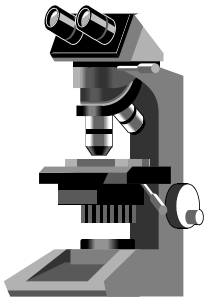
CALIFORNIA
TUMOR TISSUE REGISTRY

BREAST PATHOLOGY

Minutes – Subscription A

January 2016



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FILE DIAGNOSES

CTTR Subscription A January 2016

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CASE #1: Accession No. 8340

DIAGNOSIS: LACTATING ADENOMA, Breast

Diagnoses submitted in decreasing order of frequency:

Lactating Adenoma
Lipid rich carcinoma
Nodular lactational hyperplasia

Discussion
Both breast masses in this pregnant patient were well circumscribed and sharply demarcated, consisting of a population of densely packed tubules. The tubules are irregularly dilated and lined by both luminal epithelial and abluminal myoepithelial cells. Superimposed lactational change in the form of cytoplasmic vacuolation and eosinophilic secretions are present. Nuclei are active appearing with a uniform population of cuboidal epithelial cells with prominent nucleoli. There is minimal intervening stroma.

Secretory carcinoma of the breast is a rare tumor (<1%) occurs in young patients (usually < 30 years of age), is triple negative tumor and associated with the ETV6-NTRK3 gene fusion. This is a low grade tumor with an excellent prognosis. It is a circumscribed tumor consisting of tubules with sheet like growth lined by cells with eosinophilic granular or vacuolated cytoplasm, and PAS-D + secretions. Fibrous intervening stroma is present.

CASE #2: Accession No. 28644

DIAGNOSIS: FIBROADENOMATOID MASTOPATHY (SCLEROSING LOBULAR HYPERPLASIA, ADENOSIS TUMOR), Left/Right Breast

Diagnoses submitted in decreasing order of frequency:

Lobular hyperplasia, sclerosing
Juvenile hyperplasia/hypertrophy
Fibroadenomatoid mastopathy
Juvenile Fibroepithelial lesion, fibroadenoma, adolescent giant fibroadenoma
Mammary hyperplasia/hypertrophy
Adenofibroma
Tubular adenoma
Gynecomastia
Juvenile papillomatosis
Nodular adenosis

Discussion
Fibroadenomatoid mastopathy is a benign proliferative lesion that presents as a localized mass in patients ranging in age from 14 to 41 years. Histologically it consists of enlarged lobules composed of glands and scant collagenized fibrous stroma, resembling miniature fibroadenomas or tubular adenomas due to the prominent glandular component. The tubules are lined by both epithelial and myoepithelial cells. It is seen in 50% breast tissue surrounding fibroadenomas and most phyllodes tumors. The association suggests that the same or related factors contribute to these lesions. Excisional biopsy is adequate. It has been suggested that this entity may contribute to the syndrome of multiple recurrent fibroadenomas.

CASE #3: Accession No. 29772

DIAGNOSIS: MYOFIBROBLASTOMA, Breast

Diagnoses submitted in decreasing order of frequency:

Metaplastic carcinoma, spindle cell carcinoma, sarcomatoid carcinoma
Nodular fasciitis
Phyllodes tumor with sarcomatous overgrowth, borderline, malignant
Fibromatosis
Myofibroblastoma
Malignant stromal tumor with myofibroblastic differentiation
Leiomyoma
Low grade periductal sarcoma

Discussion
Myofibroblastoma is a rare benign mesenchymal neoplasm that occurs in the breast over a wide age range, but predominantly in older males and females. It is important to recognize this entity and avoid misinterpretation of the lesion as a spindle cell carcinoma. Although originally reported to be more frequent in men, at present they are considered to arise with equal frequency in both sexes. Lesions are frequently unilateral and solitary, well circumscribed, 1 – 4 cm in size.

The proliferating spindle cells have eosinophilic cytoplasm and are arranged in short fascicles, separated by broad bands of hyalinized collagen. Mast cells are present. Mitoses are infrequent. There are no entrapped ducts or lobules. The lesional cells are vimentin, desmin, actin, SMA, ER, PR, **CD 34 +,** and negative for AE1/AE3. This lesion may be related to spindle cell lipoma and solitary fibrous tumor. Excision of the lesion is usually sufficient treatment.

CASE #4: Accession No. 27915

DIAGNOSIS: BREAST PAPILLOMA, Subareolar

Diagnoses submitted in decreasing order of frequency:

Intraductal papilloma, complex

Hyalinizing papilloma, sclerosing papilloma
Ductal papilloma, atypical
Papillary carcinoma, intracystic
Partially sclerosed papilloma and florid UDH
Intraductal papilloma with atypical ductal hyperplasia

Discussion
This intraductal papilloma was large and subareolar in location. The patient presented with nipple discharge. Section shows a prominent arborescent fibrovascular core lined by a double layer of epithelial cells. Solitary subareolar papillomas uncommonly display adjacent duct hyperplasia, atypical duct hyperplasia and / or carcinoma- in-situ, which are more frequently associated with the peripheral multifocal papillomas. At the base of the papilloma there may be considerable fibrosis and epithelial entrapment, resulting in a pseudoinvasive pattern.

