Left Posterolateral Thoracotomy: an Alternative Approach for Pulmonary Valve Replacement

F. Roubertie

Department of Cardiovascular Surgery, Bordeaux Heart University Hospital, University of Bordeaux II, Bordeaux;
What we know

- PVR:
  - frequent operation
  - adult with a repaired TOF

- Perioperative mortality: low: <3%
  - Coronary lesion
  - Sternal reentry
What we know

Adult with repaired TOF
- Numerous previous operations
- Redo sternotomy: usual approach +++

Ascending aorta
- Dilation
- Adherent to the sternum
- “At risk”
- Technical surgical challenge
What we know

- Ascending aorta
  - Dilation

- Cystic medial necrosis

- Multi-centric study:
  - 7% to 30% with dilated ascending aorta
  - Mongeon et al Circulation 2013
Only a single case report: with PVR performed through a left lat. thoracotomy:

- **Safe**: to avoid injuring the aorta
- **Efficient**: to perform the same operation than through a usual median sternotomy
a 20-year-old woman

4 previous interventions:
- 2 modified Blalock shunts
- 2 median sternotomies

Severe symptomatic PI:
- Classified NYHA II

Right ventricular end-diastolic volume index of 155 mL/m²
Preop CT-SCAN
Preop CT-SCAN
CASE REPORT

SURGERY:
- Positioned in a right lateral decubitus position
- Left posterolateral thoracotomy (5th space)
- Normothermic CPB
- CPB: left femoral artery and vein
- Vacuum-assisted venous return.
RESULTS

SURGERY

- thick transannular patch: excised

PVR:
- Carpentier-Edwards pericardial bioprosthesis
- Enlargement of the Left PA
- equine patch
RESULTS

POSTOPERATIVE COURSE

- Uneventful
- 40 months of follow-up
  - NYHA status: I
  - Peak systolic prosthesis gradient of 17 mm Hg
  - No regurgitation
- CT scan (6 months postop.): no LPA stenosis
PVR : through left anterior thoracotomy

- Already described★
- With large native pulmonary-artery trunk
- Without prior left anterior thoracotomy
- Without LPA stenosis

DISCUSSION
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GUCH reoperations

5 commitments

1. medical imaging
2. medical records
3. associated lesion(s)?
4. beneficial/risk ratio
5. TEE (peroperative)

…..management changing constantly!
CONCLUSION

- Late outcome after PVR:
  - PVR improve symptomatology
  - Not efficient at reducing the incidence of arrhythmia or death

- Interest : alternative approach:
  - Dilated and adherent ascending aorta
  - Adherent enlarged right heart?
CONCLUSION

- GUCH: several previous sternotomies
- Postoperative morbidity and operative mortality:
  - related to the number of prior operative procedures ★.
- Interest: alternative approach:
  - In selected cases