DERMATOLOGY PRACTICAL & CONCEPTUAL

www.derm101.com

Hypomelanotic melanoma detected by the "little red riding hood sign" in a patient with neurofibromatosis type 1

Roberta Giuffrida[1], Maximilian Uranitsch[2], Karin Schmid[3], Teresa Deinlein[2], Fabrizio Favero[2], Iris Zalaudek[2]

1 Department of Clinical and Experimental Medicine, Section of Dermatology, University of Messina, Messina, Italy
2 Department of Dermatology and Venereology, University of Trieste, Ospedale Maggiore, Trieste, Italy
3 Department of Physiology, Medical University of Graz, Graz, Austria

Key words: neurofibromatosis type 1, melanoma, dermoscopy

Citation: Giuffrida R, Uranitsch M, Schmid K, Deinlein T, Favero F, Zalaudek I. Hypomelanotic melanoma detected by the "little red riding hood sign" in a patient with neurofibromatosis type 1. Dermatol Pract Concept 2017;7(4):71-73. DOI: https://doi.org/10.5826/dpc.0704a14

Received: July 15, 2017; **Accepted:** August 28, 2017; **Published:** October 31, 2017

Funding: None.

Competing interests: The authors have no conflicts of interest to disclose.

All authors have contributed significantly to this publication.

Corresponding author: Iris Zalaudek, MD, Department of Dermatology and Venereology, University of Trieste, Ospedale Maggiore, Trieste, 34129, Italy. Tel. +43.676.33 282 69. Email: iris.zalaudek@gmail.com

ABSTRACT Neurofibromatosis type 1 (NF1) is a genetic disorder commonly associated with an increased risk for development of malignancy, including skin cancers.

Herein we describe a case of invasive melanoma occurring in a patient with NF1 and discuss the association between these two diseases, highlighting the importance of comparative clinical and dermoscopic approaches in this category of patients in which the detection of melanoma can be difficult because of the presence of multiple skin tumors.

Case Presentation

A 71-year-old Caucasian man with neurofibromatosis type 1 (NF1) attended our skin cancer clinic for routine dermato-oncologic follow up of primary multiple minimal invasive melanomas (melanoma stage IA) diagnosed during the past eight years.

Physical examination revealed the presence of numerous neurofibromas and café au lait spots on his trunk and limbs, as well as axillary freckles. In addition, a light brown nodule with a pinkish halo of 8 mm in diameter was noticed at the left lumbar region (Figures 1, 2). Although this lesion was clinically unremarkable, it differed somehow from the surrounding other nodules (i.e., revealing the so-called "little red riding hood sign") [1]. Upon dermoscopy, the central nodular part revealed brown-gray rhomboidal lines and white lines, whereas the pink halo exhibited small diameter, polymorphic microvessels and white crossing lines (Figure 3). Based on the dermoscopic appearance, as well as on the history of multiple primary melanomas, a clinical diagnosis of melanoma was suspected. The lesion was subsequently excised. Histopathological evaluation confirmed the clinical suspect of a focally

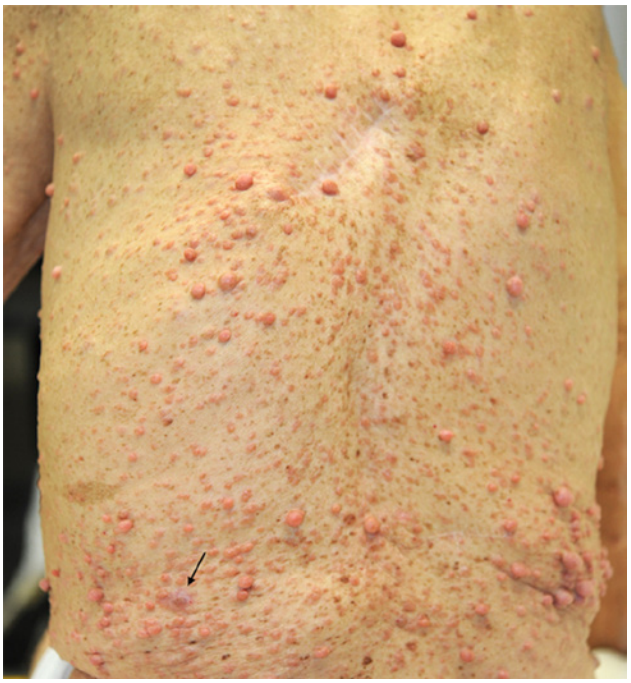

Figure 1. Numerous neurofibromas and one café au lait spot on the trunk. The black arrow indicates a light brown nodule with a pinkish halo. [Copyright: ©2017 Giuffrida et al.]