Papillary carcinoma consists of a fibrovascular core lined by a single cell type – the myoepithelial component is absent.

CASE NO #5: Accession No. 23473

DIAGNOSIS: ENCAPSULATED PAPILLARY CARCINOMA, Left Breast

Diagnoses submitted in decreasing order of frequency:

Encapsulated papillary carcinoma, encystic, intracystic
Papillary carcinoma
Intraductal carcinoma, papillary cystic type, papillary DCIS
Intraductal papillary carcinoma with focal stromal invasion
Papillary carcinoma, invasive

Discussion
This multiloculated cystic lesion shows nests and sheets of a papillary tumor. The tumor cells form broad sheets and papillary projections and consist of fairly uniform nuclei with a large amount of cytoplasm. The cyst wall shows focal areas of invasion by the papillary tumor.

Encapsulated papillary carcinoma was traditionally considered to be a variant of DCIS and formerly termed intracystic or encystic papillary carcinoma. It is characterized by a circumscribed nodule of papillary carcinoma surrounded by a fibrous capsule. These are most frequently encountered in elderly women, who often present with a subareolar mass and /or nipple discharge. It is not uncommon to find entrapped neoplastic epithelial cells within the fibrous capsule, which is often misinterpreted as invasive carcinoma. Myoepithelial cells are absent, even at the periphery. These lesions may be a form of low-grade invasive carcinoma with an expansile growth pattern. The 2011 WHO Working Group has recommended that these lesions be staged and managed as in situ lesions (Tis).

CASE #6: Accession No. 31299

DIAGNOSIS: LOW GRADE PHYLLODES TUMOR, Breast

Diagnoses submitted in decreasing order of frequency:

Low grade phyllodes tumor, benign phyllodes tumor
Giant fibroadenoma, Juvenile fibroadenoma
Fibroadenoma, intracanalicular

Discussion
Fibroadenomas and low grade phyllodes tumors (PT) are fibroepithelial lesions with overlapping features. Distinguishing features are the stromal overgrowth, stromal cellularity and clefting.
Phyllodes tumors account for less than 1% of breast tumors, have a median size of around 6 cm, but may be much larger. Tumors are typically solitary, well-circumscribed, and solid with cystic areas. Fleshy leaf-like processes protrude into the cystic spaces.

Microscopically PT consists of an epithelial component and a cellular spindle cell stroma forming the protruding leaf-like processes. Stromal cells are spindle-shaped, and fibroblastic or myofibroblastic in nature. Mesenchymal metaplastic changes may be present in the form of osseous, chondroid elements. A combination of tumor size, margins, atypia, mitotic activity are helpful in predicting behavior. The distinction from cellular fibroadenomas is made predominantly on the basis of the stromal component and growth patterns.

CASE #7: Accession No. 8330

DIAGNOSIS: INFILTRATING LOBULAR CARCINOMA, PLEOMORPHIC TYPE, Breast

Diagnoses submitted in decreasing order of frequency:

Infiltrating Lobular carcinoma, pleomorphic type
Metaplastic carcinoma
Lymphoproliferative / Hematopoeitic disorder (R/O Large cell lymphoma, Hodgkin Lymphoma, myeloid disorder)
Chronic mastitis, mammary duct ectasia, sclerosing lymphocytic mastopathy, diabetic Mastopathy, lymphocytic mastitis with epithelioid stromal cells, periductal mastitis
Nodular fasciitis
PASH
Scirrhous carcinoma
Histiocytoid carcinoma
Granulomatous Mastitis
Infiltrating carcinoma with signet-ring cells
Inflammatory Myofibroblastic Tumor, Myofibroblastoma
Malignant neoplasm requiring immunohistochemical stains

Discussion

Infiltrating inconspicuously but extensively are small dark pleomorphic, sometimes hyperchromatic tumor cells, growing singly or in double rows between fibrous tissue strands.
Background shows dense hyalinized connective tissue stroma with ectatic ducts. Large numbers of lymphocytes are scattered diffusely as well as in focal collections. Differential diagnosis would include leukemia and lymphoma due to the inflammatory cell component.

Pleomorphic variant of infiltrating lobular carcinoma (PLC) is an uncommon tumor that comprises 1% of breast cancers. It is associated with adverse pathologic factors and clinical behavior. The infiltrating tumor cells retain the distinctive growth pattern of lobular carcinoma and exhibit marked nuclear atypia (nuclear grade 3, nuclei x4 size of lymphocyte nucleus) and pleomorphism. Invasive PLC is commonly found in association with lobular carcinoma in situ of pleomorphic type. PLC show androgen receptor positivity.

