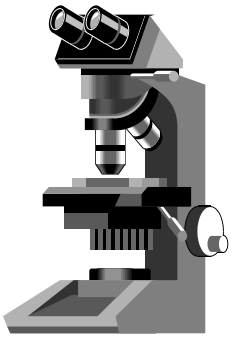
CALIFORNIA
TUMOR TISSUE REGISTRY

Dermatopathology

Minutes – Subscription B

May 2016



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FILE DIAGNOSES

CTTR Subscription B May 2016

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CASE #1: **Accession No. 32057**

DIAGNOSIS: HISTOLOGIC FEATURES CONSISTENT WITH KELOID, EARLOBE

Diagnoses submitted in decreasing order of frequency:

Keloid
Hypertrophic scar

Discussion

This is a polypoid nodule surmounted by skin with an underlying exaggerated scarring response to ear piercing trauma. The epidermis and papillary dermis are relatively normal (no epidermal flattening, papillary dermis shows no scarring). There is subjacent tongue like advancing edge of haphazardly arranged broad dense hyalinized collagen fibers with a horizontal cellular fibrous band in the upper reticular dermis.

A keloid is an abnormal proliferation of scar tissue that forms at the site of cutaneous injury; it does not regress and grows beyond the original margins of the trauma. The frequency of keloid occurrence in persons with highly pigmented skin is 15 times higher than in persons with less pigmented skin.

Differential diagnosis: hypertrophic scar (delicate orderly arrangement of fibrillar collagen, prominent vertically oriented blood vessels, does not recur)

CASE #2: **Accession No. 4857**

DIAGNOSIS: MYOPERICYTOMA/ANGIOLEIOMYOMA, SKIN

Diagnoses submitted in decreasing order of frequency:

Angiomyoma /Angioleiomyoma
Myopericytoma
Hemangioma (spindle cell, benign hyalinizing)
Arterio-venous malformation
Cellular angiofibroma
Neurilemmoma

Discussion

This is a well circumscribed lesion in the dermis composed of a mixture of variably sized blood vessels. There is a prominent intermixed component of thick walled vessels with myocollagenous cuffing.

Myopericytoma (MPC, perivascular myoid tumor) is a benign tumor consisting of thin walled vessels and concentric, perivascular arrangement of plump spindle to round myoid cells. Tumors are slow growing, painful, and are usually seen in dermis or subcutaneous tissue of the extremities in adults. Perivascular myoid cells are smooth muscle actin +, desmin and CD34-. Angiomyoma/angioleiomyoma are related entities.

Differential diagnosis: Angioma, A-V malformation, HPC, glomus tumor)

CASE #3: **Accession No. 4730**

DIAGNOSIS: CHONDROID SYRINGOMA, SKIN OF JAW

Diagnoses submitted in decreasing order of frequency:

Chondroid syringoma, mixed
Cutaneous mixed tumor (benign, apocrine, pleomorphic adenoma)
Ameloblastoma, keratoameloblastoma
Trichoepithelioma, trichoadenoma
Benign proliferating pilar tumor

Discussion

Chondroid syringoma (aka cutaneous/eccrine mixed tumor) is a rare benign skin neoplasm most often seen in middle aged men. Head and neck location is the most common.

Tumors are well circumscribed, occur in the deep dermis or subcutaneous fat, with prominent chondroid matrix, bland epithelial and myoepithelial cells that form glands, ducts, and keratinous cysts with foci of squamous differentiation. Necrosis is absent. Mitoses are sparse. Tumors are positive for gene rearrangement of PLAG1.

Differential diagnosis: Malignant mixed tumor (pleomorphic, cellular, necrosis, infiltrative growth), myoepithelioma (luminal epithelial cells absent), apocrine mixed tumor (decapitation secretions), cutaneous chondroma (lacks epimyoepithelial component)

CASE #4: **Accession No. 25000**

DIAGNOSIS: BASAL CELL CARCINOMA, SHOULDER

Diagnoses submitted in decreasing order of frequency:

Basal cell carcinoma, adenoid basal cell carcinoma
Trichoblastoma
High grade adnexal carcinoma
Clear cell hidradenocarcinoma
Malignant pilomatricoma
Eccrine spiroadenoma, Eccrine duct carcinoma
Squamous cell carcinoma
Metastatic carcinoma

Discussion

Basal cell carcinoma (BCC) is a common malignant skin neoplasm, commonly occurring in sun-exposed hair-bearing skin. BCC is associated with UV exposure and radiation treatment. Gorlin/Basal cell nevus syndrome: AD, Multiple early onset highly invasive BCCs, odontogenic cysts, palmar and plantar pits, dural calcification, ovarian fibromas, skeletal abnormalities). Patients with xeroderma pigmentosum with defective repair of sun induced mutations, develop a large number of BCCs and squamous cell carcinomas early in life.

