

M. Voloshynovych<sup>1</sup>, T. Boichuk<sup>2</sup>, N. Matkovska<sup>1</sup>, V. Tkach<sup>1</sup>,  
V. Voloshynovych<sup>1</sup>, N. Kozak<sup>1</sup>

## A case of superficially spreading melanoma associated with an intradermal nevus

<sup>1</sup>Ivano-Frankivsk National Medical University, Ukraine

<sup>2</sup>Lux Skin, Ivano-Frankivsk, Ukraine

Received 14.02.2024

Accepted for publication 16.02.2024

DOI: 10.32471/clinicaloncology.2663-466X.53-1.31796

The way melanomas appear has been of considerable interest to researchers for many years. At the current stage of research, the data indicating that this tumour arises *de novo*, rather than as a result of transformation of a pre-existing skin lesion, are overwhelming. Therefore, cases of melanoma-associated nevi are of considerable clinical and diagnostic interest. The vast majority of such tumours are associated with various types of pigmented nevi, while there are only isolated sporadic descriptions of the transformation of intradermal nevi into melanoma. The publication presents a clinical case of this rare pathology. There are data from clinical examination and dermoscopic examination. The lesion was excised within healthy tissue. Pathohistological study of the material was carried out. The diagnosis of superficially spreading melanoma against the background of intradermal nevus was confirmed. Melanocytes from the epidermis spread into the papillary and reticular layers of the dermis to a maximum depth of 1.4 mm. To clarify the depth of invasion, immunohistochemistry was performed, Breslow 1.0 mm. To exclude microsatellite metastases, re-excision of the site of the previous intervention was performed. The pathohistological structure of the material was typical for a postoperative scar, no signs of tumour growth were detected. The complex visual and dermoscopic structure of associated melanomas can lead to misdiagnosis. The deep location of the primary lesion requires the use of immunohistochemistry to determine the thickness of the tumour. High-quality diagnosis directly affects the further management of the patient.

**Key words:** melanoma; naevus; dermoscopy.

### INTRODUCTION

The way melanomas appear has been of considerable interest to researchers for many years. At the current stage of research, the data indicating that this tumour arises *de novo*, rather than as a result of transformation of a pre-existing skin lesion, are overwhelming. Therefore, cases of nevus-associated melanomas (NAMs), the incidence of which, according to the results of many multicentre studies, ranges from 20 to 30%, are of considerable clinical and diagnostic interest [1–3].

A statistical analysis of the information indicates that NAMs occur more often in young people, in the trunk area, and are usually represented by a smaller tumour thickness according to Breslow [4].

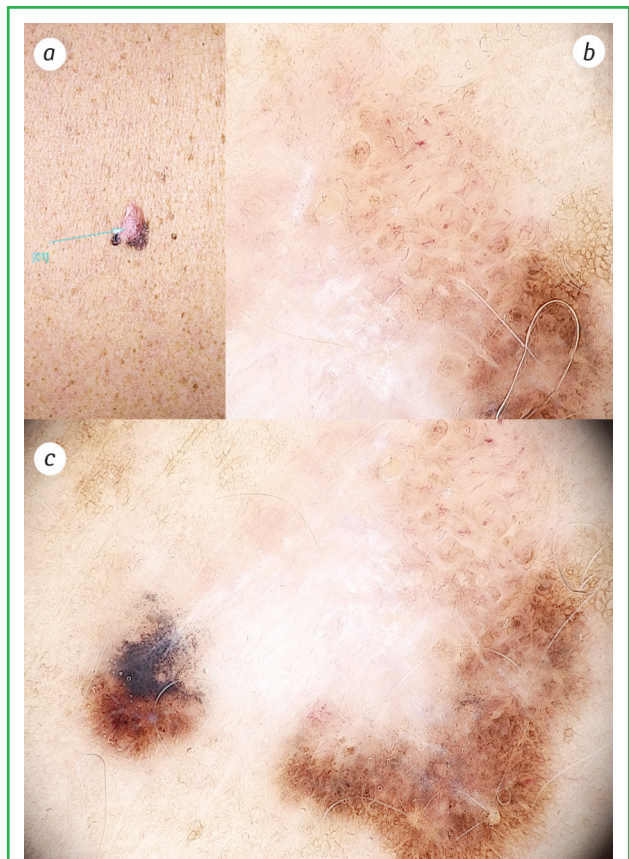
However, the vast majority of NAMs are associated with various types of pigmented nevi, while there are only a few sporadic reports of the transformation of intradermal nevi into melanoma [5–7].

