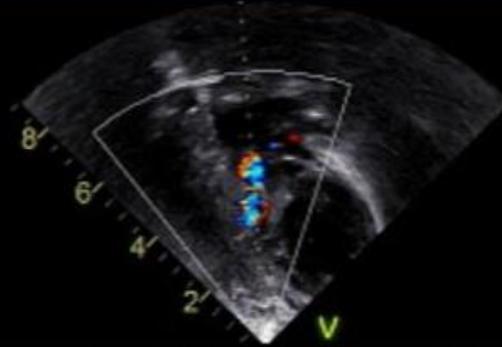


Preop. echo



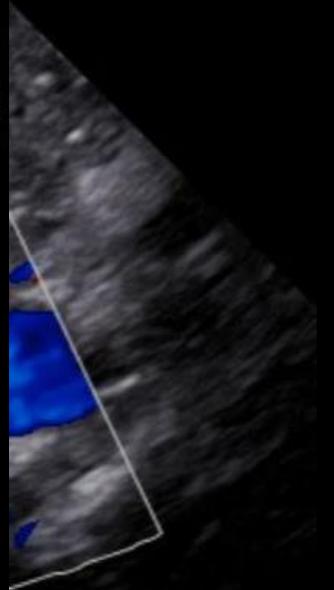
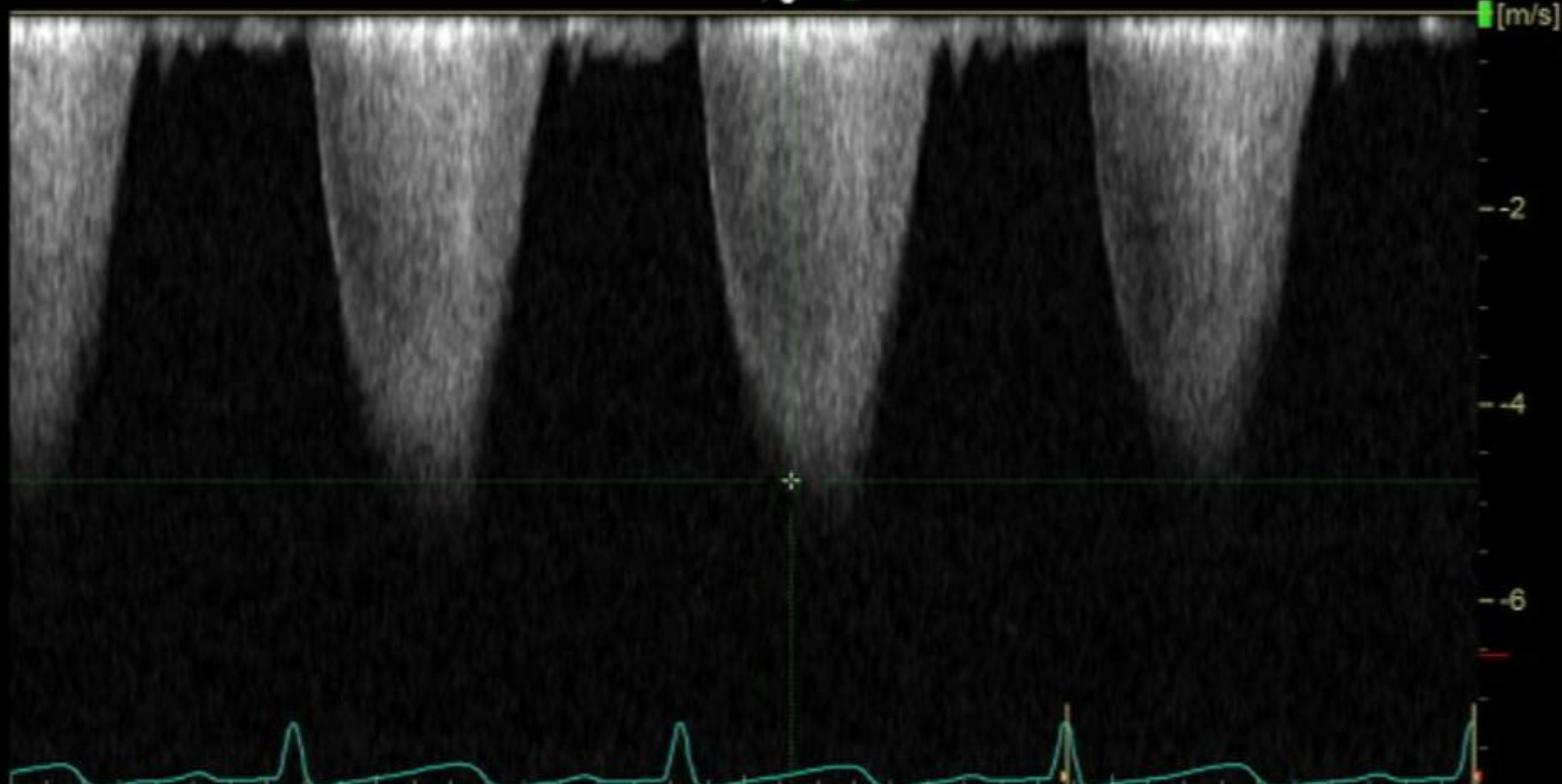
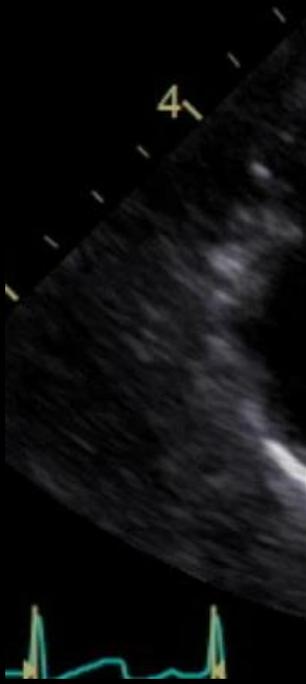
Preop. echo

