AVSD requiring re-do surgery- “leave it“ or “correct it“

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Outcomes and reoperations after surgical repair of complete AVSD –
10 years single center experience
Risk factors for postoperative LAVVR

p = 0.03

p = 0.001
Case report

- 5 month old boy (5.26Kg, 57.5cm)
- cAVSD, ASD I 6x8mm, Inlet VSD 3x6mm, L→R Shunt
- Moderate regurgitation of common AVV
- Pulmonary hypertension
- Trisomy 21
Operation: Surgeons view

S. Daebritz., 2004
Operation: Two patch repair

S. Daebritz., 2004
Operation: Two patch repair

Superior bridging leaflet, opened

Inferior bridging leaflet, opened

S. Daebritz., 2004
Operation: Two patch repair
Operation: Two patch repair
Operation: Cleft closure

S. Daebritz., 2004
Postoperative course

- Postoperative course was uneventful
- 1 ½ year later:
  - Severe LAVV stenosis (mean gradient 14 mmHg)
  - MVA 0.7 cm²
  - Systemic pulmonary hypertension
  - Moderate LAVVR
- Coincidence of a newly diagnosed acute myeloid leukaemia
- Rehospitalization because of right heart failure
- 22.11.2013: Heart catheter examination with balloon valvuloplasty of the LAVV (mean gradient 6 mmHg)
Echocardiography 27.11.2013 (before first Re-do surgery)
Echocardiography 27.11.2013 (before first Re-do surgery)
Summary

- 2 ½ year old boy (9.5 Kg, 87cm) after complete correction of cAVSD
- State 1 week after heart catheter examination with balloon valvuloplasty of the LAVV (reduction of mean gradient from 14 to 6 mmHg)
- Good biventricular function (LVEF 50%, RVEF 64%)
- Light RV hypertrophy
- Severe LAVV stenosis (mean gradient 16mmHg), MVA 0.7cm², LAVV anulus 11.6mm
- Moderate LAVVR and dilatation of LA (19mm)
- ½ systemic pressure in RV
- Repeated readmission because of right ventricular de-compensation
- Risk of volume overload during planned chemotherapy

“Leave it“

“Correct it“
First Re-do

- Open bilateral commisurotomy
- Posterior papillary muscle fenestration
- LAVV repair (resection, perianular patch augmentation)
Second Re-do

- Operation was performed via a transseptal access to the mitral valve.
- Trans-annular enlargement of the LAVV annulus was performed.
- In order to prepare the Melody® valve for the implantation we shortened the valve from 3 cm to 2 cm by bending the progs outswards (Fig. 1, 2 and 3).

Fig. 1: The native Melody® valve
Fig. 2 + 3: Preparation of the Melody® valve before implantation
Second Re-do

• Annular fixation was achieved by using 10 single 5-0 prolene stiches (Fig 4. and 5).

• Further stabilisation was achieved by dillatation of the valve using 14 mm and 16 mm balloon.

• The complete anterior leaflet and the corresponding subvalvular apparatus was retained to sustain left ventricular geometry and function.

Fig. 4: Fixation of the valve

Fig. 5: Insertion of the Melody® valve in mitral position
Postoperative x-ray
Histopathological workup

Macroscopy of the explanted Melody® valve
Histopathological workup

Radioscopy of the explanted Melody® valve (Longitudinal and transversal sections)
Histopathological workup

Overview transversal section

Overview at the level of the pocket valve

Microscopy pocket valve/ Richardson blue staining
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Prof. Oliver Kretschmar
PD. Dr. Hitendu Dave
Dr. med. Michael Hofmann
PD. Dr. Martin Schweiger
Prof. Matthias Sigler
PD. Dr. Walter Knirsch
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