DERMAL SQUAMOMELANOCYTIC TUMOR: NEOPLASM OF UNCERTAIN BIOLOGICAL POTENTIAL

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Abstract

We report a case of exceedingly rare cutaneous neoplasm with histological features of malignancy and uncertain biological potential. The nodular, darkly pigmented facial tumor with central exulceration, size 12x10x7 mm, of the skin 61-year-old man preauricular left was completely exised.

Histologically tumor consists of atypical squamous cells, which express signs of moderate to significant pleomorphism, mitotically active, with foci forming of parakeratotic horn cysts („pearls"). Characteristically tumor also consists of large number of atypical melanocytes with multifocal pattern, inserted between atypical squamous cells, and which contain large amount of dark brown pigment melanin. Immunohistochemically, squamous cells stain positively with keratin (CK116), melanocytes were stained with S -100 protein, HMB 45, and vimentin, but failed to stain with CK 116.

To our knowledge this is the sixth reported case in world literature. The follow-up time of four years no evidence of recurrence or metastasis, similar all reported cases, but it is too short period in estimation to guarantee a benign course. However, it appears that this group of neoplasm may have different prognosis from pure squamous carcinoma or malignant melanoma.

KEY WORDS: squamomelanocytic, squamous cell carcinoma, malignant melanoma

Introduction

Malignant melanoma and squamous cell carcinoma most commonly arise on background of exposure to sunlight in somewhat similar patient populations (1). Recently, has been described in the pathology literature neoplasm with features of both malignant melanoma and squamous cell carcinoma (2,3) and named dermal squamomelanocytic tumor. Biphasic heterologous tumor with epithelial and melanocytic components is an exceedingly rare and present difficulty in diagnosis and histogenesis. Until now has been reported only five cases of this neoplasm. All reported cases were presented with brown or purple-black facial nodules measuring up to 10 mm in diameter. The age ranged in 44-87 years and there have been three males and two females in up to date documented cases (3). Follow-up information (mean 3,5 years) has shown no evidence of recurrence or metastasis (2). Independently, squamous cell carcinoma and malignant melanoma arise from the epidermis, while squamomelanocytic tumor may be presented as nodule in upper dermis independently of any epidermal connection (3). Although a precursor lentigo maligna or origin from the epidermis has been identified in one documented case (2). In all other cases tumor composed of intimately admixed malignant squamous cells and malignant melanocytes, in contrast to collision tumors in which these components are distinctly separate.

A case report:

A 61-year-old white male, with lesion that was surgically removed at the Clinics for Plastic and Reconstructive surgery. The lesion was completely excised; it was darkly pigmented, centrally ulcerous facial nodule, located preauriculary on the left side, of total dimensions 12x10x7 mm. No significant medical or family history was noted in the patient. There was no history of surgery or trauma at the site of the lesion. Microscopically, on low-power examination tumor was composed of en expansive dermal nodule with central defect (Figure 1.) Neighboring epidermis showed mild hyperkeratosis and acanthosis, consonant with chronic solar damage. No intraepidermal melanocytic atypia was present. High-power showed that tumor was composed of two cell types. Atypical squamoid cells with abundant eosinifilic cytoplasm in some place form squamous pearls and are admixed with undifferentiated epithelloid cells (Figure 2.).The second type of the cell was presented monomorphic, epithelloid cells which contain large amount of dark brown pigment melanin (Figure 3). Immunohistochemical stains showed biphasic profile: squamoid cells was strongly immunoreactive for keratin (wide-spectrum polyclonal antibody) cytokeratin 116 (Figure 4), and melanin-containing cells expressed S 100 protein, HMB 45 antigen and vimentin (Figures 5,6). In establishing final diagnosis we consulted the Institute for Oncologic Pathology Ljubljana, Slovenia (S. Grazio, M.D.) and Clinical Department of Dermatology, Medical University Innsbruck, Austria (B. Zegler, M.D.). After four years no evidence of recurrence or metastatic disease was found.

Discussion

Biphasic tumors with epithelial and melanocytic components are extremely rare. To our knowledge, this is the sixth description a case of dermal squamomelanocytic tumor, and up to date it has the biggest diameter. It is the only one with epidermal defect that more suggests ischemia due to the tumor growth that epidermal origin considering that the surrounding epidermis has regular features. These tumors show an intimate admixture of melanocytic and squamoid cells, in contrast to collision tumors in which there are distinctly separate components of melanocytic and epithelial cells (4). Epithelial tumors such as squamous cell carcinoma have been reported to arise adjacent to malignant melanomas; however, the two cell populations were not intimately admixed (5,6,7). Tumor in our case demonstrated two phenotypically distinct but architecturally inseparable components. Because of above stated collision tumor should be excluded. Occasional malignant melanomas aberrantly express keratin (8,9,10), but the pink plate-like cytoplasm and formation of squamous pearls by keratin-positive cells excludes the possibility that they represent melanocytes (10). However, the histological features of typical malignant melanoma including epidermal involvement was absent in our case and in all other cases. Furthermore, S 100 antigens, HMB 45 or vimentin are not specific for melanocytes, but they have not been reported in squamous cell carcinoma. The tumor cells may arise from a common precursor and show biphasic immunophenotypic differentiation. Cultan et al. reported a histologically undifferentiated tumor in which immunohistochemistry showed biphenotypia (11). Rosen at al. showed staining for S 100 protein and keratin in the some tumor cells (2). In our cases and all previous reported cases biphenotipa was absent (combined S 100/keratin positivity in the some cells). Biological behavior of this unique tumor is currently