o +
v 4.78 m/s
p 91.36 mmHg



RVOT peak $v=4.7\text{m/s}$

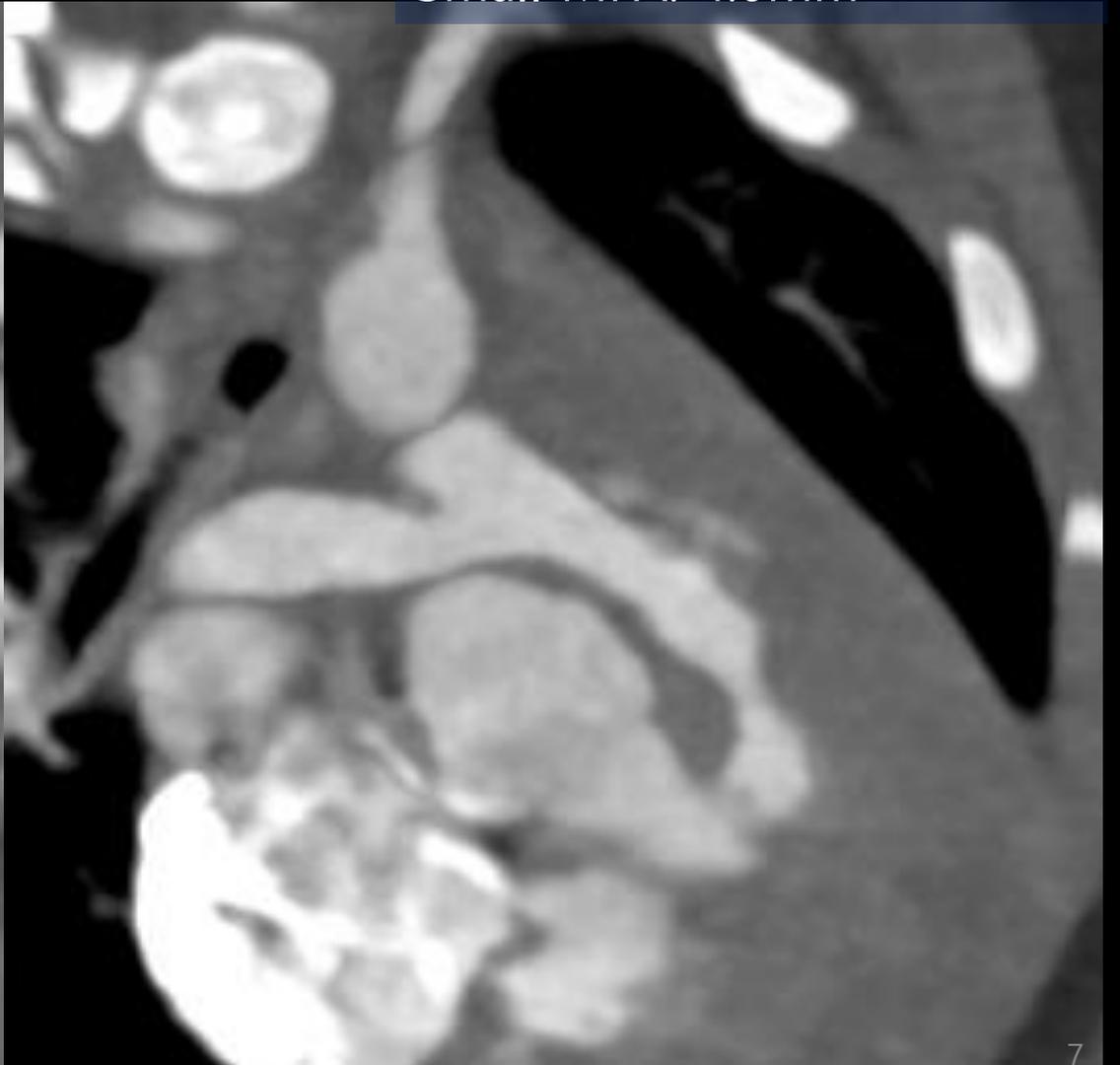
