Atypical ductal hyperplasia, Papillary lesions, And Lobular carcinoma in situ in Breast Core Biopsies

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Management of lesions with increased risk of malignancy

- Risk comes from multiple sources
  - Specimen identification
  - SAMPLING
  - Patient characteristics

Approach to lesions with increased risk of malignancy

- Goal is no longer to define the lesion but rather
- To define the risk associated with it
- To allow the patient and the clinician to make informed decision

Approach to lesions with increased risk of malignancy

- Unfortunately, while we can make the risk very low, we can rarely make it go away entirely
Breast core identification

- Prior to 2006 – at least 5 specimen mix ups
- ? in radiology - ? in pathology
- No system to verify identity
- All the clinicians blamed pathology

Inking breast cores

- 2006
  - Specimens received in mesh bags directly from radiology
  - 5 color inking strategy

Breast cores since 2006

- 2 specimen mix ups
  - One wrong block cut
  - One incorrect labelling of slide
  - Five typographical error (wrong color typed)
  - ALL detected prior to sign out
  - Make sure your pathologist has a system to ensure specimen identification

SAMPLING

- We excise benign lesions because of what might be left behind after core biopsy
- What is the overall sampling error of core needle biopsy (assuming radiologic correlation)?
Estimating Sampling error

- Risk of malignancy with a benign diagnosis:
  - 1-2% (but up to 4%) in multiple studies
  - Similar to other organs
  - Implies risks >2% may need excision (unless you are always going to excise)

Atypical ductal hyperplasia

- Diagnosed in 4-7% of biopsies
- Upgraded (DCIS or invasion) 18-31% of patients
- Everyone recommends excision (much higher than 2%)

ADH – reasons for upgrade

- Partial sampling by radiology
- Partial sampling by pathology
- Under diagnosis by pathology
ADH undersampling by radiology

- Jackman Radiology 1994

- More cores led to:
  - More DCIS diagnoses
  - Less ADH diagnoses
  - Less upgrading of ADH to DCIS

ADH undersampling by pathology

- ? How many levels?

Sampling breast cores

- 1 level – 32% of ADH
- 2 levels – 55% of ADH
- 3 levels – 78% of ADH
- 4 levels – 91% of ADH
- 5 levels – 100% of ADH

- Similar results for DCIS and invasive tumors

Underdiagnosis by pathology

- Pathology textbooks consistently recommend NOT diagnosing low grade ductal carcinoma on core needle biopsy unless it is incontrovertible (large)
**ADH – not controversial**
- Excise because the risk of upgrading is very high
- Unlikely to change any time soon

**Papilloma**

**Papillary lesions**
- <4% of all core needle biopsies
- At least 30% will be upgraded if co-exist with ADH – no controversy about management
- Overall “10%” will have co-existent DCIS or invasive carcinoma BUT

**Papillary lesions**
- More likely to have DCIS or Inv CA if:
  - Atypia present
  - Age >45 years
  - Larger lesions (>1.5cm)
  - Sampled with 14 gauge or smaller needle
- Excision usually recommended
Atypical papillary lesion

Papillary lesions without atypia
- Despite a “10%” risk of upgrading:
- Series with 0-2% upgrading exist and are becoming more common McGahn, Am Surg 2013
- Clinical follow-up for up to 5 years shows a very low rate of upgrading (0-2%) Wyss, Breast 2014

“Benign” papillary lesions: what changed?
- Larger gauge needles
- More cores taken
- Better recognition of “atypia”
- Better exclusion criteria (age, size)
- Recognition that the results in real life were no longer matching the published results
- Recognition that these patients could be followed and excised later

Papillary lesions
- With ADH = 30% risk – excise
- With “atypia” = ?10% risk – excise
- With older age, large size – consider excision
- Benign papilloma = ?0-5% risk – discuss with patient recognizing that this risk is in flux
“Benign” papilloma: the future

- Expect to see more and more studies showing a lower and lower rate of upgrading and more and more recommendations for clinical follow-up rather than excision
- More pressure on clinicians to assess their patient’s (and their own) risk tolerance

Lobular carcinoma in situ

- Lobular carcinoma in situ (LCIS)
  - <2% of breast cores
  - Overall 20-30% upgrade rate, BUT

LCIS

- Even 10 years ago there was evidence that this figure was too high
- Upgrade rates of 3% when radiographic discordance excluded (LCIS does not form a mass – upgrade rate 38%) Middleton Mod Pathol, 2003
- Upgrade rates of <3% when 5 levels obtained Renshaw Am J Clin Pathol, 2002
LCIS – when should you excise?

- Pleomorphic LCIS – behaves like DCIS
- Extensive LCIS – ALH, LCIS, and extensive LCIS form a continuum of risk
- What about LCIS, NOS?

LCIS – the new data

- Although there are still recent studies showing high (>10%) upgrade rates for LCIS,
- more and more studies are showing
  - Upgrade rates of 3% on excision
  - 3-5 year clinical follow-up rates of 3%
  
  Middleton Cancer Med 2014

LCIS: what changed?

- Larger gauge needles
- More cores taken, better correlation
- Better pathologic sampling
- Better recognition of LCIS by pathologists
- Recognition that the recommendations for LCIS on cores and excision were discordant
- Recognition that these patients could be followed and excised later

LCIS -risk

- If radiologically discordant (mass lesion), or pleomorphic or “extensive” – excise (upgrade risk 10%)
- Otherwise – upgrade risk 3% - discuss with patient to determine their and your risk tolerance (3% is not 2% but it is close)
What about labs with high rates of upgrade for LCIS?

- My opinion - Evidence of poor performance
- Radiology not taking enough tissue
- Radiology not hitting the lesion
- Radiology not correlating well
- Pathology not sampling their cores adequately
- Pathology not recognizing small foci of LCIS

Conclusions 1 of 4

- Make sure your pathologists have a system for specimen identification in their laboratory

Conclusions 2 of 4

- ADH on core is a high risk lesion (30% upgrade rate vs 1-2% for benign cases)
- This is not changing any time soon

Conclusions 3 of 4

- Atypical papilloma is a high risk lesion (10% upgrade rate) excise
- Benign papilloma without adverse clinical/radiologic features (size, age) is a low risk lesion (0-5% upgrade rate) but this rate is still being defined and may change
- Patients response to a 5% risk versus 1-2% likely vary
Conclusions 4 of 4

- LCIS without a mass lesion or pleomorphic or extensive features is a very low risk lesion (3% upgrade rate)
- This upgrade rate is unlikely to change in the future
- Patients response to a risk of 3% versus 1-2% likely vary