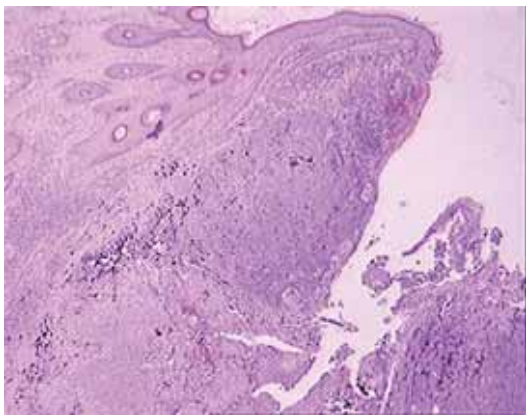

FIGURE 1. Big central defect of the tumor. HE, x 40

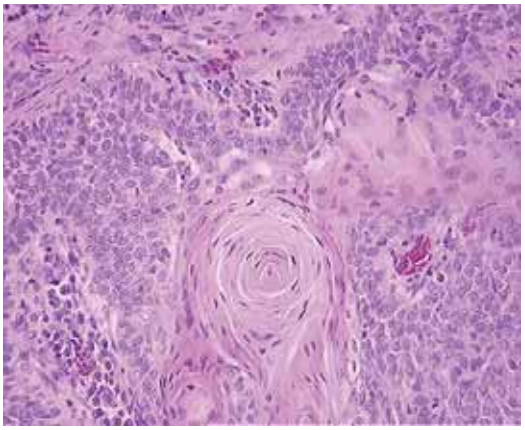

FIGURE 2. Atypical squamous cells form squamous pearls and are admixed with undifferentiated epitheloid cells. HE, x 250

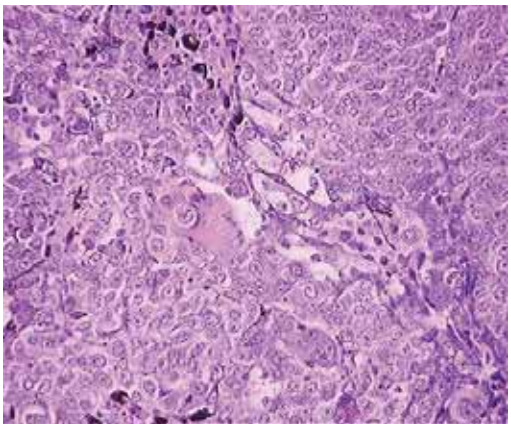

FIGURE 3. Malignant, epitheloid cytomorphology, some cells had melanin granule. HE, x 400

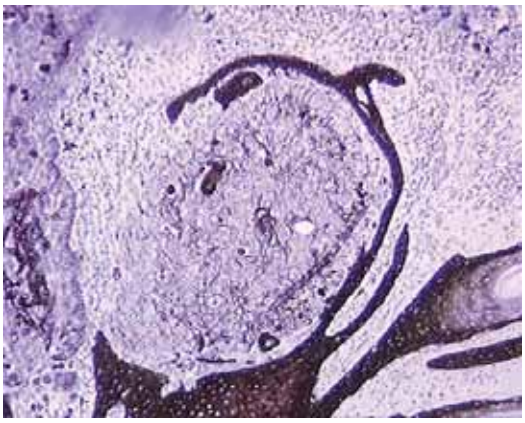

FIGURE 4. Strong positivity of epithelial components of the tumor. CK 116, x 100

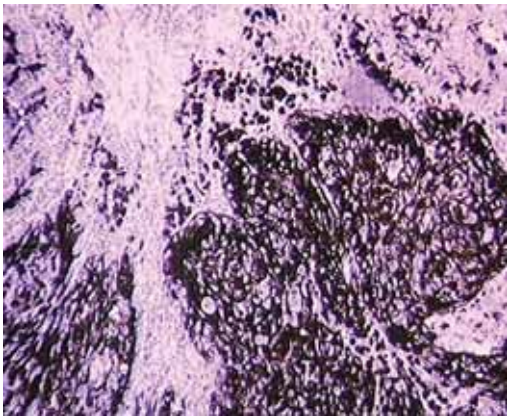

FIGURE 5. Single cells and islands of atypical melanocytes admixed with epithelial cells. HMB 45, x 100

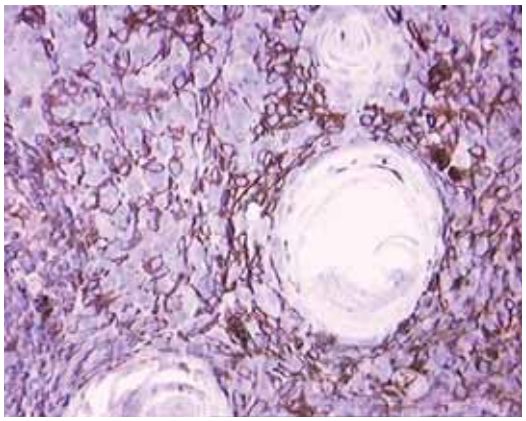

FIGURE 6. Vimentin positive undifferentiated cells intimate admixed with epithelial components, x 250

uncertain (3). Although all reported cases none have recurred or metastazed, the follow-up time is too short in estimation to guarantee a benign course. The finding of a baseomelanocytic tumor in a patient who subsequently develops a malignant melanoma at the same site and succumbs to metastatic malignant melanoma suggests that biphasic tumors may have a more aggressive biologic potential than previously known (12). Still remains unclear if similar behavior pattern can be valid for squamomelanocytic tumor.

Conclusion

The futures identification of this group of neoplasm and follow-up evaluation will be important to define their behavior.

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