Alcohol Ablation or LVOT Surgery: When and What

O. Bertel, P. Vogt
HerzGefässZentrum Zürich
Klinik Im Park

2015
Abolition of OTO is the key of longterm management in different phenotypes of „HOCM“

Familial HOCM - sporadic HOCM - hypertension+OTO – Infiltrative CP

Outflow Tract Obstruction

Symptoms

Progression

Prognosis

„Outflow tract obstruction is most important for the development of heart failure“ (Maron NEJM2003;348:295)
Alcohol Septal Ablation (ASA) and Myectomy: no cure for a complex disease

- Effective reduction of OTO and symptoms in > 2/3 of pts
- Favourable effect on progression (LVH, LA dilatation)
- Excellent prognosis after intervention
- Remaining risc uncertain – dependent on underlying disease, remaining gradient, fibrosis, diastolic dysfunction: pre-interventional risk calculation unreliable
ASA or Myectomy: Impact on Symptoms

<table>
<thead>
<tr>
<th>Study</th>
<th>n</th>
<th>ASA</th>
<th>Myectomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alam/Meta-analysis*</td>
<td>351</td>
<td>NYHA 3&gt;NYHA1.5</td>
<td>NYHA 3&gt;NYHA1.3</td>
</tr>
<tr>
<td>Veselka/Multicenter**</td>
<td>459</td>
<td>NYHA 3&gt;NYHA1</td>
<td></td>
</tr>
<tr>
<td>Parry/Toronto***</td>
<td>211</td>
<td></td>
<td>84% NYHA 1/2</td>
</tr>
<tr>
<td>Sorajja/Mayo****</td>
<td>354</td>
<td>78% NYHA 1/2</td>
<td>73% NYHA 1/2</td>
</tr>
</tbody>
</table>

* Alam EHJ2009;30:1080  
** Veselka CathCardiovascInterv 2014;84:101  
*** Parry AnnThorSurg 2015;99:1213  
**** Sorajja Circulation2012;126:2374
ASA or Myectomy: Impact on Prognosis (Survival)

<table>
<thead>
<tr>
<th>Myectomy</th>
<th>1y</th>
<th>5y</th>
<th>10y</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Mayo</td>
<td>98%</td>
<td>96%</td>
<td>83%</td>
</tr>
<tr>
<td>**Toronto</td>
<td>98%</td>
<td>95%</td>
<td>83%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ASA</th>
<th>98%</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>***Alam/Metaan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>****Veselka</td>
<td>97%</td>
<td>92%</td>
<td>82%</td>
</tr>
<tr>
<td>*****NorthAmReg</td>
<td>97%</td>
<td>86%</td>
<td>74%</td>
</tr>
</tbody>
</table>

* Ommen JACC2005;46:470
** Woo Circulation 2005;46:470
*** Alam EHJ2009;30:1080
**** Veselka CathCardiovascInterv 2014;84:101
*****Nagueh JACC2011;58:2322
When to Consider ASA or Myectomy

Patient Selection

- Symptoms despite well tolerated „optimal“ medical treatment

and

- Outflow tract gradient $>30$ mm Hg at rest
  or $>50$ mm Hg with stress
  (including pts. without resting gradients!)*

M, 69y, NYHA III
NYHA I after ASA

*Gietzen Circulation 2002; 106:454
Anatomical/Functional Requirements for ASA

- No cardiac surgery for other reasons warranted
- Phenotype of hypertrophy and OTO: Target is the basal septum only
- Anatomy of septal branches: target tissue accessible (Echo!), dangerous collaterals?
- No mitral valve pathology precluding optimal results
Different Targets for Interventions in OTO

ASA

Myectomy
Unspecific Phenotypes in Patients with OTO of Different Origin

Sporadic, uo

Sporadic, HOCM, apical bulge
Optimising Treatment Success
Minimising Adverse Effects with ASA

- Patient selection: **Type A**: optimal result expected – ablation recommended; **Type B** anatomy acceptable, but optimal result uncertain – ablation may be considered; **Typ C** ablation not indicated

- Intervention with Echo guidance

- Alcohol: moderate and slow (1ml/3min; 1-3ml)

- Prov. PM for 48h; monitoring for 72h (late AV-Block may occur)
Adverse Events after ASA

- Mortality 0.5-1.6% (LAD dissection, infarction via collaterals, septal rupture, tamponade etc)

Self resolving LAD spasm
DD dissection, alcohol leakage with LAD occlusion
High Grade AV Block after ASA

- Def. PM: 10% (-30% in early experience)*

High risc: LBB preASA, >1 s-branches occluded, high amount of alcohol, bolus injection

Myectomy better

Agarwal JACC2010;55:823
The Procedure Appears Simple....
....but needs experience

- Patient selection – Heart Team Approach
- Septal branch selection – Echo-targeting
- Alcohol injection – amount, rate,
- Coping with unusual anatomy, and complications
Conclusions

- ASA is an alternative to myectomy in appropriate patients with
- Similar effects on symptoms and survival
- Similar rate of reinterventions
- Higher need for PM
- High preference by patients