CASE #8: Accession No. 32147

DIAGNOSIS: METAPLASTIC CARCINOMA (SQUAMOUS CELL CARCINOMA), Breast

Diagnoses submitted in decreasing order of frequency:

Squamous carcinoma, Metaplastic carcinoma, high grade
Invasive ductal / mammary carcinoma, high grade
Infiltrating apocrine carcinoma
Pleomorphic carcinoma
High grade invasive ductal carcinoma, suggestive of BRCA1 associated carcinoma
Solid papillary carcinoma
Poorly differentiated carcinoma, r/o metastasis
Comedocarcinoma

Discussion
Metaplastic carcinoma of the breast denotes a heterogeneous group of uncommon malignant entities with non-epithelial (sarcomatoid), mixed or pure epithelial neoplastic components. Metaplastic breast carcinoma makes up less than 1% of breast cancers. It occurs more commonly in black and Hispanic women. The mean patient age at presentation is 61.1 years. Patients frequently present with a rapidly growing, relatively large breast mass without nodal involvement

This case shows a proliferation of pure epithelial predominantly non-keratinized squamous cell carcinoma, with many areas of central necrosis. P63, CK 5/6 was positive in the tumor cells. Metaplastic carcinomas are triple negative tumors (ER, PR, HER2 –ve).

Metaplastic breast carcinoma with pure SCC features accounts for less than 0.1% of all cases of breast carcinoma. Squamous cell carcinoma is diagnosed when the malignant cells are entirely of squamous type, the tumor is independent from overlying skin and other primary SCC sites are excluded.

CASE # 9: Accession No. 8543

DIAGNOSIS: MEDULLARY CARCINOMA, Breast

Diagnoses submitted in decreasing order of frequency:

Invasive ductal carcinoma with medullary features
Medullary carcinoma, Atypical medullary carcinoma
Medullary carcinoma vs. metastasis/malignancy in intramammary lymph node
Metastatic carcinoma in a lymph node
Lymphoma, DLBCL, Large cell NHL, Hodgkin Lymphoma, histiocytic malignancy, Anaplastic large cell lymphoma
Lymphoepithelioma-like carcinoma
Metaplastic carcinoma
Rosai-Dorfman disease
Inflammatory carcinoma
LN- Metastatic melanoma vs. lymphoma vs. carcinoma
Plasma cell mastitis

Discussion
This tumor is circumscribed and consists of large pleomorphic tumor cells in clusters and syncytial growth patterns with an admixed prominent lymphoplasmacytic infiltrate. It has the features of medullary carcinoma. There is scant stroma, no glandular differentiation, intraductal growth, DCIS, or mucin production. Atypical medullary carcinoma (or infiltrating ductal carcinoma) is the term used for tumors if only 2 of the 3 main features are present (circumscription, syncytial growth of high grade tumor cells, chronic inflammatory infiltrate).

Medullary Carcinoma is rare, comprising <1% of invasive breast cancers. It is more common in patients with BRCA 1 mutations. It is a basal-like carcinoma, and is triple negative (ER< PR< HER2 –ve). EBV is also negative. Tumor is CK 5/6 positive, and shows a high Ki-67 index.

CASE #10: Accession No. 19117

DIAGNOSIS: ANGIOSARCOMA, Breast

Diagnoses submitted in decreasing order of frequency:

Angiosarcoma, Epithelioid angiosarcoma
Hemangioma (perilobular, atypical, complex, capillary), Angiomatosis, Angiolipoma
Pleomorphic lobular carcinoma
Lipoma

Discussion
Tissue shows freely inter-anastomosing vascular channels proliferating within mammary parenchyma and fat with an infiltrative border. Endothelial cells are not conspicuous although some hyperchromatic nuclei are present. No papillary endothelial hyperplasia, solid or spindled areas or necrosis are identified. No feeder vessels or vacular channels with muscular walls are identified. This is a case of Grade I (well differentiated) angiosarcoma of the breast. Margin evaluation may be quite challenging due to the bland cytologic and architectural features. Tumor is Vimentin, Factor VIII, CD 31 and CD 34 +.

This is a rare, <0.2% primary breast neoplasm, occurring in young women with no prior history, or in older women 5-10 years post- radiation treatment and axillary lymph node dissection for breast carcinoma (Stewart-Treves syndrome, due to chronic lymphedema). Treatment is complete excision. Tumor grading has no prognostic significance. Median survival is 3 – 6 years.

The differential includes benign perilobular hemangioma, hemangioma, angiomatosis, and atypical vascular lesion (presumed precursor lesion, circumscribed border).

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