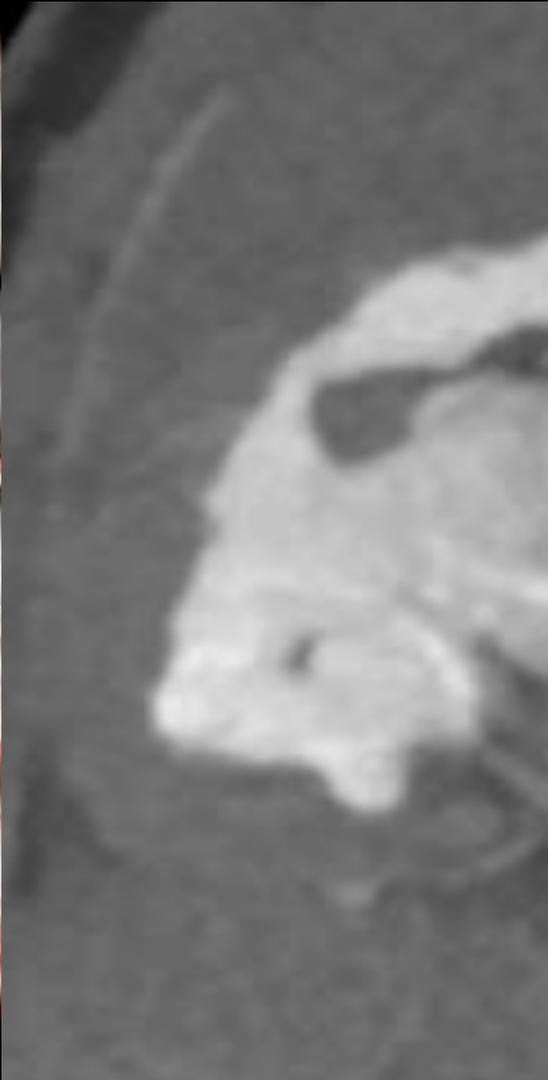
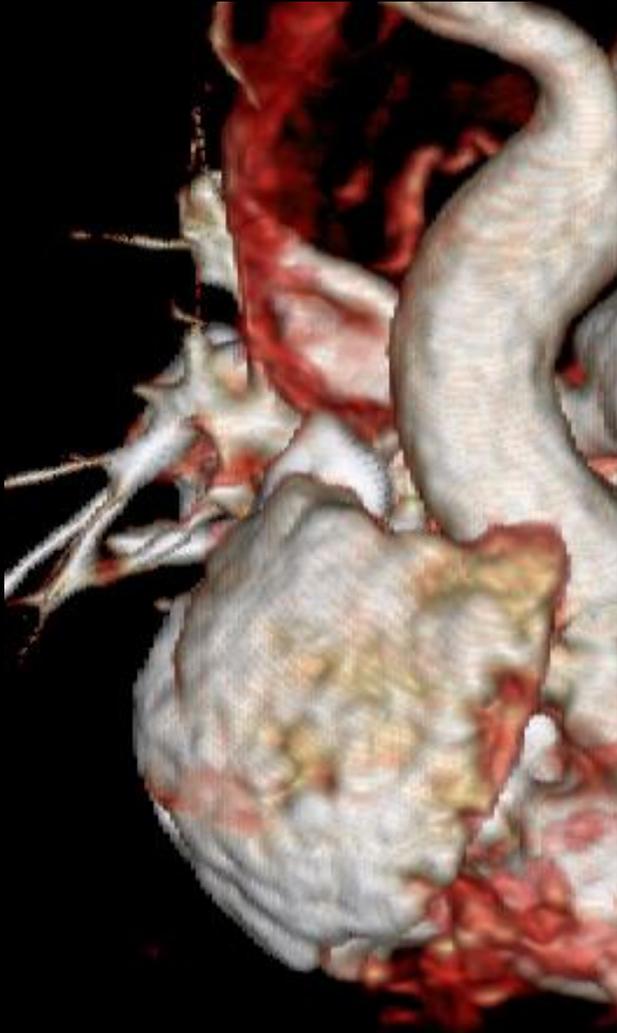
PV annulus: 6.1mm (z -2.85)



