

Case Report

Cutaneous Melanoma: A Case Report of a Nodular Melanoma, One of the Most Aggressive Presentations and with the Worst Prognosis

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Abstract: Melanoma is a malignant melanocytic tumor that constitutes the sixth most frequent cancer in the general population and has a high capacity to produce metastasis [1]. Cutaneous melanoma is the most common subtype, accounting for 91% cases. Even though it is reported less frequently than basal cell carcinoma or squamous cell carcinoma, it accounts for 70% mortality due to cutaneous neoplasms [5]. Diagnosis begins with a complete skin examination. Dermoscopy is an excellent support tool that suggests the diagnosis of melanoma [2].

Keywords: Melanoma, cutaneous melanoma, nodular melanoma, metastases, dermoscopy.

INTRODUCTION

Melanoma is a malignant melanocytic tumor that constitutes the sixth most frequent cancer in the general population and has a high capacity to produce metastasis [1].

These tumors are malignant neoplasms of melanocytes, highly differentiated cells that are neural crest in origin and found in the epidermis and hair follicles. As they are derived from the neural crest lineage, melanomas have been found in areas where these cells migrate [2].

So, it can occur in skin, mucosa, meninges and choroid plexus but may also appear in unusual places such as the gastrointestinal tract [3, 4]. However, they are more commonly located on the skin and are the most lethal and aggressive form of cutaneous malignancy [2]. Cutaneous melanoma is the most common subtype, accounting for 91% cases. Even though it is reported less frequently than basal cell carcinoma or squamous cell carcinoma, it accounts for 70% mortality due to cutaneous neoplasms [5].

It is a heterogeneous cancer that varies in its clinical characteristics and genetic alterations. While general features like size can give clues to likely prognosis, histopathologic appearance remains the gold standard for assessing cutaneous melanoma. Numerous histopathologic subtypes have been described, but the most common are superficial spreading melanoma (SSM) (60–80%), nodular melanoma (NM) (15%) and lentigo maligna melanoma (LMM) (5–15%). Of these, NM has the poorest outcome [6].

OBJECTIVE

To communicate a case report of nodular melanoma, as one of the most aggressive presentations and with the worst prognosis of cutaneous melanoma, as well as the importance of timely detection.

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Clinical Presentation, Evaluation and Diagnosis:

The acronym ABCDE is commonly used to describe the typical melanoma lesion, wherein: A stands for asymmetry, B for irregular border, C for color variation within the lesion itself in addition to color variation as compared to the patient's other nevi, D for a diameter greater than 6 mm and E for an evolving lesion [7].

NM can present as rapidly enlarging papules or nodules and can lack some of the other characteristic features associated with other subtypes of melanoma, making the ABCDE's mnemonic less useful in their diagnosis. Rather, a modified Elevated, Firm, Growing (EFG) rule can be applied in the detection of NM, given that NM is elevated, firm on palpation, and rapidly growing [7].

NM are usually symmetric, uniform in color, have regular borders, and small diameters. Given their lack of characteristic features, NM may go undetected, leading to devastating consequences as their greater thickness portends a poorer prognosis. NM may also be *amelanotic or hypomelanotic*, further adding difficulty during diagnosis [2].

Diagnosis begins with a complete skin examination. Dermoscopy is an excellent support tool that suggests the diagnosis of melanoma. Nodular melanoma lesions can show blue-white veil and atypical vessels. Pigmented NM, in contrast to nodular non-melanoma lesions, can exhibit multiple brown dots, peripheral black dots/globules, irregular black dots/globules, homogeneous blue pigmentation, black color, and the presence of multiple colors. Other dermoscopic features suggestive of NM include the presence of polarizing-specific white lines and gray or blue-colored structures [2].

Surgery is the most effective treatment for melanoma in the early stages and lymphadenectomy may be necessary. Treatment of late-stage melanoma includes chemotherapy, cryotherapy, drug combinations, radiation therapy, tumor injections, tumor-inhibiting chemical agents, and vaccines [7].

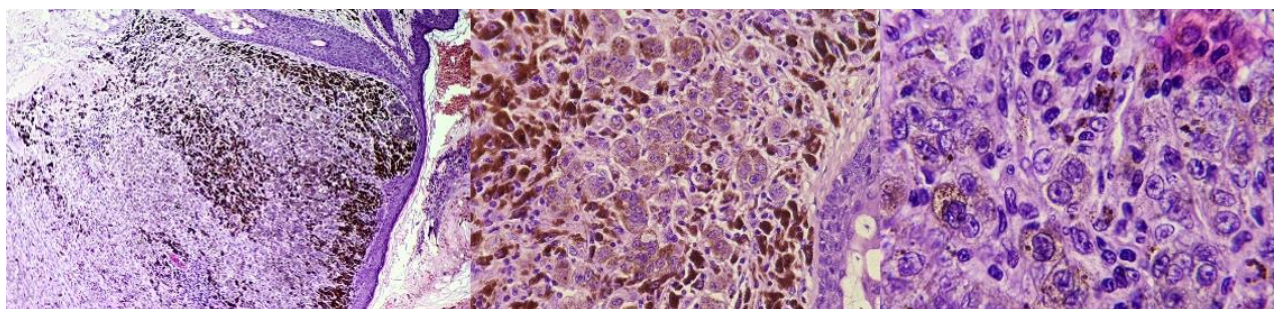
CASE REPORT

52-year-old female, 1 year of evolution with localized, unilateral dermatosis, in the middle third of the right lateral aspect of the neck, consisting of a single rounded, lobulated tumor, approx. 50-55 mm, blue-black color, exophytic, mobile, painless, some edges with irregularities in pigmentation, mild exudation with the presence of meliceric and hematic crusts (Figure 1) [8].