### CASE SYNOPSIS

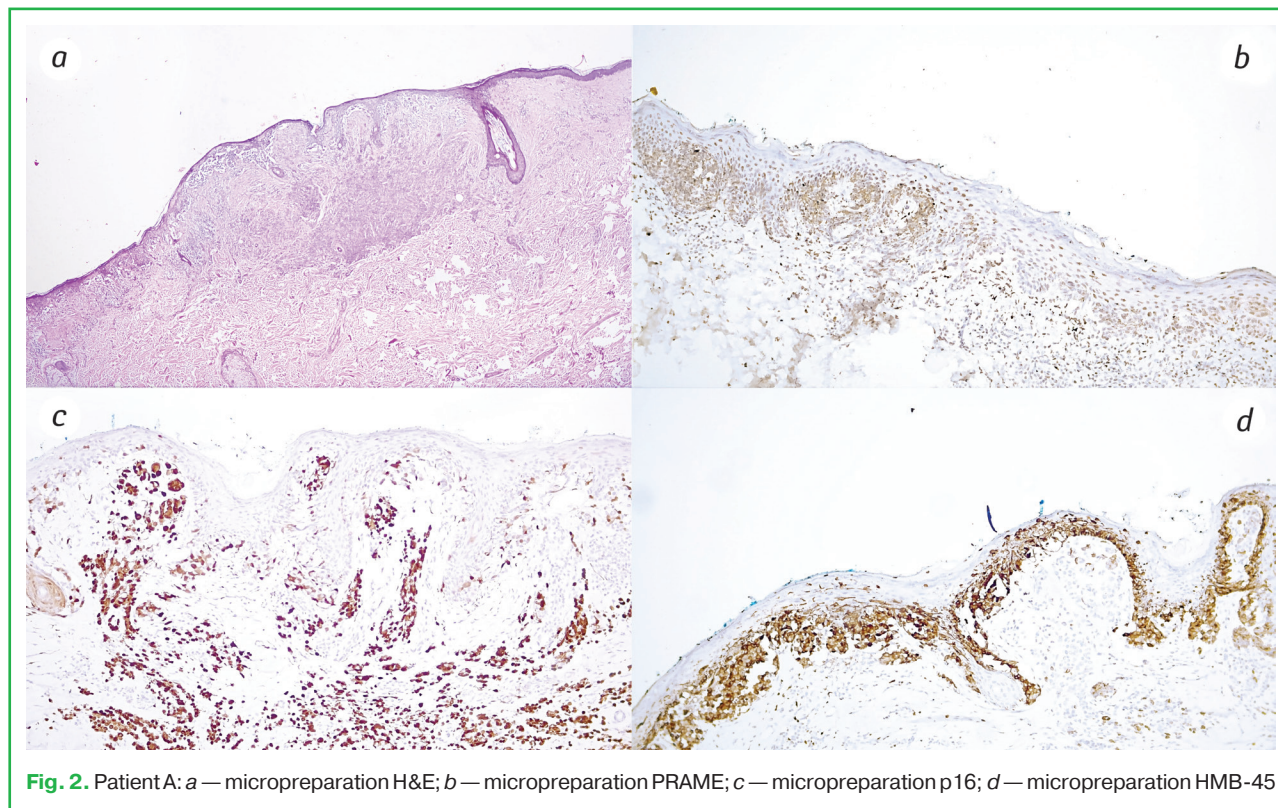
Patient A, 43 years old, consulted a dermatologist with complaints of papillomas on the hands. She had Fitzpatrick skin phototype 2, a history of melanoma in blood relatives, and a history of repeated sunburns. A routine examination of the skin surface revealed a solitary papular rash on the left shoulder blade with a heterogeneous colour (Fig. 1a).