Basaloid tumor cells contain hyperchromatic nuclei with scant cytoplasm. Nuclei show peripheral palisading. Mitoses and apoptotic bodies are present. There is peritumoral clefting and myxoid stromal change (most helpful features for distinguishing from other basaloid neoplasms).
Positive stains: Ber-EP4, p63.
Negative stains: CK7, CK20. CEA, EMA

Differential diagnosis: Trichoblastoma/tricoepithelioma (cysts, fibroblastic stroma, no epithelial connection), Merkel cell CA (CK20, neuroendocrine stains+), SCC (Ber-EP4 -)

CASE NO #5: **Accession No. 29435**

DIAGNOSIS: VERRUCOUS CARCINOMA, Thigh

Diagnoses submitted in decreasing order of frequency:

Invasive squamous cell carcinoma (condylomatous, HPV induced, giant, verrucous)
Verruca vulgaris, Condyloma

Discussion

This is a well differentiated squamous verrucous carcinoma (giant condyloma acuminatum), with limited metastatic potential. It is a rare sexually transmitted HPV-related tumor; the incidence is estimated to be 0.1% in the general population. Low-risk genotypes (HPV-6 and 11) predominate. It occurs in the mucosal anogenital region in both sexes. Majority of cases occur in patients younger than 50 years. It has a cauliflower-like growth with a broad pushing base and prominent bulbous endophytic expansion into underlying tissue.

Giant condyloma acuminatum is differentiated histologically from ordinary condyloma acuminate by its thicker stratum corneum and the presence of an endophytic down growth, along with a tendency to invade deeper.

CASE #6: **Accession No. 29787**

DIAGNOSIS: HIDRADENOCARCINOMA/MALIGNANT ACROSPIROMA, Back

Diagnoses submitted in decreasing order of frequency:

Basal cell carcinoma with squamous differentiation, Adenosquamous carcinoma
Basosquamous carcinoma, Basal squamous cell carcinoma
Basal cell carcinoma
Eccrine porocarcinoma

Discussion

Hidradenomas are relatively frequent benign adnexal tumors. Malignant hidradenoma or hidradenocarcinoma, is a very rare tumor with just over 50 cases reported. They follow an aggressive clinical course characterized by repeated local recurrences and systemic metastasis. Most lesions occur as dermal nodules on the face and extremities, however other areas of the body may also be involved.

Criteria for diagnosing a malignant hidradenoma / hidradenocarcinoma: lack of circumscription, infiltrative growth, deep extension, nuclear pleomorphism, necrosis (sometimes comedo-like), vascular invasion, perineural invasion, and the presence of frequent mitotic figures. Hyalinized stroma, ductal differentiation, clear cell change, epidermoid morphology, nuclear pleomorphism, pseudoinclusion, and nuclear grooves are present.

Differential diagnosis: clear cell hydradenoma with increased mitoses (no pleomorphism or infiltrative growth), porocarcinoma, clear cell type (absent epidermal involvement by tumor), basal cell carcinoma (peripheral palisading, separation artifact), trichilemmal carcinoma, clear cell squamous cell carcinoma and metastatic renal clear cell carcinoma.

CASE #7: **Accession No. 29736**

DIAGNOSIS: SEBACEOUS CARCINOMA, Chest

Diagnoses submitted in decreasing order of frequency:

Sebaceous carcinoma
Basal cell carcinoma with sebaceous differentiation

Discussion

Sebaceous carcinoma is a rare, aggressive malignant tumor that arises from the sebaceous glands. Tumors occur in periocular (75%) and extraocular sites. Tumors occur predominantly in older adults (6^{th}-7^{th} decades), women are more commonly affected. There is a tendency for local recurrence and distant metastases. May be associated with Muir-Torre syndrome (hereditary, AD cancer syndrome – subtype of HNPCC/Lynch with sebaceous tumors, keratoacanthomas, visceral neoplasms).

