Lobular neoplasia (LN), classical type

Consensus finding

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# Lobular Neoplasia (LN, classical type)

## Definition

A spectrum and continuum of atypical epithelial proliferations in the TDLU-s of the breast

Proliferation of non-cohesive cells with/without pagetoid involvement of terminal ducts

### Terms used in LN:

- ALH (atypical lobular neoplasia)
- LCIS (lobular carcinoma in situ)
- LN classical type
- LN pleomorphic type
- LN with necrosis
- LIN 1-3

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**WHO Classification of Tumors of the Breast** (2012)

**DABBS Breast Pathology** (2012)
### Classification LN

<table>
<thead>
<tr>
<th>Classical LN (LN 1, LN2)</th>
<th>Pleomorphic LN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALH</td>
<td>LN 3</td>
</tr>
<tr>
<td>Classical LCIS</td>
<td>LN with necrosis</td>
</tr>
</tbody>
</table>

- **B3**
- **B5a**

WHO (2012); Hanby et al., Histopath, (2008); Dabbs (2012), S3 Richtlinien (2012)
IBUS SEMINAR 2016

Classification LN

- **B3**
  - Classical LN (LIN 1, LIN2)
    - ALH
    - Classical LCIS

- **B5a**
  - Pleomorphic LN
    - LIN 3
    - LN with necrosis

Reproducibility ALH vs LCIS: poor

Prognostic significance LIN 1,2,3

Lack of systematic validation
Not endorsed by guidelines

Recommended nomenclature on core/vacuum biopsies:
LN (B3) or LN (B5a)

WHO (2012); Hanby et al., Histopath, (2008)
**Additional immunostains, diagnostic security**

“It must be emphasized that E-cadherin membranous positivity does not preclude the diagnosis of a lobular lesion.”

<table>
<thead>
<tr>
<th>Marker</th>
<th>LN (all types)</th>
<th>DCIS (solide type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Cadherin</td>
<td>Loss</td>
<td>Positive</td>
</tr>
<tr>
<td>P120 Catenin</td>
<td>Positive (cytoplasmic)</td>
<td>Positive (membranous)</td>
</tr>
</tbody>
</table>

**Lobular neoplasia, classical type**

**epidemiology**

Incidence: 0.5 – 4% of otherwise benign biopsies all age, predominantly premenopausal age (mean 49 years) (pleomorphic LN mean 59 years) increasing detection rate since 1978

**clinical presentation**

No specific clinical features, no palpable mass mostly incidental findings <50% of LN with associated calcification >90% detected due to calcification in other anatomical structures

WHO Classification of Tumors of the Breast (2012)
DABBS Breast Pathology (2012)
**Lobular neoplasia, classical type, prognosis**

### Controversial literature data after core/vacuum biopsy

<table>
<thead>
<tr>
<th>Extension of LN focal vs. extensive, ALH vs. LCIS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RR <strong>4-5x vs. 9x higher</strong> (after 15 years)</td>
<td><img src="image.png" alt="Image" /> Haagensen (Cancer 1979)</td>
</tr>
<tr>
<td>AR: 1-2% (per year)</td>
<td><img src="image.png" alt="Image" /> Page (Hum Path 1991)</td>
</tr>
<tr>
<td>AR: 15-17% (after 15 years)</td>
<td><img src="image.png" alt="Image" /> Bodian (Cancer 1996)</td>
</tr>
<tr>
<td>AR: 35% (after 35 years)</td>
<td></td>
</tr>
</tbody>
</table>

### Subsequent breast cancer

<table>
<thead>
<tr>
<th>Most of BC-s ipsilateral</th>
<th>Page (Lancet 2003), Ottesen BREA2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equal rate</strong> (8.7% ipsilat vs. 6.7% contralat)</td>
<td>Tavassoli (AFIP 2003)</td>
</tr>
</tbody>
</table>
**Lobular neoplasia, classical type**

**Prognostic relevance for BC**

No pathological or clinical features could be identified to identify patients to develop BC after LN diagnosis.

Higher risk for BC include (general risk factors for BC):

- family history
- nulliparous state
- second biopsy with LN

WHO Classification of Tumors of the Breast (2012)
DABBS Breast Pathology (2012)
Lobular neoplasia, classical type

Prognostic relevance for BC

Current consensus considers classical LN (ALH and LCIS) as a risk factor and a non-obligate precursor for BC

WHO Classification of Tumors of the Breast (2012)
DABBS Breast Pathology (2012)
**Lobular neoplasia, classical type**

*Prognostic relevance for BC*

Upgrade rate after LN diagnosis on core/vacuum biopsies

controversial literature data due to

- variations in study design
- inconsistent definition of ALH, LCIS, LN

Upgrade rate on surgical excision varies between 0%- 50%
Lobular neoplasia, classical type (B3 lesions)

classical LN on core/vacuum biopsies
management (WHO recommendation)

Surgical excision recommended

IF

presence of another B3 lesion OR

presence of another lesion being indicative for excision OR

presence of a mass lesion on imaging OR

discordance between pathology and clinical/imaging OR

equivocal histology (LN3 can not be excluded) OR

B5a lesions in case of pleomorphic LN or LN with necrosis

WHO Classification of Tumors of the Breast (2012)
DABBS Breast Pathology (2012)
### Lobular neoplasia (LN), classical type

#### Recommendation management AGO (2015)

<table>
<thead>
<tr>
<th>LN classical type in core/vacuum biopsy</th>
<th>No excision necessary ONLY IF LN pleomorphic OR LN with necrosis OR LN extensive OR Discordance to imaging</th>
<th>Oxford LoE/GR</th>
<th>AGO 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LN classical type on Resection margin</strong></td>
<td>No re-excision ONLY IF residual mammographic finding OR LN pleomorphic or LN with necrosis on the margins</td>
<td>2a / C</td>
<td>++</td>
</tr>
</tbody>
</table>

**AGO 2015**

**2b / C**

No excision necessary

ONLY IF LN pleomorphic OR LN with necrosis OR LN extensive OR Discordance to imaging

**2a / C**

No re-excision ONLY IF residual mammographic finding OR LN pleomorphic or LN with necrosis on the margins
**Lobular Neoplasie (LN), classical type**

**conclusions**

**LN on core biopsy – excision or vacuum biopsy recommended**

- another B3 lesion
- another histological lesion warranting excision by itself
- visible lesion on imaging
- discrepancy between histology and imaging
- extensive LN

**LN on core or vacuum biopsy – excision not necessary**

- complete concordance between imaging and pathology
- BIRADS 3
- LN not associated with calcification
- LN only focal