Spindled cell squamous cell carcinoma (SCSCC) is a lesion that is usually seen in a setting of severe sun damage or other irradiation. It shows a behavior similar to ordinary squamous cell carcinoma, but SCSCC may be difficult to diagnose. It typically shows spindled cells with vesicular nuclei that may exhibit prominent eosinophilic cytoplasm. Contiguity with the epidermis or a hair follicle may be seen. Single cell keratinization serves as a good clue to the diagnosis. Some cells may exhibit perinuclear halos and corp-rond-like rings of tonofilaments. SCSCC is usually positive for cytokeratins AE1, AE3 or Cam 5.2. Some lesions, however, fail to stain with these markers. In these cases, positive cells may be seen with cytokeratin 903 or cytokeratin MNF116. Vimentin may also be positive in these lesions. This may be the result of reduced cell-to-cell contact. Keratin/vimentin co-positivity is not a unique phenomenon and may also be seen in epithelioid sarcoma, adenoid cystic carcinoma, renal cell carcinoma, and thyroid carcinoma.

p63 can be a useful adjunct marker for spindle cell SCC. P63 is a member of the p53 gene family. In the skin, it is expressed in the nuclei of basal and spinous cells of the epidermis, peripheral cells of the eccrine dermal ducts, germinative cells of sebaceous glands, myoepithelial cells of the terminal portion of the eccrine glands and apocrine glands. In the differential diagnosis of cutaneous spindle cell malignancies, p63 labeling is supportive of spindle cell SCC and adds a useful nuclear marker to the repertoire used in this differential.

Dotto JE, Glusac EJ. p63 is a useful marker for cutaneous spindle cell squamous cell carcinoma. Journal of Cutaneous Pathology 2006; 33: 413-417.

In 1965, Rosai described two unusual pancreatic tumors containing osteoclast-like giant cell, with ultrastructural evidence of pancreatic acinar cell origin. Similar malignancies have been described in various organ systems, and these tumors have frequently been lethal. These malignancies typically contain sarcomatoid spindled cells as well as osteoclast-like giant cells. Several studies have suggested that at least the spindled cells are of epithelial origin. Some have suggested that the giant cell of are of histiocytic origin.

Two individual case reports have described SCC with osteoclast-like giant cells in the skin. Aljerian et al reported the first, a lesion of the cheek in a 42 yo. Immunosuppressed
man. This case also exhibited a rhabdoid component. The spindled and rhabdoid components were keratin positive, but the giant cell component was not. No recurrence was noted at 10 months follow up. Emanuel et al reported a poorly differentiated SCC of the lip of an 86-year-old male that also contained a component resembling giant cell tumor of bone/soft tissue. This later component was AE1/3 negative, and it was postulated that this was a reactive response. At Yale, we have seen two examples of aggressive SCCs of the scalp, each treated by Mohs surgery, with large defects necessary for complete removal, that later presented the nodules near the scar site composed of sarcomatoid spindle cells and osteoclast-like giant cells. In our laboratory, these cases were positive for keratins, when several keratin stains were performed, especially CAM 5.2. These cases appear to represent sarcomatoid de-differentiation of SCC.


Metastatic carcinoma may be confused with a wide variety of sclerosing cutaneous neoplasms. The significant majority of cases are metastatic breast carcinoma. Some examples of metastatic carcinoma may show few tumor cells in association with abundant fibrosis. The tumor cells may appear fibroblast-like or even resemble a dermatofibroma. The nuclei are often elongated, large, angular and basophilic. The tumor cells may exhibit a single cell or “Indian file” pattern. As in the case with S100 and melanocytic lesions, it is often helpful to order a keratin stain in the differential diagnosis of sclerosing neoplasms, so as not to miss a metastatic carcinoma.

CASE PRESENTATION:

93 yo male, Right posterior thigh. “? T-Cell; B-Cell infiltrate vs. other”

Histopathology, Immunohistochemistry:

- Monomorphous infiltrate of cells with very high N/C ratio
- Diffuse, nearly patternless arrangement
- CD56 positive, negative for T and B cell markers
- Focal, subtle nuclear molding
- Chromatin slightly salt and pepper-like

The history above is exactly as I received it, suggesting lymphoma. This is actually a case of a “lymphomatoid” (or “lymphosarcomatoid”) carcinoma. An initial battery of stains included negative B cell markers, negative T cell markers and positivty for CD56, suggesting natural killer (NK) cell lymphoma. Additional study revealed subtle nuclear molding and salt and pepper chromatin. Additional staining revealed positivity for Cam 5.2 and CK20.
It is important to note that CD56 labels natural killer (NK) cell lymphomas and neuroendocrine tumors such as Merkel cell carcinoma (MCC). In MCC altered by crush artifact or obscured by lymphocytes, histologic features and CD56 positivity can lead to an erroneous impression of NK-cell lymphoma.

In classic examples, the histologic diagnosis of MCC is straightforward. The combination of a small blue cell tumor with nuclear molding, salt and pepper chromatin and paranuclear dot-like positivity for immunohistochemical markers, including CK20 and CAM5.2, enable definitive diagnosis. Recently, CD56 staining was reported to be more sensitive than CK20 staining in 25 cases of MCC (100% cases labeled with CD56 compared to 89% with CK20). As such, CD56 can also be employed to label MCC, although positive staining does not exclude neuroendocrine carcinoma metastatic to the skin.

Crush artifact and loss of cellular cohesion can lead to a histologic impression of malignant lymphoma. In these cases, CD56 positivity may be noted in conjunction with absence of staining for CD3 and/or CD20, suggesting a diagnosis of NK-cell lymphoma. Because CD56 tends to label cell membranes in MCC, in contrast to the dot-like paranuclear pattern seen with cytokeratin staining, the diagnosis of MCC may not be immediately obvious.

It is important to remember that CD56 will stain both MCC and NK-cell lymphomas diffusely. Cytokeratin stains are not always added to a panel of presumed lymphoma, and pankeratin alone is unreliable in excluding MCC, since antibodies directed against high molecular weight keratins (such as DAKO pankeratin) typically do not label MCC. Therefore, consideration of the diagnosis of MCC in this setting is crucial. Cytokeratin markers CAM5.2 and MNF116 show excellent sensitivity for detecting MCC, while CK20 adds specificity with good sensitivity.

References:

