International Journal of
Case Reports & Short Reviews

Case Report

Spitzoid Melanoma with Touton-Like, osteoclast-Like and Foreign Body Giant Cells in a 15-Year-old Girl -

Rafael Parra Medina[1,2], Tatiana Roncancio[3] and Samuel David Morales[1,2]*

[1]*Department of Pathology, National Institute of Cancer, Bogota, Colombia.*
[2]*Department of Pathology, Fundación Universitaria de Ciencias de la Salud, Bogota, Colombia*
[3]*Department of Genetics, National Institute of Cancer, Bogota, Colombia.*

***Address for Correspondence:** Samuel David Morales, Department of Pathology, National Institute of Cancer, Bogota, Colombia Cl, 1a #9-85, Bogota, Colombia Bogota, Colombia, Tel: +57 1 3341111; E-mail: sdmorales@cancer.gov.co

Submitted: 31 August, 2017; **Approved:** 25 October, 2017; **Published:** 28 October, 2017

Cite this article: Medina RP, Roncancio T, Morales SD. Spitzoid Melanoma with Touton-Like, osteoclast-Like and Foreign Body Giant Cells in a 15-Year-old Girl. Int J Case Rep Short Rev. 2017;3(4): 067-070.

ABSTRACT

Background: Melanomas with atypical histologic features are very rarely described in the medical literature and remain a potential diagnostic pitfall. Several unusual variants of malignant melanoma have been identified.

Case presentation: 15-year-old girl with a pigmented cutaneous lesion on the posterior aspect of her right leg with a four year history of progressive growth. Microscopic sections evidenced a malignant spitzoid melanoma with scattered giant cells.

Conclusion: Melanoma occurring during childhood is rare and it is exceptionally rare among children younger than 9 years, representing 1–3% of all pediatric malignancies. Only three cases of melanoma with Touton-like giant cells and seven cases with osteoclast-like cells in adult patients are acknowledged in medical papers. No other cases with more than two types of giant cells have been described.

Keywords: Spitzoid Melanoma; Giant Cell Melanoma; Touton-Like Giant Cell; Osteoclast-Like Cell; Foreign-Body Cell.

INTRODUCTION

Melanomas with unusual histologic features are very rarely reported in the medical literature and remain apotential diagnostic pitfall [1]. The major variants of melanoma include then odular melanoma, the superficial spreading melanoma, the acrallentiginous melanoma and the desmoplastic and/or neurotropic melanoma. Unusual variants of malignant melanoma are most infrequent, and manifest as, nevoid malignant melanoma, minimal-deviation melanoma, equine/animal-type melanoma and unusual cytomorphologic and phenotypic profiles of melanoma which may bemetaplastic, balloon, signet ring, myxoid, small cell, rhabdoid, psammomatous, and multinucleated giant cell melanomas [1].

Giant cell melanoma is uncommon and has been reported associated with Touton-like cells[2], osteoclast-like cells [3] and monster cells[4]. The case we present herein, a girl with a spitzoid melanoma with Touton-like, osteoclast-like and foreign-body giant cells. The present case is the first case identified in a children with the presence of this three types of cells.

CASE PRESENTATION

We present the case of a 15-year-old girl with an 8x8mm cutaneous pigmented lesion on the posterior aspect of the right leg with a four year history of progressive growth. An excisional biopsy from the lesion revealed a malignant melanoma. The patient had no other symptoms. No enlarged lymph nodes were found upon physical examination. Chest x-rays and abdominal CT scan did not show any alterations. A wide excision with clear resection margins was performed.

The hematoxylin and eosin sections of the punch biopsyspecimen revealed a dermoepidermalbased tumor with sheets and nests of enlarged epithelioid cells that did not mature in deep areas (Figure 1). A high degree of cytological atypia was present and contained increased Touton-like, osteoclast-like and foreign body type giant cells (Figure 2). Melanin pigment was absent. A malignant spitzoid melanoma measuring 2.4mm, exhibiting vertical growth and Clark's level IV, with no ulceration, mitotic index of less than 1/mm2, and nosatellitosis, lymph-vascular invasion, perineural invasion, tumor-Infiltrating lymphocytes or tumor regression, was diagnosed.

Immunohistochemical stains showed a diffuse positivity of the lesional cells for S-100, and displayed focal and weak staining for HMB-45 and Melan-A. The giant cells were positive for S-100 and exhibited weak focal staining for CD68. Ki-67 index was approximately 20%. PHH-3 showed some deep mitotic figures (Figure 3). A sentinel lymph node biopsy, obtained from the right groin, was negative for metastatic melanoma. The Fluorescence in Situ Hybridization (FISH) showed tetraploidy (Figure 4).

DISCUSSION

Melanoma occurring during childhood is rare and it is exceptionally rare among children younger than 9 years, representing 1-3% of all pediatric malignancies [5].It is not clear whether it differs from adult melanoma in it setiology and clinical progression. The clinical course is similar to adult melanoma although prognosis has been suggested to have a favorable course especially in prepubescent children and in adolescents [5,6]. Histopathologic prognostic factors include, the Breslow´s depth of the melanoma, presence of ulceration, mitotic rate, and presence or absence of lymph vascular invasion [5]. The risk of melanoma is higher in children with giant congenital melanocytic nevi, xeroderma pigmentosum, dysplastic nevus syndrome, atypical and numerous acquired melanocytic nevi, immunodeficiency disorders, or a family history of melanoma [7].

Our case is especially interesting due to the presence of a spitzoid melanoma exhibiting Touton-like, osteoclast-like and foreign-body

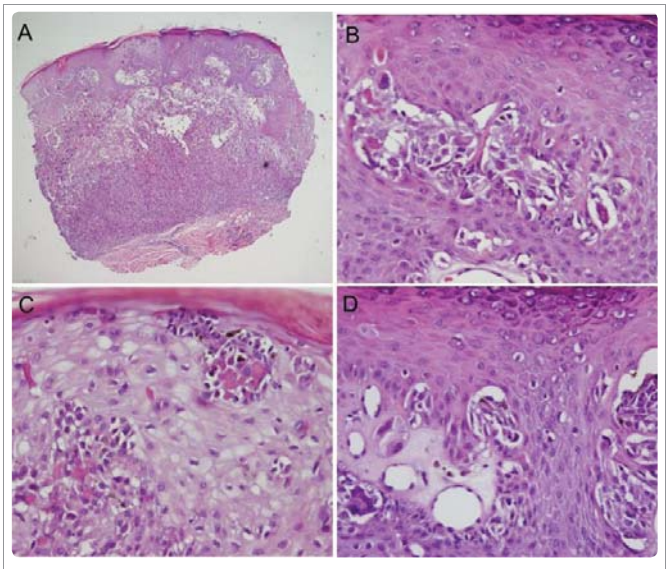

Figure 1: A. Asymmetric growth with extension into the deep dermis and focally into the hypodermis. B-C. Morphologic findings of Spitzoid melanoma: Isolated epithelioidcells in pagetoid growth and relatively large Kamino bodies within the epidermis (hematoxylin and eosin). Numerous apoptotic keratinocytes are also present.

giant cells. Guitart and Gerami [8] reported a case of a 4-year-old boy with a growing lesion on the left arm. The hematoxylin and eosin sections revealed Touton-like giant cells in a Spitz's nevus. In contrast, our case showed absence of maturation with conspicuous deep dermal mitotic and abnormal figures consistent with melanoma.

Previously reported cases of melanoma associated with Touton-like cells typically occurred in patients 70 years of age or older. One corresponded to an 88-year-old Caucasian woman with a1 cm amelanotic lesion on the left forearm [9] that presented as an atypical fibroxanthoma-like melanoma; the other two cases were, a xanthogranuloma-like melanoma in an 87-year-old man with a 3 x 3mm erythematous papule on his left upper eyelid [10] and a 70-year-old white man with a history of atypical nevi, squamous cell carcinomas, and a recent infiltrative and sclerosing carcinoma on the scalp [2]. Our case had no melanin pigment, as all the other cases. The Touton-like cells were seen scattered across the dermis and at the dermoepidermal junction and the atypical cells were seen at and above the dermoepidermal junction. The immunohistochemistry studies revealed diffuse staining for Melan A, HMB-45 and S-100,

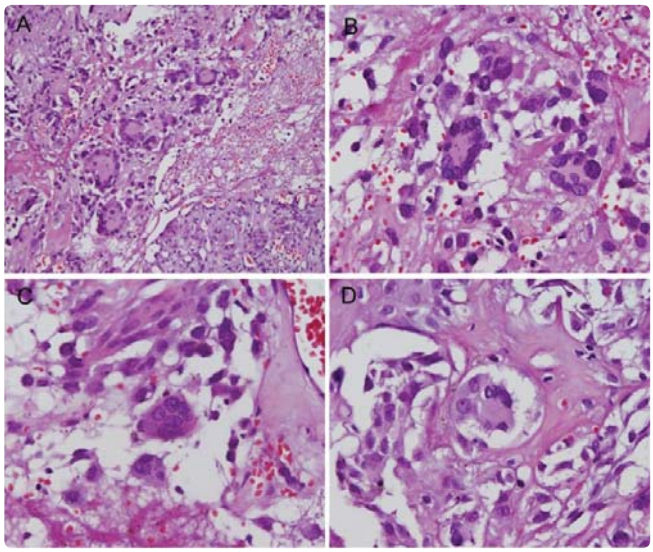

Figure 2: A-D. Scattered Touton-like, osteoclast-like and foreign-body giant cells along the biopsy. (hematoxylin and eosin).

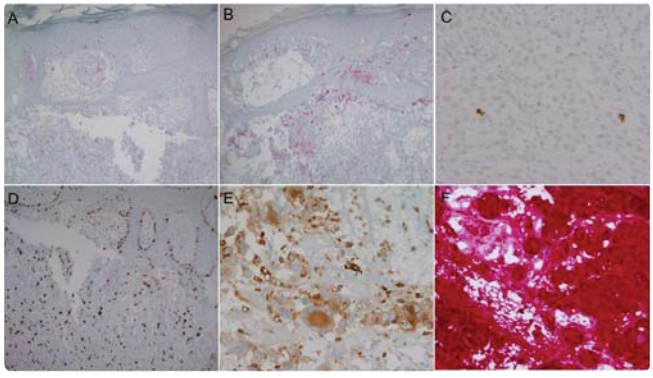

Figure 3: Immunohistochemical stains. A- B. Focal and weak staining for Melan-A and HMB-45 (red) C. PHH-3 showed some deep mitotic figures. D. Ki-67 index of 20%. E. Weak and focal positivity for CD68 in the giant cells. F. Positivity for S100 (red) of the tumor mass and also in the giant cells.

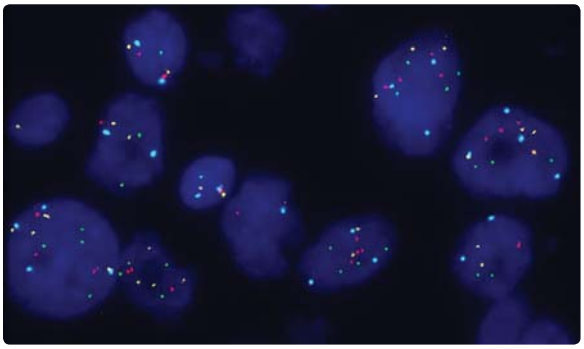

Figure 4: Fluorescence in situ hybridization.3 to 4 signals for RREB1 (6p25, red), MYB (6q23, yellow), CCND1 (11q13, green), and centromere 6 (aqua).

including the giant cells [2,9]. An additional difference with the aforementioned cases was that our case was a Spitzoid melanoma characterized by epithelioid cells, clefts between epidermal nests and large vesicular nuclei with prominent nucleoli.

Seven cases of melanoma with osteoclast-like cells have been reported [3,11-13]. Brahim and Salama acknowledged three cases. One in a 68-year-old female who presented with a 1.5cm skin pigmented lesion on the upper portion of the right thigh. The other cases were described in two male patients, an 81-year-old man who presented with an itchy pigmented nodule in the upper back and a 77-year-old man with a raised pale nodule on the scalp. Goel, et al [11], reported two cases, a 40-year-old male who presented with a mass arising from the right nasal cavity with a 3 month progression and a 50-year-old man who presented with a gradually increasing spherical swelling on the right foot. Immunohistochemistry revealed HMB45 and S100 expression in the conventional melanoma cells, while the osteoclast- like giant cells expressed CD68, but did not express melanocytic markers (HMB45, Melan-A, and S100). Just as the melanoma associated with Touton-like cells [9], two other cases with osteoclast- like giant cells resembled an atypical fibroxanthoma [3].

Immunohistochemistry is essential in confirming the diagnosis and excluding other malignant neoplasms that may exhibit similar morphology, particularly if melanin pigment is scarce or absent, or if an intra-epidermal component is lacking. The differential diagnosis includes other melanocytic lesions [8] and histiocytic lesions such as atypical fibroxanthomas, fibrous histiocytomas, necrobiotic xanthogranulomas, xanthelasmas, foreign body reaction, and Langerhans cell histiocytosis [14]. Touton-like giant cells are the prototypical sign of juvenile xanthogranuloma, these cells are large lipid-filled histiocytes with multiple nuclei in a wreath-like arrangement with a peripheral ring of foamy cytoplasm and a central area of non-foamy cytoplasm [15]. Other possible diagnostic considerations might include metastatic visceral carcinomas with giant cell features.

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