The histopathological report showed nodular, ulcerated melanoma, with depth of invasion (Breslow) of 2.2 mm, Clark level IV (reticular dermis), mitotic index of 12 mitoses in 10 HPF's, with abundant intramural lymphocytes and at the base of the lesion (Brisk), (Figure 2, 3 and 4).



Fig. 1



(Fig. 2) [8]

(Fig. 3) [8]

(Fig. 4) [8]

The patient was referred to tertiary care, where surgical resection was performed with complementary evaluation in search of invasion to other organs, ruling out metastasis.

DISCUSSION

Melanoma arises when melanocytes undergo malignant transformation of the dermal-epidermal junction. This malignancy may arise from a pre-existing nevus, but they more often arise de novo. Melanoma growth is typically divided into two stages, the first being the radial growth phase and the second being the vertical growth phase. The radial growth phase is characterized by a horizontal array of neoplastic melanocytes in an intraepidermal location, but can also involve the papillary dermis. The vertical growth phase is characterized by invasion of the dermis and formation of a tumor nodule. Histologically, NM, unlike other subtypes of melanoma, does not undergo an initial radial growth phase but rather begins to grow vertically, [2] as we can see in our patient's biopsy.

CONCLUSION

Cutaneous melanoma is epidermal neoplasia with the tendency to early invasion. The molecular diversity between various melanoma can significantly modify their outcome and their response to treatment. Despite the recent progress, the prevention of metastatic melanoma is a sphere still under study. The prognosis for patients with widespread metastasis remains poor; early detection requires the research of new tools for the prevention of this neoplasia [9].

It is important to exclude other differential diagnoses with histopathology and immunohistochemistry. The significance of establishing the diagnosis enables us to guide patients thoroughly for treatment. It is vital to get patients with the correct management and to the aggressive nature of this disease [10].

Melanomas produce lymphatic and hematogenous metastases, with a special predilection to lymph nodes, skin and subcutaneous tissue (42-57%), lungs (18-36%), liver (14-29%), brain (12 -20%), bone (11-17%) and intestines (1-7%) [11].

Also, in contrast to other subtypes, NM is more likely to arise in the absence of a pre-existing nevus. Thus, patient education should emphasize the detection of new-onset lesions in addition to evolving ones. As physicians, we may implement dermoscopy during diagnosis, and if we find a suspicious pigmented lesion, the patient should undergo an excisional biopsy to make early detection, provide adequate treatment and avoid metastases that modify the patient's prognosis and quality of life.

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REFERENCES

1. Revelo, S., Rubiero, L., Alzamora, H., Staudt, A., Nally, C., & Álvarez, D. (2022). Melanoma nodular amelanótico: a propósito de un caso. *Revista argentina de dermatología*, 103(3), 21-30.
2. Hernandez, L. E., Frech, F. S., Mohsin, N., Dreyfuss, I., & Nouri, K. (2021). Nodular melanoma: a review of pathogenesis, presentation, diagnosis, and treatment. *Journal of Dermatology and Skin Science*, 3(3), 25-30.
3. Brandão, M. Á. R., de Oliveira Rocha, B., Fernandes, J. D., & de Freitas, L. A. R. (2014). Melanocytes and melanoma etiology. *Open Access Library Journal*, 1(3), 1-7. <http://dx.doi.org/10.4236/oalib.1100666>

4. Strashilov, S., & Yordanov, A. (2021). Aetiology and pathogenesis of cutaneous melanoma: current concepts and advances. *International journal of molecular sciences*, 22(12), 6395. <https://doi.org/10.3390/ijms22126395>
5. Calderón, L., Peniche-Castellanos, A., Fierro-Arias, L., de Oca-Sánchez, G. M., & Arellano-Mendoza, I. (2017). Melanoma cutáneo: 12 años de experiencia. *Dermatología Revista Mexicana*, 61(3), 179-189.
6. Green, A. C., Viros, A., Hughes, M. C. B., Gaudy-Marqueste, C., Akhras, V., Cook, M. G., & Marais, R. (2018). Nodular melanoma: a histopathologic entity?. *Acta Derm Venereol*, 98(4), 460-462. doi: 10.2340/00015555-2855
7. Serna-Calderón, M. A., & Cervín-Báez, C. (2023). Nodular melanoma. Case report in images. *Revista Médica de la Universidad Autónoma de Sinaloa REVMEDUAS*, 13(2), 183-187. DOI <http://dx.doi.org/10.28960/revmeduas.2007-8013.v13.n2.007>
8. Rodríguez Trujillo, Ángela. *No title*. (Photos taken in the place) 2022.
9. Lombardo, M., Vigezzi, A., Ietto, G., Franchi, C., Iori, V., Masci, F., ... & Carcano, G. (2021). Role of vitamin D serum levels in prevention of primary and recurrent melanoma. *Scientific Reports*, 11(1), 5815. doi.org/10.1038/s41598-021-85294-3
10. Yee, G. W. Y., Gill, R. S., Kumarasamy, G., Rajesvaran, C., & Rajendran, S. (2023). Sino-Nasal Malignant Melanoma: A Case Report. *International Journal of Otolaryngology and Head & Neck Surgery*, 12(2), 61-68. doi.org/10.4236/ijohns.2023.122007
11. Navarrete, D. A. (2023). Melanoma nodular con metástasis cerebrales. *DERMATOLOGÍA REVISTA MEXICANA*, 67(6), 911-916.