Proliferative Epithelial lesions of the Breast

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Proliferative Epithelial Lesions of the Breast

- Usual type ductal hyperplasia
- Columnar cell change
- Columnar cell Hyperplasia
- Flat epithelial atypia
- Atypical ductal hyperplasia
- Intraductal/ intracystic papillary lesions
- In situ lobular neoplasia
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Florid Regular Hyperplasia

- The proliferating cells are similar to the normal cells lining the ducts.

- The cells are haphazardly arranged, may overlap or have a streaming arrangement.

- When spaces are present, they are irregular and mostly peripheral.

- An occasional mitotic figure may be present.
Florid Regular Hyperplasia vs. Low grade DCIS
If still in doubt:

Stain for cytokeratin 5
CK 5

- There is a mixture of positive and negative cells (polyclonal)
Malignant (& atypical) cells are CK 5 negative (monoclonal)
Diagnosis: Florid usual type uctal hyperplasia
F20, Right breast lump

Diagnosis: Complex Sclerosing Lesion with Florid Usual Type Ductal Hyperplasia
Diagnosis: DCIS
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These are not new lesions

They involve the terminal duct lobular units (TDLUs)

And were considered in the past as part of the fibrocystic change spectrum

They are now being singled out because they have chromosomal abnormalities indicating possible pre-cancerous potentials
The simplest form of this group of lesions and the one with least chromosomal abnormalities usually involves whole TDLUs. Which become cystic.
Columnar Cell Change

- Lined by one or two layers of columnar epithelial cells, with uniform elongated nuclei, arranged perpendicular to the basement membrane.

- Nucleoli are not obvious and mitotic figures are rare

- The cells usually have apical snouts and the lumina contain flocculent material

- Luminal calcification is common, and is usually the reason for the biopsy
Columnar Cell Hyperplasia

- Dilated glands
- Lined by more than 2 layers of columnar cells, with no atypia, i.e. the cells are arranged perpendicular to the basement membrane and have ovoid or elongated nuclei,
- The proliferating cells may form mounds, tufts, or short micropapillae
**Flat Epithelial Atypia**

- By low power, TDLUs are usually bluer than usual.
- Glands are lined by 2 or more **flat** layers of cells showing low grade, monomorphic, cytologic atypia (resembling those seen in low grade DCIS).
Flat Epithelial Atypia

- Nuclei are typically round, hyperchromatic, lack polarity, and may have prominent nucleoli

- Apical snouts, luminal secretion and calcification are common

- No complex architecture
Columnar Cell Change & Hyperplasia + Flat Epithelial atypia/ Immunohistochemistry

- ER & PgR strongly positive
- Cytokeratin 19 positive
- Cytokeratin 5 & 14 negative
- HER2 negative
CK5

HUT

ADH

LG/ DCIS
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Papillary lesions

I. Benign
- Benign intraduct papilloma
- Multiple intraduct papillomas
- Intraduct papilloma with focal usual type hyperplasia

II. Atypical
- Intraduct papilloma with focal atypical hyperplasia (atypical intraduct papilloma)
- Intraduct papilloma with focal DCIS

III. Malignant
- Papillary DCIS
- Intracystic (encapsulated) papillary carcinoma
- Solid papillary carcinoma*

*Collins LC, Schnitt SJ. Histopathology 2008, 52,20-29
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1. Benign Intraduct Papilloma
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- Fronds covered by 2 layers of cells: luminal and myoepithelial
- Myoepithelial cells surround the dilated duct
Benign Intraduct Papilloma
2. Multiple Benign intraduct papillomas*

*5 or more
3. Intraduct papilloma with focal usual type hyperplasia

- The fronds are covered by more than 2 layers of epithelial cells
- With no atypia

*Page DL et al. Cancer 1996,78: 258-266*
Intraduct papilloma with focal usual type hyperplasia

- CK 5 (& ER) will show 2 populations of cells: negative and positive
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4. Intraduct papilloma with focal **atypical** hyperplasia

- atypical cells occupy an area less than 3mm

- Atypical cells are relatively large with abundant cytoplasm and large uniform nuclei

- Cells are CK 5 negative, ER positive
5. Intraduct papilloma with focal DCIS

- Atypical cells occupy an area larger than 3mm
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6. Papillary DCIS

CK5/6
7. Intracystic (encapsulated) papillary carcinoma

- well-defined lesions consisting entirely of malignant cells covering papillary fronds, with no underlying myoepithelial cells,

- developing in an apparently dilated, usually subareolar, duct,

- surrounded by a thick fibrous capsule
Case No. 152:F 64y, Left Breast, Cystic Lump

**Intracystic (encapsulated) papillary carcinoma/ IH**
Intracystic (encapsulated) papillary carcinoma

- There may be no myoepithelial cells around the lesion
- Thus, the lesion may be in fact a form of low grade invasive carcinoma with an expansile growth pattern
- Or part of progression from in situ to invasive carcinoma
Intracystic (encapsulated) papillary carcinoma

- The lesion may be associated with foci of DCIS or frankly invasive carcinoma

- In the latter case, Collins & Schnitt recommend considering only the size of the frankly invasive component for staging purposes
8. Solid Papillary carcinoma

- Circumscribed solid nodule
- May be associated with adjacent foci of in situ or invasive carcinoma
Solid Papillary carcinoma

- Discrete papillae are not present,

- but the underlying papillary structure is represented by a network of fibrovascular cores among the solid epithelial proliferation
Solid Papillary carcinoma

- There are no myoepithelial cells within the lesion
- And myoepithelial cells may be also lacking around the lesion in some cases,
- raising the possibility, as in intracystic papillary lesions, that at least some of these cases also represent low grade expansile invasive cancers
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In Situ Lobular Neoplasia
(Atypical Lobular Hyperplasia (ALH)/ Lobular Carcinoma in Situ (LCIS))
1. (Incidental) In Situ Lobular Neoplasia
Extensive classic LCIS
Pleomorphic LCIS
Pleomorphic LCIS/ E-Cadherin
Mixed LCIS
In Situ Lobular Neoplasia in core biopsies

- B3
- Extensive LCIS
- Pleomorphic LCIS
- Mixed LCIS

B5a (If no invasive elements are present)
Thank you