Management of Benign High Risk Breast Lesions

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Introduction

Benign high risk breast lesions that are typically excised if diagnosed in a CNB:
  - Atypical ductal hyperplasia (ADH)
  - Flat epithelial atypia (FEA)
  - Lobular neoplasm (ALH/LCIS)
  - Intraductal Papilloma (IDP)
  - Radial scar/complex sclerosing lesion (RS/CSL)
  - Mucocele-like lesion (MLL)
  - Fibroepithelial lesion with increased stromal cellularity
  - Spindle cell neoplasm
  - Microglandular adenosis
### Lifetime Risk and Upgrade Rates to Malignancy in Subsequent Excision

<table>
<thead>
<tr>
<th>Condition</th>
<th>Lifetime Risk</th>
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<tbody>
<tr>
<td>ADH</td>
<td>3-5 X</td>
</tr>
<tr>
<td>Papilloma with atypia</td>
<td>7-8 X</td>
</tr>
<tr>
<td>MLL with atypia</td>
<td>21% (0-100%)</td>
</tr>
<tr>
<td>LCIS</td>
<td>8-10 X</td>
</tr>
<tr>
<td>ALH</td>
<td>3-5+ X</td>
</tr>
<tr>
<td>FEA</td>
<td>1.5-2 X</td>
</tr>
<tr>
<td>RS/CSL</td>
<td>2 X</td>
</tr>
<tr>
<td>Benign IDP</td>
<td>1-2X</td>
</tr>
<tr>
<td>MLL without atypia</td>
<td></td>
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</tbody>
</table>
Management for many benign high risk lesions are evolving due to low upgrade rates to malignancy in subsequent excision.

Could we characterize subset(s) of patients who could be managed non-surgically?
Flat epithelial atypia (FEA)
Lobular neoplasm (ALH/LCIS)
Intraductal Papilloma (IDP)
Radial scar/complex sclerosing lesion (RS/CSL)
Mucocele-like lesion (MLL)
Flat Epithelial Atypia (FEA)
Low grade DCIS

Low grade nuclear atypia

FEA shows no architectural atypia (flat): “clinging pattern” of LG DCIS
ADH arising in a background of FEA and Ca^{++}
Management of FEA diagnosed on a CNB

- Mean upgrade rate to malignancy on excision is 8% (0-21%)

- 1% upgrade rate excluding rad-path discordant cases (El Khoury et al)

- Studies have shown no upgrade on excision where no residual calcifications present after CNB

- Watchful surveillance may be acceptable for FEAs without residual calcifications or associated mass

- Radiology-Pathology Correlation is Strongly Advised

El Khoury et. al. Br J Radiol (2017) 90, 1072
Lobular Neoplasm (LCIS and ALH)
LCIS, classic type

ALH
ALH with pagetoid involvement of a duct

E-Cadherin: Negative
LCIS with necrosis and calcifications
Pleomorphic LCIS
Management of Lobular Neoplasm

- Mooney et al (2016)
  - Mean upgrade rate is 9% (0-67%) for ALH and 18% (0-60%) for LCIS
  - Incidental ALH or LCIS on CNB: 5% upgrade rate to malignancy
  - Targeted ALH or LCIS on CNB: 30% upgrade rate to malignancy

- Recent studies also suggest that surgical excision may not be mandatory for lobular neoplasm when it is an incidental finding and there is concordance between radiologic and pathological findings regarding the targeted biopsied lesion

- LCIS variants (LCIS with necrosis and pleomorphic LCIS) and targeted LCIS/ALH (mass or associated calcs) should be excised

- Radiology-Pathology Correlation is Strongly Advised
Intraductal Papilloma
Jonathan J. James, Andrew J. Evans, in *Clinical Ultrasound (Third Edition)*, 2011
Benign IDP

Benign IDP with usual ductal hyperplasia

Papilloma with atypia
Benign Intraductal Papilloma
Sclerosed papilloma
Encapsulated Papillary Carcinoma
Solid Papillary Carcinoma
DCIS with Papillary Growth Pattern
Management of Papillomas

- Mean upgrade rate for benign intraductal papilloma is 4% (0-10%)

- Mean upgrade rate for atypical papilloma is 28% (15-68%)

- Inconsistent results regarding radiologic features associated with benign IDPs that may be upgraded to malignancy on excision

- No increased risk for sclerosed papillomas

- Watchful surveillance may be acceptable for benign IDPs without worrisome radiologic features

- Excisional biopsy for IDPs with atypia, adjacent calcifications, associated irregular/ill-defined mass or when radiologic and pathological findings are discordant
Radial Scar/
Complex Sclerosing Lesion
Radial Scar
Radial Scar with DCIS
Invasive ductal carcinoma with a RS-like area on a CNB

Complex sclerosing lesion on a CNB - mimicking invasive ductal carcinoma
Radial Scar (RS)/ Complex sclerosing lesion (CSL)

- 2X increased breast cancer risk (> 50 years old)

- Mean of 7% upgrade rate to malignancy on excision (0-16%)

- Although there is no consensus on management of radial scar without atypia, excisional biopsy is usually performed

  - RS < 5 mm or incidental are less likely to be upgraded in the excision
  - Watchful surveillance may be acceptable for incidental and small radial scars seen on CNB
  - Conservative excision for lesions > 5 mm
Mucocele-like Lesion
MLL with associated calcifications

Extravasated mucin

Ca^{++}
MLL with benign epithelial hyperplasia and associated calcifications
MLL with FEA and ADH
DCIS with extracellular mucin production
Invasive mucinous carcinoma

Atypical epithelium floating within mucin pool
PDWA: Proliferative disease without atypia

AH: Atypical hyperplasia

MLL without atypia

MLL with atypia
Management of MLL

- Mean upgrade rate of MLL without atypia is 4% (small sample size of published studies; Rakha et al Histopathology (2013); Sutton et al AJCP (2012))

- MLL without atypia may be managed with imaging surveillance, if no residual calcification or suspicious mass not present

- Mean upgrade rate for MLL with atypia is 21% (0-100%) and warrants an excisional biopsy for further evaluation

- Radiology-Pathology Correlation is strongly advised
Summary

- Excisional biopsy for
  - ADH
  - FEA with residual calcifications or mass
  - Intraductal papilloma with atypia, adjacent calcs, or irregular borders
  - Targeted ALH and LCIS, and LCIS variants
  - Targeted radial scars (> 5mm) and complex sclerosing lesion
  - MLL with atypia or residual calcifications
  - Discordant radiologic and pathological findings
Summary

- Watchful surveillance may be acceptable for
  - FEA without residual calcifications or associated mass
  - Incidental ALH and LCIS
  - Intraductal papilloma without atypia or associated calcifications
  - MLL without atypia, residual calcification or associated mass
  - Small/incidental radial scar (< 5mm ?)
Questions?