Digital dermoscopy with photofixation (FotoFinder Medicam 1000s camera in polarisation mode) was performed. Due to the complex appearance of the lesion, an ultrasound gel was additionally applied to the skin surface. The lesion is heterogeneous, with convex (Fig. 1b) and flat parts (Fig. 1c).

The tumour was excised within healthy tissue. A pathohistological study of the material was carried out. The diagnosis of superficially spreading melanoma against the background of an intradermal nevus was confirmed. Melanocytes from the epidermis spread into the papillary and reticular layers of the dermis, to a maximum depth of 1.4 mm (Fig. 2a). To clarify the depth of invasion,



**Fig. 1.** Patient A: a — marker 01. Solitary papular rash on the left scapula; b — convex part of the lesion. Dermoscopy. 20x Polarisation and ultrasound gel; c — flat part of the lesion. Dermoscopy. 20x Polarisation and ultrasound gel



**Fig. 2.** Patient A: a — micropreparation H&E; b — micropreparation PRAME; c — micropreparation p16; d — micropreparation HMB-45

immunohistochemistry was performed (PRAME, p16, HMB-45) — Clarks Level 4, Breslow stage II (1.0 mm) (Fig. 2b–2d).

To exclude microsatellite metastases, the site of the previous intervention was re-excised. The pathohistological structure of the material was typical for a postoperative scar, and no signs of tumour growth were detected. The patient is under the supervision of a family doctor and undergoes periodic follow-up examinations by a dermatologist.

### CASE DISCUSSION

In the case of NAMs arising from an intradermal nevus, the thickness of tumours may be incorrectly determined due to the deep location of the primary lesion, and the presence of a convex part of the tumour leads to a false diagnosis of nodular melanoma.

The complex dermoscopic structure requires detailed consideration. The papular part, where vascular elements are observed in the centre of the skin-coloured parts, is suggestive of an intradermal nevus, but such vessels visible on an erythematous background can also be observed in melanoma (Fig. 1b) [8]. The central area contains multiple white lines and single vascular inclusions, which may have arisen as a result of scarring or tumour regression. On the periphery, the pigment grid of a typical nevus structure is interspersed with areas of grey-blue and brown structureless zones, pigment inclusions, branched lines, and negative pigment grid, which are signs of dysplasia (Fig. 1c). In this case, in addition to the heterogeneous structure, the signs of NAMs may include areas of negative pigmentation and, structureless brown zones, which are more common in transforming lesions rather than *de novo* [9].

### CONCLUSION

NAMs are usually associated with different types of pigmented nevi, whereas the transformation of intradermal nevi into melanoma is a rare case. Complex visual and dermoscopic structure can lead to a false diagnosis. Deep location of the primary lesion requires the use of immunohistochemistry to determine the thickness of the tumour. High-quality diagnostics directly affects the further tactics of patient management.