Preop. CT

PV annulus: 5.7mm

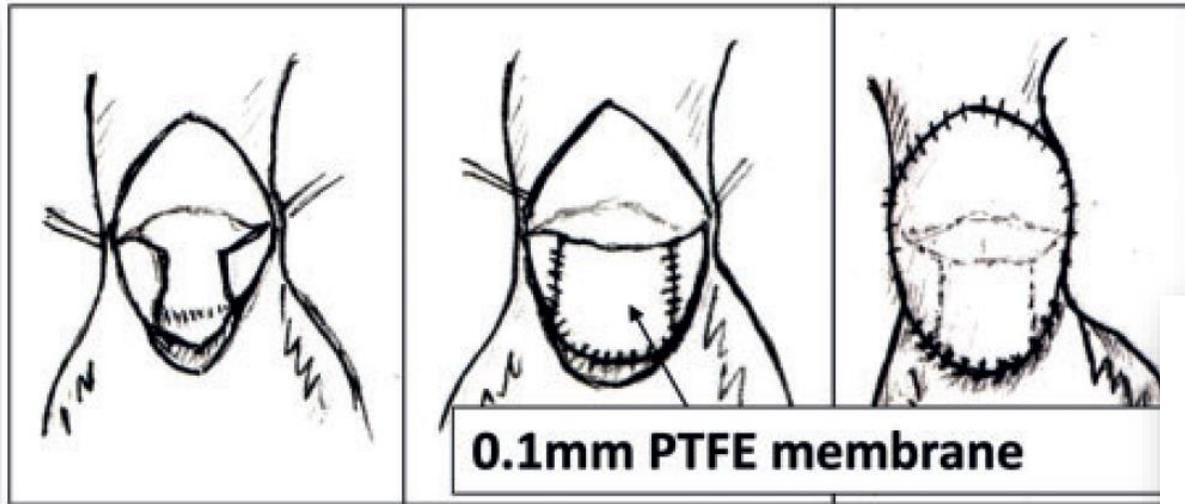
Small MPA: 4.0mm



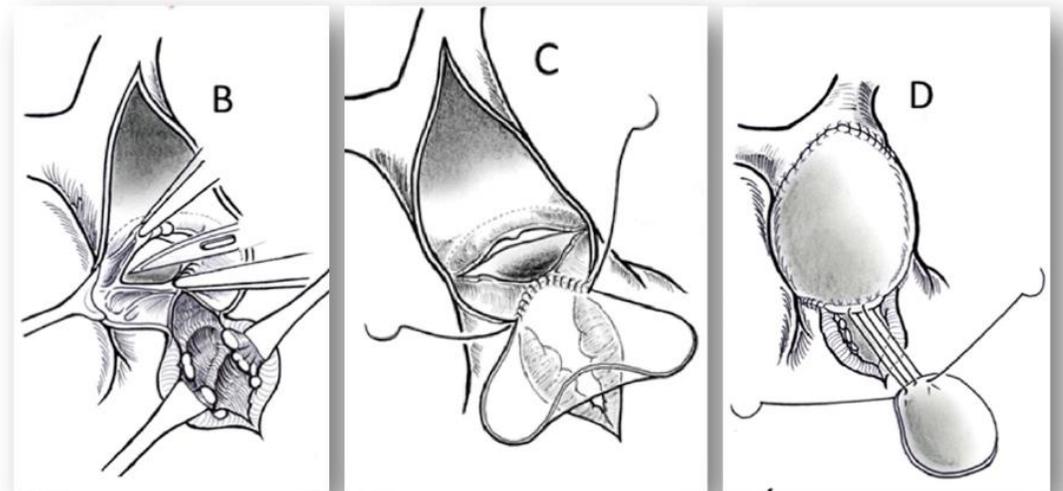
TOF with small PVA

- **Concept:** The optimal PVA diameter for annular preservation (AP) is smaller than expected.
- Options for annular enlargement
 - Trans-annular RVOT widening (m/c)
 - Systemic to pulmonary artery shunt prior to repair
 - **Annular enlargement with valve repair**