The tumor consists of irregular lobules and sheets of cells, with varying degrees of sebaceous and undifferentiated cells. Sebaceous cells show scalloped, centrally located nuclei with foamy, multivacuolated cytoplasm. The undifferentiated eosinophilic cells show atypia, fine lipid globules, and nuclear and nucleolar pleomorphism. Some atypical keratinizing cells may be present in larger lobules. Zones of necrosis, marked nuclear atypia, abnormal mitotic figures, and an infiltrative growth pattern are common. Pagetoid or intraepithelial spread is a classic feature. Sebaceous carcinoma is positive for: Oil Red O), Sudan IV, EMA, Ber-EP4, androgen receptor, CK7, CAM 5.2, and BRST-1. This tumor is negative for: CEA, S100, and GCDFP-15.

Differential diagnosis: squamous cell carcinoma with hydropic change (CK7 -, EMA-, Ber-EP4 -), basal cell carcinoma with sebaceous differentiation (CK7 -, EMA-, Ber-EP4+).

CASE #8: **Accession No. 25849**

DIAGNOSIS: MERKEL CELL CARCINOMA, Groin

Diagnoses submitted in decreasing order of frequency:

Merkel cell carcinoma (metastatic)

Neuroendocrine tumor (high grade)

Discussion

Merkel cell carcinoma (MCC) is a rare, highly aggressive neuroendocrine cutaneous neoplasm with high rate of metastases and poor survival. It usually arises on the sun exposed skin of the elderly and immunosuppressed individuals. It is composed of nests and sheets of monotonous small round cells with scant cytoplasm, round to oval nucleus, powdery chromatin and inconspicuous nucleoli. Multiple mitoses and apoptosis are present. Lymphovascular invasion and regional nodal metastases are common. The malignant cells express both epithelial and neuroendocrine (CD56, synaptophysin, chromogranin) immunohistochemical markers. Cytokeratin 20 shows a characteristic paranuclear dot like positivity. Diffuse P^# staining is associated with an adverse prognosis. Merkel cell Polyomavirus (MCPyV) has been identified in tumor tissue from MCC patients. UV light exposure, immunosuppression and interaction of the MCC virus protein with p53 and Rb have been implicated in MCC tumorigenesis.

Differential diagnosis: Special stains are necessary to differentiate from other small round cell tumors (metastatic small cell carcinoma – TTF1+, CK 20-; lymphoma – CD45+, and melanoma – S100, HMB45+).

CASE # 9: **Accession No. 26319**

DIAGNOSIS: ANGIOSARCOMA, Neck

Diagnoses submitted in decreasing order of frequency:

Angiosarcoma (high grade, epithelioid)

Discussion

Angiosarcomas (AS) are rare malignant mesenchymal tumors characterized by anastomosing atypical vascular spaces dissecting the subcutaneous collagen and lined by proliferating pleomorphic endothelial cells. Tumor cells may show hyperchromasia, spindle and epitheliod morphology, papillary formations and solid foci. Mitoses, hemorrhage and necrosis are common. Tumors may be well differentiated (resembling benign hemangiomas) to anaplastic solid lesions (resembling a variety of other high grade malignant neoplasms of different cell types). Cutaneous AS are the most common form, with a predilection for the head and neck (particularly scalp) areas of elderly patients. Other angiosarcoma types include primary breast AS (aggressive neoplasm, young females), and AS associated with chronic lymphedema and radiation exposure (usually high grade). Tumor cells are: CD31, CD 34, and Factor VIII+. Epitheliod AS may also be CK+. Differential diagnosis: hemangioma (well circumscribed, not invasive), atypical vascular lesions (no mitoses)

CASE #10: **Accession No. 31825**

DIAGNOSIS: METASTATIC MELANOMA, LUNG

Diagnoses submitted in decreasing order of frequency:

Metastatic malignant melanoma

Discussion

Malignant melanoma (MM) arises from melanosomes of the deeper layers of the skin and eye. Mucosal origins from the oral cavity, esophagus, larynx, anogenital mucosa, and ovarian teratomas have been described.

This patient presented with two separate nodules in his right lung. The tumor cells show a vague nested appearance and foci of necrosis. No melanin pigment is present. The immunoprofile and the cytologic features are supportive of MM – metastatic to the lung. There are more than 30 case reports describing primary pulmonary MM (0.01% of all lung tumors), characterized by a poor prognosis. An extra-pulmonary origin of the tumor has to be excluded; particularly metastasis from an occult or remote (ocular) primary must be excluded based on the clinical, radiologic and pathologic findings. Proposed criteria for diagnosis of primary MM include: No present or past history of cutaneous, mucosal or ocular MM, a solitary lung tumor, bronchial epithelium with invasion and underlying junctional/nesting of MM cells.

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