### REFERENCES

- Wiggins, J., & Polsky, D. (2021). Melanoma origins: data from early-stage tumours supports *de novo* and naevus-associated melanomas as distinct subtypes. *The British Journal of Dermatology*, 185(1), 9–10. doi.org/10.1111/bjd.20396.
- Dessinioti, C., Befon, A., & Stratigos, A. J. (2023). The association of nevus-associated melanoma with common or dysplastic melanocytic nevus: A systematic review and meta-analysis. *Cancers*, 15(3), 856. doi.org/10.3390/cancers15030856.
- Dessinioti, C., Geller, A. C., & Stratigos, A. J. (2022). A review of nevus-associated melanoma: What is the evidence? *Journal of the European Academy of Dermatology and Venereology: JEADV*, 36(11), 1927–1936. doi.org/10.1111/jdv.18453.
- Dessinioti, C., Geller, A. C., Stergiopoulou, A., Dimou, N., Lo, S., Keim, U., ... Stratigos, A. J. (2021). A multicentre study of naevus-associated melanoma vs. *de novo* melanoma, tumour thickness and body site differences. *British Journal of Dermatology*, 185(1), 101–109. doi.org/10.1111/bjd.19819.
- Drvar, L., Radoš, D., Manola, J., Mataić, I., Dotlić, A., & Krušlin, S. (2023). Melanoma Developing from an Intradermal Nevus: Report on Two Patients. *Acta Dermatovenereol Croat*, 31(1), 40–42.
- Arjona-Aguilera, C., Gil-Jassogne, C., Jiménez-Gallo, D., & Albarrán-Planelles, C. (2015). Melanoma intradérmico asociado a nevo melanocítico intradérmico. *Actas Dermo-sifiliográficas*, 106(9), 776–777. doi.org/10.1016/j.ad.2015.04.016.
- Nakai, N., & Katoh, N. (2015). Melanoma arising from the epidermis overlying an acquired intradermal nevus on the forehead. *Indian Journal of Dermatology, Venereology and Leprology*, 81(5), 533. doi.org/10.4103/0378-6323.158653.
- Rosendahl, C. (2023). *Marozava Dermatoscopy and Skin Cancer: A handbook for hunters of skin cancer and melanoma*. Scion Publishing, Updated edition, 686.
- Reiter, O., Kurtansky, N., Nanda, J. K., Busam, K. J., Scope, A., Musthaq, S., & Marghoob, A. A. (2021). The differences in clinical and dermoscopic features between in situ and invasive nevus-associated melanomas and *de novo* melanomas. *Journal of the European Academy of Dermatology and Venereology: JEADV*, 35(5), 1111–1118. doi.org/10.1111/jdv.17133.

### Випадок поверхнево-поширеної меланоми, асоційованої з внутрішньодермальним невусом

М. Волошинич<sup>1</sup>, Т. Бойчук<sup>2</sup>, Н. Матковська<sup>1</sup>, В. Ткач<sup>1</sup>,  
В. Волошинич<sup>1</sup>, Н. Козак<sup>1</sup>

<sup>1</sup>Івано-Франківський національний медичний університет, Україна

<sup>2</sup>ТОВ «Люкс Скін», Івано-Франківськ, Україна

**Резюме.** Шлях розвитку меланом представляє значний інтерес для дослідників уже багато років поспіль. На сучасному етапі вивчення превалюють дані, котрі вказують на розвиток цієї пухлини *de novo*, а не внаслідок трансформації попередньо існуючого на шкірі утворення. Тому випадки невус-асоційованих меланом представляють значний клінічний та діагностичний інтерес. Переважна частина таких пухлин пов'язані з різними типами

пігментних невусів, тоді як стосовно трансформації внутрішньодермальних невусів у меланому є лише поодинокі спорадичні описи. У публікації представлено клінічний випадок такої рідкісної патології. Дані клінічного огляду та дермоскопічного обстеження. Утворення висічене в межах здорових тканин. Проведене патогістологічне дослідження матеріалу. Підтверджено діагноз меланоми з поверхневим поширенням на тлі внутрішньодермального невуса. Меланоцити з епідермісу поширюються в сосочковий та ретикулярний шари дерми на максимальну глибину до 1,4 мм. Для уточнення глибини інвазії виконана імуногістохімія за Breslow 1,0 мм. Для виключення мікросателітарних метастазів виконано повторне висічення в ділянці попереднього втручання. Патогістологічна будова матеріалу типова для післяопераційного рубця, ознак пухлинного росту не виявлено. Складна візуальна та дермоскопічна

будова асоційованих меланом може стати причиною хибної діагностики. Глибоке залягання первинного утворення потребує використання імуногістохімії для уточнення товщини пухлини. Якісна діагностика безпосередньо впливає на подальшу тактику ведення хворого.

**Ключові слова:** меланома; невус; дермоскопія.

*Correspondence:*

*Marian Voloshynovych*

*16, Kropyvnyckoho, Ivano-Frankivsk, 76000, Ukraine*

*Ivano-Frankivsk National Medical University*

*E-mail: mvoloshynovych@gmail.com*

*Адреса для листування:*

*Мар'ян Волошинівич*

*76000, м. Івано-Франківськ, вул. Кропивницького, 16, Україна*

*Івано-Франківський національний медичний університет*

*E-mail: mvoloshynovych@gmail.com*