

The use of dermatoscopy to optimize the early diagnosis of skin melanoma

Malyshev Aleksandr Sergeevich

Medic

Riabtseva Veronika Vyacheslavovna

Medic

Center for Dermato-Oncology "NATEX", Krasnoyarsk

Annotation. The level of malignant neoplasms is growing every year, as a result, it is required for doctors of all specialties, experience, or auxiliary methods for early and intravital diagnosis of skin neoplasms. The technique of dermatoscopy is an integral part of equipping an office of a doctor of any specialty.

Keywords: dermatoscopy, melanoma, skin neoplasms

Relevance. Epiluminescence microscopy (ELM) (in vivo skin surface microscopy, light microscopy with oil immersion, dermatoscopy, dermoscopy) is an intravital, non-invasive technique that is increasingly used by dermatologists and oncologists in clinical practice. The most popular is the use of this method for the diagnosis of skin tumors.

Improvement of the analysis of pigmented formations of the skin of melanocytic genesis is dictated by the need for differential diagnosis of early stages of malignant melanoma with benign melanocytic neoplasms - nevi.

Melanoma is a malignant tumor of the melanocytic system, accompanied by rapid lymphogenous and hematogenous metastasis, a high mortality rate. [1] The share of melanoma in the overall structure of human malignant neoplasms is 1-3%, and the incidence rate doubles every 10-15 years.

Purpose of the study. To assess the possibility of using dermatoscopy for the differential diagnosis of skin neoplasms.

Materials and methods. ELM was performed with a DELTA 20 dermatoscope (HEINE, Germany) using binocular stereomicroscopy, which provides a tenfold magnification range. The dermatoscope was combined with a digital camera, which made it possible to document the image, its processing, providing the possibility of dynamic observation of patients with difficult-to-differentiate skin neoplasms.

Dermatoscopic examination was performed in 20 patients with skin neoplasms, of which 60% were benign melanocytic nevi, 25% - seborrheic keratoma, 10% - basal cell skin cancer, 5% - melanoma. Subsequently, patients with malignant neoplasms were sent to an oncological dispensary

for histological confirmation of the diagnosis.

The method is based on the so-called "ABCD dermatoscopy rule", which allows for a semi-quantitative analysis of changes recorded using ELM [2,3].

"A" - Asymetry. To determine this feature, the studied formation was visually divided along two asymmetrically advantageous lines; in the presence of asymmetry along two axes, the index was assigned 2. "B" - Border sharpness. To assess this feature, the neoplasm was visually divided into eight equal parts, each part having a clear border was assigned index 1. "C" - Color. There are 6 dermatoscopic colors light brown, dark brown, black, gray-blue, white, red. Index 1 was assigned to each color present in the area of the neoplasm. "D" - Dermoscopic structures. In the dermatoscopic picture, the following structural elements were distinguished: "pigment network", "stripes" ("radial radiance", "pseudopods"), "points", "granules", "unstructured areas", "blue - white veil", "regression structures", "Vascular structures"(areas of milky red, visualized microvessels). Each element, if present in education, was assigned an index of 1. The general dermatoscopic index (I_{derm}) was determined by the formula "A"+"B"+"C"+"D", where constant coefficients $A=1.3$ $B=0.1$ $C=0.5$ $D=0.5$. With a general dermatoscopic index from 4.75 to 5.45, the neoplasm is regarded as a dysplastic nevus, with a dermatoscopic index above 5.45, a preliminary diagnosis of skin melanoma was made with the patient's further referral for consultation with an oncologist.

Results. At the first stage of diagnosis, the melanocytic nature of the neoplasm was confirmed or excluded. For melanocytic pigmented formations, the following dermatoscopic signs were characteristic: "pigment network", "points", "granules", "branched stripes". At the second stage of diagnosis, the nature of the melanocytic formation (benign or malignant) was determined. For this purpose, the Stoltsa algorithm was used in this study. Dermatoscopic index values in patients with benign melanocytic neoplasms varied from 0 to 4.5. In a patient with suspected skin melanoma, the value of the dermatoscopic index was 6.4 (Tab. 1), in connection with which this patient was referred to the Regional Oncological Dispensary, where, after a histological examination, the presumptive diagnosis was confirmed.

Table 1

Dermatoscopic indices of patients with melanocytic skin neoplasms

	Melanocytic nevus	Melanoma
A (asymmetry)	0-1	2
B (border sharpness)	0-2	3
C (colour)	0-3	4
D (dermoscopic structures)	0-3	3
I_{derm} (dermatoscopic index)	0-4,5	6,4

Conclusions. The ELM method of malignant neoplasms is an effective method for the differential diagnosis of melanocytic neoplasms at the stage of clinical examination of patients.

References

1. Galil-Ogly G.A., Molochkov V.A., Sergeev Yu.V. Dermato-oncology. – Moscow: Medicine for All; 2005.
2. Steiner A, Pehamberger H, Wolff K. In vivo epiluminescence of pigmented skin lesions. II. Diagnosis of small pigmented skin lesions and early detection of malignant melanoma. *Am Acad Dermatol* 1987; 17: 584-591.
3. Nachbar F, Stolz W, Merkle T, et al. The ABCD rule of dermatoscopy. High prospective value in the diagnosis of doubtful melanocytic skin lesions. *J Am Acad Dermatol* 1994; Apr;30(4): 551-559.