Annular enlargement with valve repair



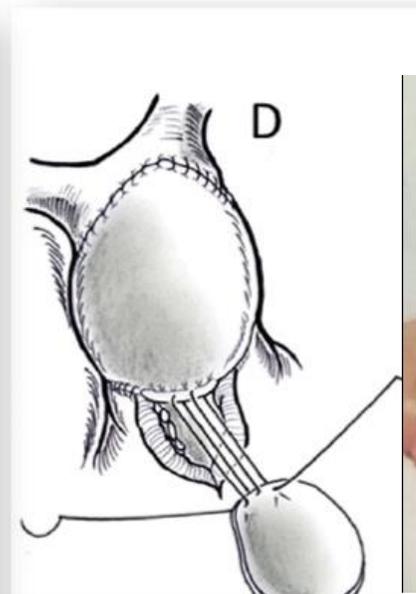
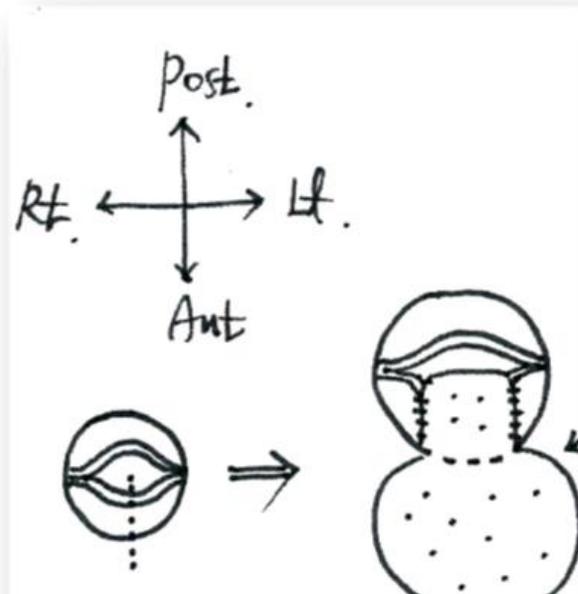
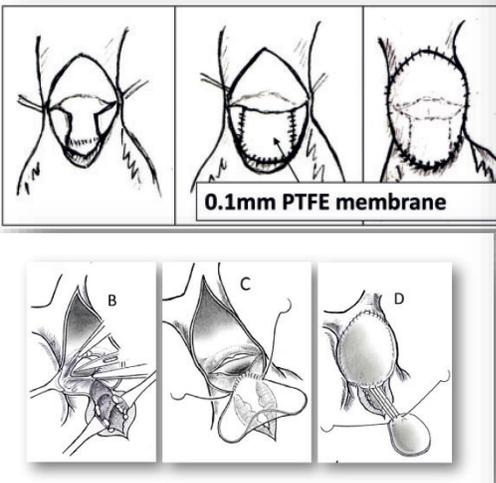
Eur J Cardiothorac Surg 2018;53:1223-9



