Hole - Leave it or correct it

Dr. Dominik Stambach, St. Gallen
What’s in the guidelines?

- As usual: Level of evidence C
- Not very clear recommendations
- Mainly for symptomatic patients
### ESC Guidelines 2010

<table>
<thead>
<tr>
<th>Symptomatic patients with baffle leaks not amenable for stenting should be treated surgically</th>
<th>I</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stenting (covered) or device closure should be performed in <em>symptomatic</em> patients with baffle leaks and substantial cyanosis at rest or during exercise</td>
<td>I</td>
<td>C</td>
</tr>
<tr>
<td>Stenting (covered) or device closure should be performed in patients with baffle leaks and symptoms due to L–R shunt</td>
<td>I</td>
<td>C</td>
</tr>
<tr>
<td>Stenting (covered) or device closure should be considered in <em>asymptomatic</em> patients with baffle leaks with substantial ventricular volume overload due to L–R shunt</td>
<td>IIa</td>
<td>C</td>
</tr>
</tbody>
</table>
CLASS IIa

1. Echocardiography contrast injection with agitated saline can be useful to evaluate baffle anatomy and shunting in patients with previously repaired d-TGA after atrial baffle. *(Level of Evidence: B)*

2. TEE can be effective for more detailed baffle evaluation for patients with d-TGA. *(Level of Evidence: B)*

CLASS IIa

2. For adults with d-TGA after atrial baffle procedure (Mustard or Senning), interventional catheterization can be beneficial to assist in the following:
   a. Occlusion of baffle leak. *(Level of Evidence: B)*

CLASS I

1. Surgeons with training and expertise in CHD should perform operations in patients with d-TGA and the following indications:
   b. Baffle leak with left-to-right shunt greater than 1.5:1, right-to-left shunt with arterial desaturation at rest or with exercise, symptoms, and progressive ventricular enlargement that is not amenable to device intervention. *(Level of Evidence: B)*
What’s in the literature?

• Mainly cases or small series with retrospective design
• Focus on feasibility
• Almost no outcome data
Transcatheter Occlusion of Baffle Leaks Following Atrial Switch Procedures for Transposition of the Great Vessels (d-TGV)

David T. Balzer, MD, FSCAI, Mark Johnson, MD, Angela M. Sharkey, MD, and Henry Kort, MD

• Retrospective case series
• 4 Patients
  • 3 L-R-Shunt
  • 1 R-L-Shunt
• No complications
• No longterm outcome data
• Authors conclusion:
  • *We report encouraging early results of catheter occlusion of baffle leaks in four patients. Long-term outcome remains uncertain and requires additional follow-up.*
Interventions in Leaks and Obstructions of the Interatrial Baffle Late After Mustard and Senning Correction for Transposition of the Great Arteries

Ingo Daehnert,* MD, Bert Hennig, MD, Michael Wiener, MD, and Claudius Rotzsch, MD

• Retrospective case series of leaks and stenosis
• 5 patients with leaks:
  • 1 R-L-Shunt
  • 4 L-R-Shunt (Qp/Qs between 1.1 and 1.8/1)
• No complications, no residual shunts
• Authors conclusion:
  • *Interatrial defects can be closed with occlusion devices designed for atrial septal defects despite atypical defect positions. Combined use of stents and occlusion devices in adjacent positions is feasible.*
Retrospective case series of 126 Atrial-switch
- 15 baffle leaks in 11 patients
  - 10 R-L-Shunts (4 with additional stenosis)
  - 1 L-R-Shunt
- 14/15 successfully closed
- 1 complication: device embolization at 6 month f/u
- Saturation improved significantly
- Exercise test only in 2 cases (improvement)

Authors conclusion:
- …, it can be difficult to identify clear indications in which the risks of the
  procedure can be balanced against the potential benefits.
- In conclusion, transcatheter closure of baffle leaks is a technically
  feasible although frequently complex and lengthy procedure.
Conclusion:

- After ASO there are often small, seldom large right–left, left–right or bidirectional shunts at atrial level. These baffle leaks can possibly cause supraventricular arrhythmias through volume overload. Right–left shunts can lead to thromboembolic complications during pregnancy and labor. This indicates that patients at risk need thorough thromboembolic prophylaxis peripartum and possibly closure of the leak before pregnancy.
- In this study there were 4 cases of newly discovered baffle leaks during pregnancy that had not been detected earlier. It is possible that the hemodynamic changes during pregnancy caused an increase in shunt size that made the leak detectable.

There was no clinical relevance in any of the cases.
Pro

- Ex. capacity ↑
- Paradox. embolism ↓
- Risk of PHT ↓ ?

Con

- Risk of intervention
- Worsening TR?
- Loss of access to PV-baffle (IART)