MELANOMA AND MELANOCYTIC NAEVI

LOSS OF MELANOCYTIC MARKERS IN A CUTANEOUS PRIMARY MELANOMA WITH RETENTION OF MELAN-A AND HMB-45 IN THE SENTINEL LYMPH NODE

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Background: Melanomas tend to lose melanocytic antigens, such as S100, Melan-A, and HMB-45, as they metastasize into lymph nodes. However, cases in which melanocytic markers are lost in primary melanomas but retained in lymph node metastases are extremely rare and can lead to diagnostic uncertainty. Immunohistochemical(IHC) staining is a widely-used, complementary technique for the elucidation of differential diagnoses, when there is ambiguity in clinical and histological indications.

Observation: A 64-year old male with history of multiple basal cell carcinomas presented with a 1-month history of a 9mm papule with thick hemorrhagic crust on his right upper chest. Biopsy of the primary lesion identified round and spindle pleomorphic cells, with large polyploid nuclei and amphophilic cytoplasms in the dermis. Mitotic index: 210/mm2, Clark's level: III-IV, Breslow depth: 1.65mm. Based on the histological findings, the differential diagnosis was a de-differentiated malignant melanoma(StageIIIC-T2bN3M0) versus collision tumor of atypical fibroxanthoma/superficial dermal pleomorphic sarcoma. However, melanocytic markers S100, Melan-A, and HMB-45 were negative in primary melanoma cells. Patient underwent right axillary sentinel lymph node biopsy(SLN). Interestingly, the SLN stained positive for Melan-A and HMB-45 melanocytic markers in 1 of 3 nodes, solidifying the diagnosis of melanoma.

Key message: This report presents a case exhibiting a unique pattern of divergent differentiation in the expression of melanocytic makers, with a loss of melanocytic markers in the primary tumor and an apparent "gain" of expression of several melanocytic antigens in the lymph node metastases. We suspect the primary cell population metastasized to the lymph nodes early and rapidly, before antigen expression was lost. Meanwhile, tumor cells on the primary melanoma continued to swiftly evolve, shedding their markers and de-differentiating, leading to a lack of melanocytic markers and confounding the diagnostic picture. This case highlights the possibility of aberrant immunophenotypic expression when the clinical and morphologic manifestations are inconsistent.