Ann Thorac Surg 2014;98:1850-2

Annular enlargement with valve repair

Modified technique



<Patient selection criteria>

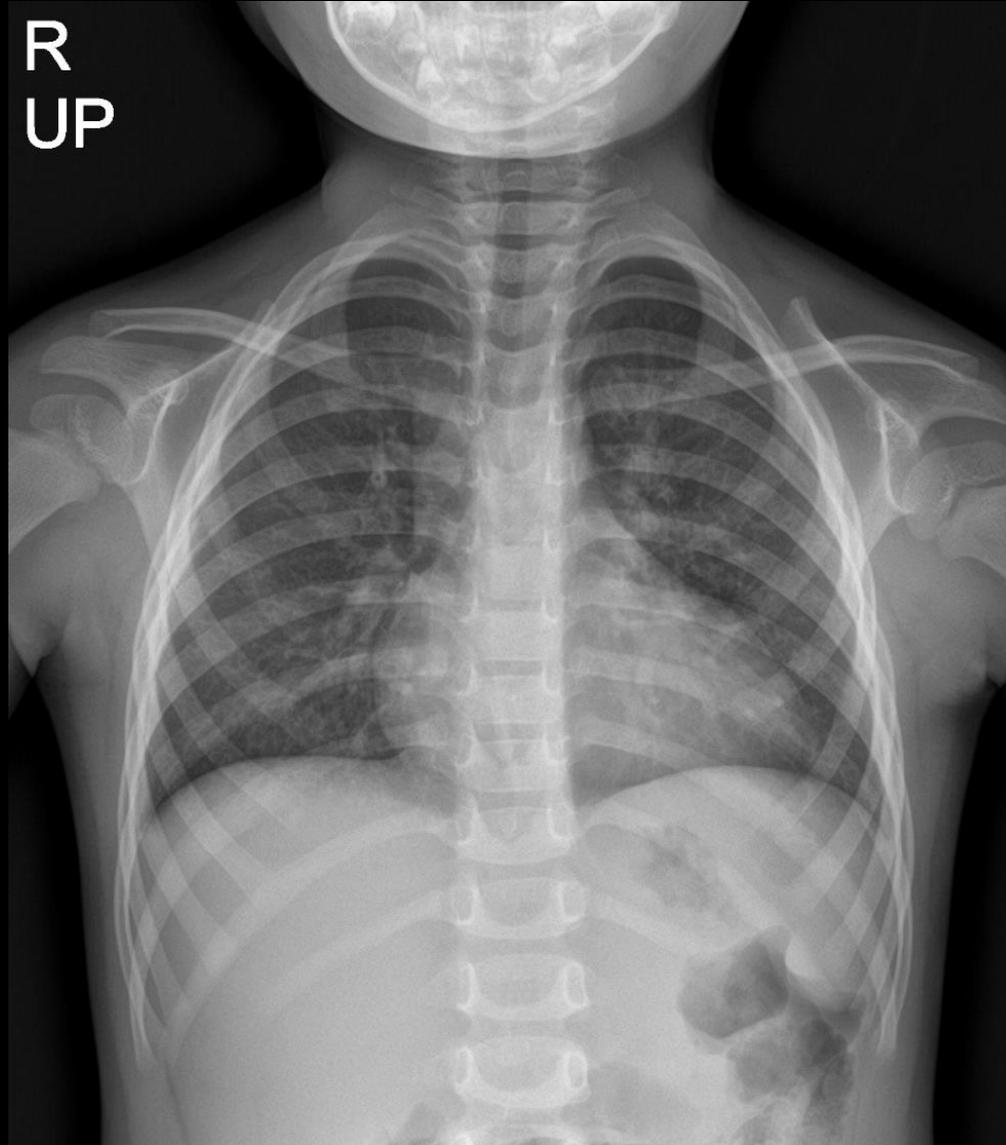
1. Transversely oriented commissures
2. Marginally small pulmonary valve annulus. (The patch should not cover too much)

TOF 5m/F 6.2 kg

Brief history

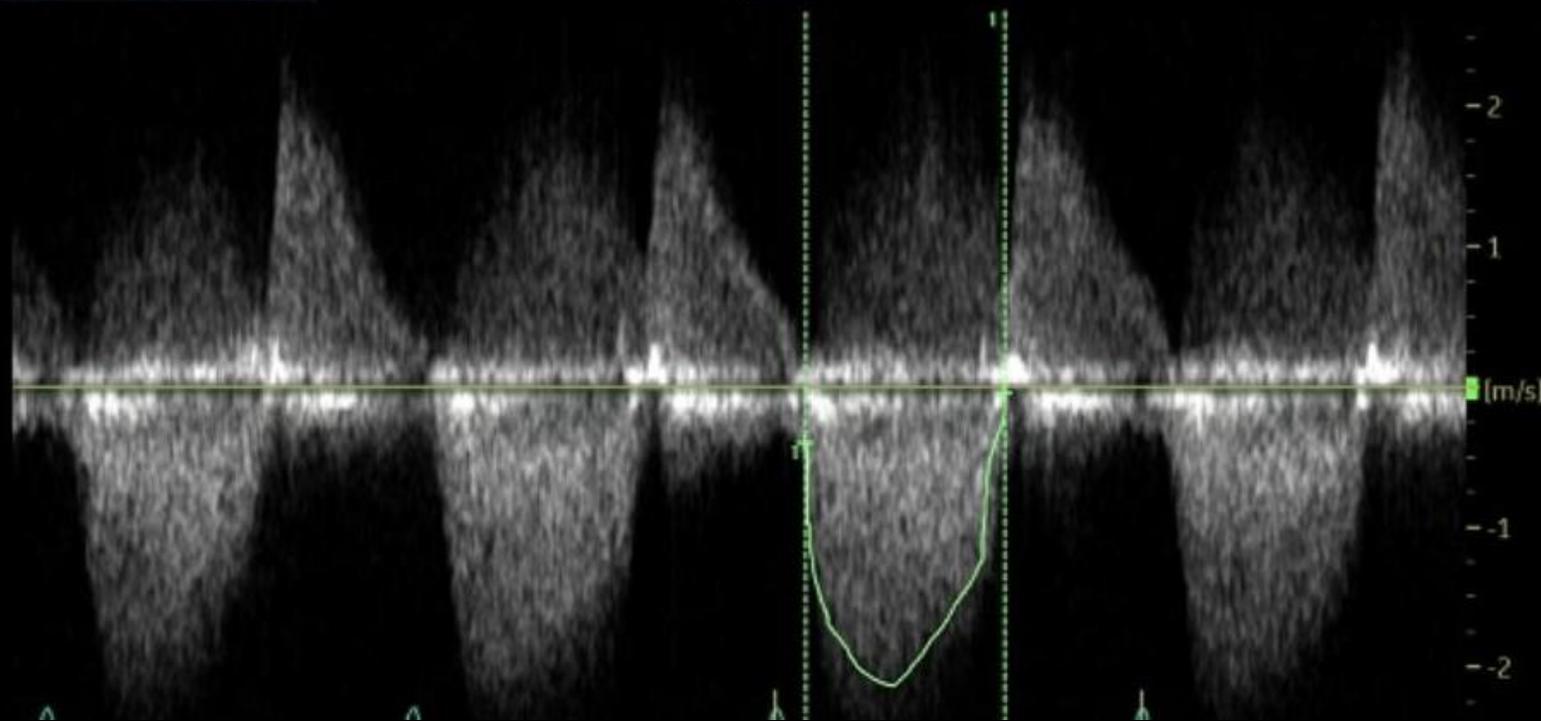
- Hospital course
 - POD #1 general ward transfer
 - POD #5 discharge