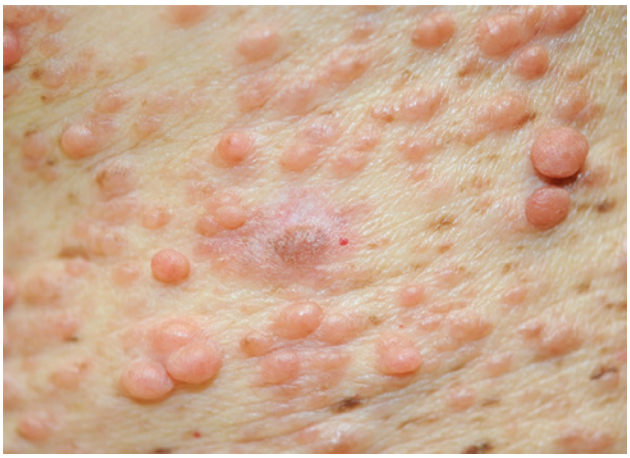

Figure 2. Close up of the lesion indicated by the black arrow in Figure 1. [Copyright: ©2017 Giuffrida et al.]

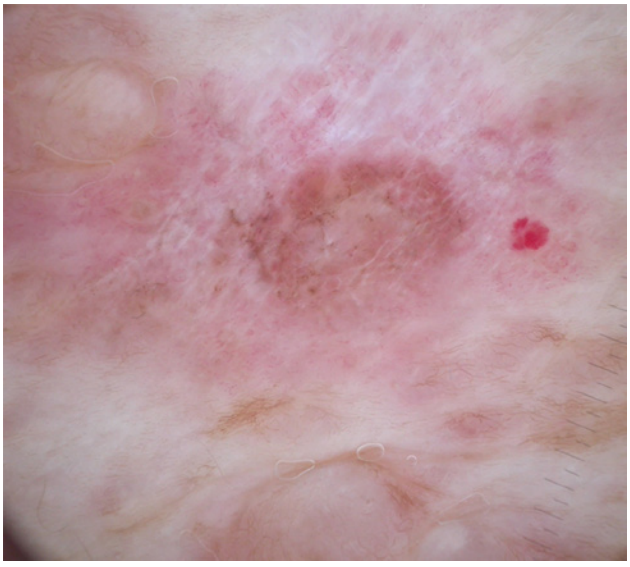

Figure 3. Dermoscopy displays brown-gray rhomboidal lines and white lines in the central part of the nodule and small diameter, polymorphic microvessels and white crossing lines in the pink halo; at the borders at 6 and 10 o'clock, two neurofibromas with structureless white to skin-colored areas are seen. [Copyright: ©2017 Giuffrida et al.]

regressive invasive melanoma (Breslow thickness 1.05 mm, pT2a). Imaging staging examinations revealed no evidence for metastases. The patient is currently scheduled for wide local excision and sentinel node biopsy.

Conclusion

Neurofibromatosis type 1 (NF1) is an autosomal dominant genetic disorder resulting from a mutation in or a deletion of the NF1 tumor suppressor gene on the long (q) arm of chromosome 17 that encodes a protein named neurofibromin 1 [2]. A mutated form of the latter leads to a predisposition for malignant neoplasms, most commonly derived from the neural crest [3]. Melanocytes are derived from embryologic neural crest, so these patients can develop malignant melanocytic proliferations [2,3]. Although several sporadic cases of patients with NF1 associated with melanoma have been reported in literature, the relationship between NF1 and melanoma is still a matter of debate [4].

Our case supports such an association, given that our patient suffered from seven multiple primary melanomas. Moreover, our case highlights the benefit of the comparative approach in patients with multiple skin tumors, as the melanoma in our patient, albeit not evident, differed from the surrounding neurofibromas [5]. Finally, dermoscopy pointed towards the correct diagnosis of hypo- and amelanotic melanoma by allowing the visualization of melanoma-specific features such as brown-gray lines, white lines and polymorphic vessels. Until future research reveals new insights into a potential common pathogenesis of NF1 and melanoma, we propose close follow-up dermatological visits of patients affected by NF1.

References

1. Mascaro JM Jr, Mascaro JM. The dermatologist's position concerning nevi: a vision ranging from "the ugly duckling" to "little red riding hood." *Arch Dermatol*. 1998 Nov;134(11):1484-1485.
2. Kiuru M, Busam KJ. The NF1 gene in tumor syndromes and melanoma. *Lab Invest*. 2017 Feb;97(2):146-157.

3. Guillot B, Dalac S, Delaunay M, et al. Cutaneous malignant melanoma and neurofibromatosis type 1. *Melanoma Res*. 2004 Apr;14(2):159-163.
4. Hernández-Martín A, Duat-Rodríguez A. An update on neurofibromatosis type 1: not just café-au-lait spots and freckling. Part II. Other skin manifestations characteristic of NF1. NF1 and cancer. *Actas Dermosifiliogr*. 2016 Jul-Aug;107(6):465-473.
5. Gaudy-Marqueste C, Wazaefi Y, Bruneu Y et al. Ugly duckling sign as a major factor of efficiency in melanoma detection. *JAMA Dermatol*. 2017 Apr 1;153(4):279-284.