Atypical Ductal Hyperplasia (ADH)

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Pathologic Description of ADH

- Filling and distension of the involved ducts by monotonous epithelial cells forming architecturally complex patterns, including cribriform-like secondary lumens or micropapillary formations in only one space (Page 1985).

- Involvement of two or more ducts, if they measure less than 2 mm in aggregate diameter (Tavassoli 1990).

Cytologic features of non-necrotic DCIS in a limited size.
## Frequency of ADH

### Literature:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAB stereo</td>
<td>2-15 %</td>
</tr>
<tr>
<td>VAB MRI (9G)</td>
<td>4.6-6%</td>
</tr>
<tr>
<td>VAB US (8 G;11 G)</td>
<td>2.9-10%</td>
</tr>
</tbody>
</table>

### Swiss MIBB Database

(22072 VABs, 2008 – 2015)

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<tr>
<td>VAB stereo</td>
<td>5% (830/16143)</td>
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<tr>
<td>VAB MRI (9G)</td>
<td>4% (74/1878)</td>
</tr>
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<td>VAB US (8 G;11 G)</td>
<td>2% (99/5293)</td>
</tr>
</tbody>
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### Zurich Breast Center Database

- **Core Cut US (14 G):** 0.4-3.1%
- 0.44%
Treatment Recommendations (Swiss MIBB Database in Case of ADH in VAB)

- surgical excision  71%
- surveillance  23%
- repeat VAB  1%
- other  5%
Histology of Surgical Excision (all VABs with Pure ADH, Swiss MIBB Database)

- invasive cancer 5% (22/439)
- DCIS 23% (100/439)
- no upgrade 72% (317/439)

over-all underestimation rate 28%

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Underestimation Rate in the Literature

VAB stereotactic: 9 - 58%


without residual calcifications: 2-17%

Underestimation Rate in the Literature

Core US-guided 14G: 22-65%

VAB US-guided: 0-22%
22% Jang 2008, 13% Grady 2005, 0% Grady 2005 (8G complete removal of lesion)

MRI VAB 9G: 32%-38%
Lourenco 2013, Liberman 2007
lesion size

<6 (7) mm with complete removal of MK, < 6mm with residual MK or 6 – 21(15) mm but ≤2 ADH foci: low risk

>21(15) mm: high risk

needle type

14 G core cut: high risk

number of ADH foci

>2 high risk

no difference or contradictory results for:
- number of cores
- residual microcalcifications
- age
- mass
- personal history of breast cancer
Frequency of Higher Grade Lesions During Follow-up

stereotactic 11G VAB:

3% 2% DCIS, 1% IDC,                  \(\text{Forgeard 2008}\)
(0.5-6 y follow-up, mean 30 months)

8% 33% DCIS, 67% IDC,                \(\text{Ancona 2011}\)
(0.5-8 y follow-up, mean 45 months)

open biopsy:

10-12% IDC in both breasts,          \(\text{Page 1985, Tavassoli 1990}\)
(follow-up 16 y)

30% after 25 years,                  \(\text{Hartmann 2014, Page 2005}\)

4-5 times higher breast cancer risk compared to the general Population
Conclusions

- ADH increases the risk of breast cancer (ipsi- or contralateral) 4-fold or 30% in 25y
- consider in regard to the screening intensity
- underestimation: IDC 5%, DCIS 23%
- 17% underestimation if calcifications are completely removed by VAB
- trend for less underestimation in lesions <6 mm, <2 ADH foci, lesion completely removed by VAB
- open surgery cannot be safely omitted in ADH

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