FU CXR (2y8m after op)

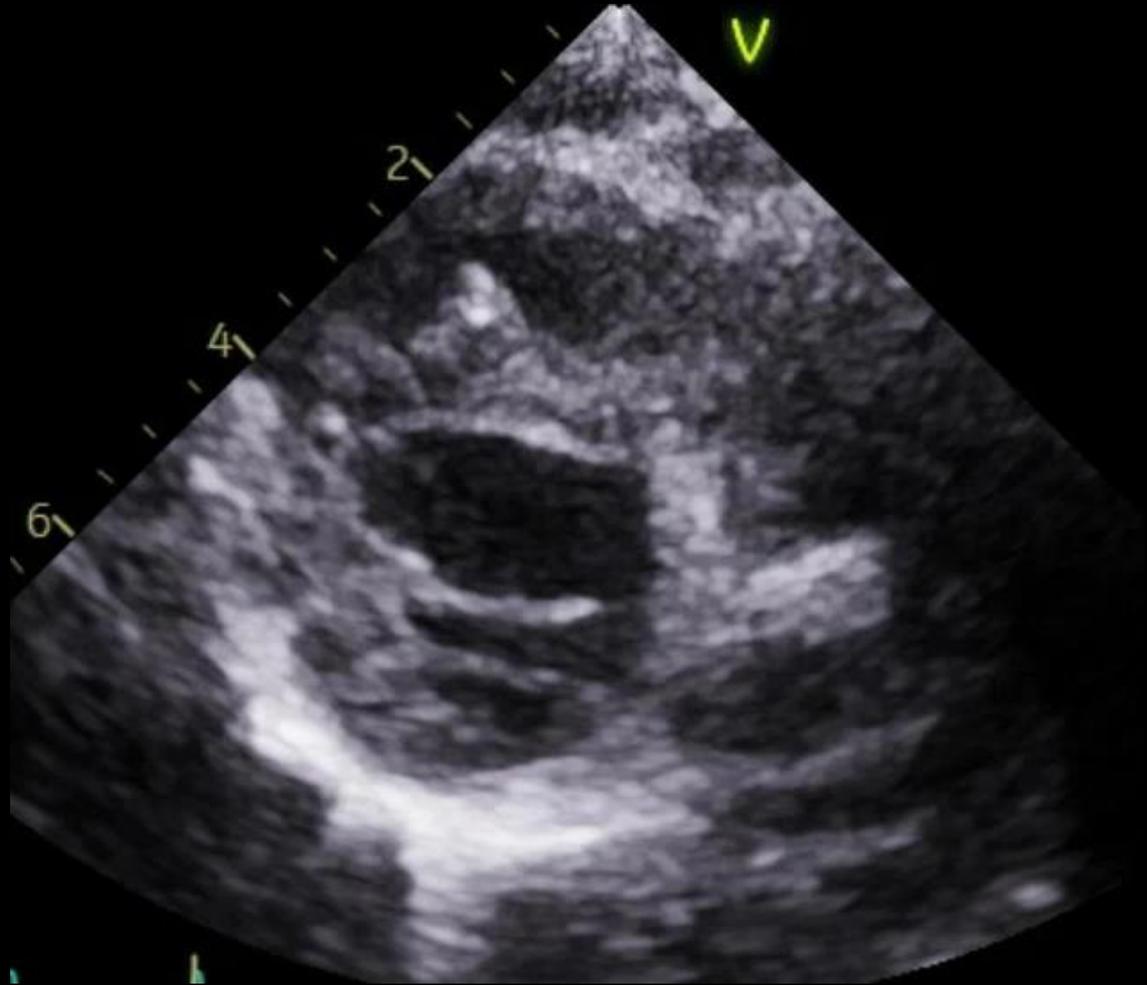


FU echo (2y8m after op)

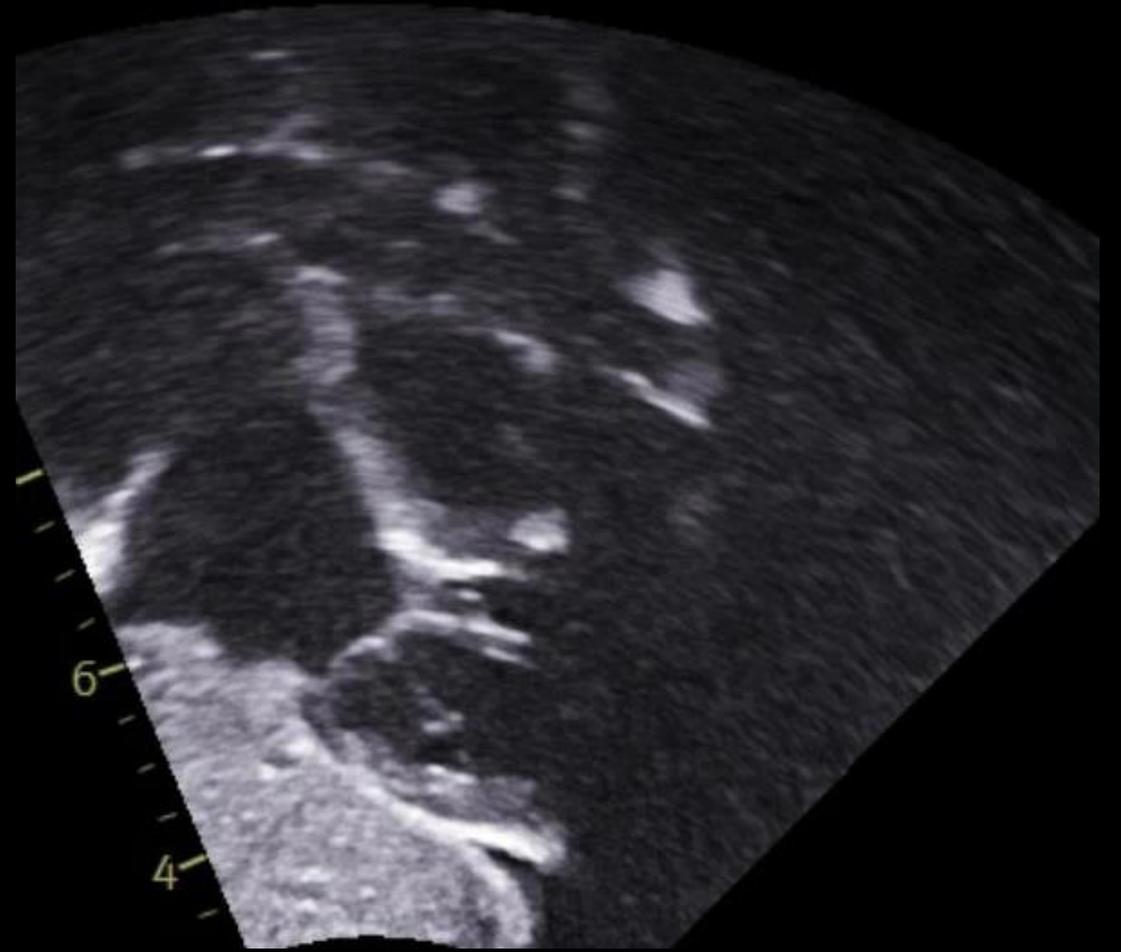
Vmax	2.13 m/s
Vmean	1.62 m/s
Pmax	18.14 mmHg
Pmean	11.51 mmHg
Env.Ti	274.02 ms
VTI	44.38 cm
HR	218.96 BPM



FU echo (2y8m after op)



<Parasternal short-axis view>



<Subcostal view>

Conclusion

- A modified technique of pulmonary annular enlargement with valve repair can be considered as a surgical option in highly selected patients with TOF.
- Long-term F/U is warranted to assess its durability.

Thank you for your attention!