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Dermatoscopic Criteria of Non-pigmented Basal Cell Carcinoma

Introduction. Basal cell skin cancer (BCC) is one of the most common human cancers, it constitutes about 70,0 % of keratinocyte tumors that comprise 90,0 % of all malignant skin diseases [2, 7]. The risk for Caucasian race individual to develop BCC varies between 33,0 and 39,0 % for men and 23,0 and 28,0 % for women. As a rule, the tumor grows slowly and is characterized by non-aggressive behavior, usually occurs in elderly patients, especially those who were frequently and intensively exposed to solar radiation. The tumor has slow progression and metastases are found in only 0,5 % of the cases [5], but it can result in considerable local destruction and disfigurement when treatment is neglected or inadequate. The BCC affects mainly photo exposed areas, in about 80 % of patients it appears on the head, and in half of them it affects the skin of cheeks and the nose [2]. Other photo exposed areas such as the trunk and the limbs are less affected and in about 4,0 % of patients lesions may appear on genitals and perianal area. Non-melanoma skin tumors are not included into the analysis of the International Agency for Research on Cancer (IARC) and are often not taken into account in routine analyses of cancer registers. The evaluation of the incidence is based on statistical data from different countries. Characteristics differ significantly from low in the regions with low level exposure to extremely high in tropical countries. BCC is the most common neoplasm in humans. Moreover, due to the long and non-aggressive trend the real incidence of this type of tumor is, probably, more than registered [6]. BCC has different clinical varieties and commonly lacks pigmentation that often causes diagnostic difficulty. Dermatoscopy as a simple non-invasive investigation technique for a long time takes an important place in the diagnosis not only of melanocytic tumors, but different non-pigmented neoplasms as well. Nevertheless, the dermatoscopic criteria for determining of non-pigmented basal cell carcinoma are promiscuous and require detalization and systematization. Another problem is metaphorical and subjective language for description of dermatoscopic picture.

The goal of the present study – definition and detalization of dermatoscopic criteria for non-pigmented basal cell carcinoma of the skin.

Materials and methods. During the three years study were revealed 75 cases of non-pigmented basal cell carcinoma in 58 men and 17 women aged from 47 to 80 years (mean age – 62 years). All patients were with I–II type of skin photosensitivity in accordance to Fitzpatrick. The diagnosis was exhibited on the basis of clinical, dermatoscopic picture and further cytological or histological studies. Dermatoscopic images were received due to DermLite 3 GEN DL3 connected to Sumsung Galaxy (Android) smartphone. The evaluation of dermatoscopic picture of different types of BCC was done in accordance with H. Kittler patten analysis algorithm [1].

Study results. Clinical varieties were presented as follows: 58 (77,3 %) were superficial, 15 (20,0 %) – nodular, 2 (2,6 %) – morphoeic. Clinical picture of superficial tumors was described as located mainly on the upper trunk or shoulders well-demarcated scaly erythematous plaques with central clearing and thread-like boarder, sometimes with bleeding and in all cases with slow non-aggressive growth over months or years. Nodular tumors were presented mainly on the face or head (91,0 %) and only in 9,0 % on the trunk as solitary, shiny, pearly or red nodules with large telangiectatic vessels, sometimes ulcerated. In the case of morphoeic variety the site, as a rule, was located in the middle part of the face as a rather big thickened yellowish plaque.

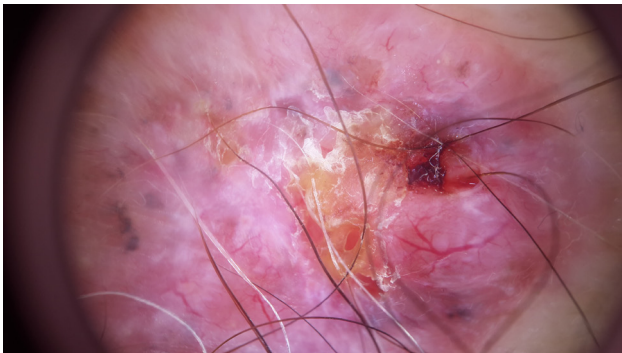
Dermatoscopic study of all cases was provided in accordance with H. Kittler pattern analysis algorithm which practically is more useful than other systems of evaluation as based on a logical structure, using simple, easily comprehensible, and clearly defined terms and avoiding fanciful descriptions and metaphoric terms.

The analysis of dermatoscopic features of non-pigmented basal cell carcinoma has shown that the most characteristic is the pattern of blood vessels. In the cases of superficial (fig. 1) clinical variety the pattern of vessels was monomorphic,

usually thin and serpentine, their arrangement in majority of cases was branchy. The polymorphous pattern of vessels represented by serpentine and coiled vessels was fixed as well. Clinical erythema dermatoscopic was described as red or pink structureless area. In the case of ulcerations or erosions (fig. 2) in the dermatoscopic picture they were presented as structureless area often with adherent fibers. The main additional features are randomly spaced white lines. In the case of nodular BCC (fig. 3) clinical variety the same dermatoscopic vessels pattern was fixed, by type the vessels were monomorphic – serpentine and by arrangement – branched. Also white lines and structureless white area were noticed. The morphoeic variety differed with white structureless area and white lines.

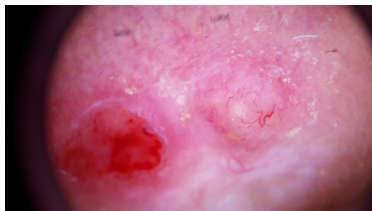


a



b

Fig. 1. Clinical (a) and dermatoscopic (b) images of superficial BCC.



a



b

Fig. 2. Clinical (a) and dermatoscopic (b) images of nodular ulcerated BCC.



a



b

Fig. 3. Clinical (a) and dermatoscopic (b) images of nodular BCC.

Conclusion. In patients with light skin types the non-pigmented forms of basal cell carcinoma are dominant; such forms are often described as pink pearl nodes or sites of erythema with desquamation and ulceration located mainly on the open photo exposed areas. In such cases the clinical diagnosis is often uncertain or implicates a variety of differential diagnoses. In this context, dermatoscopic features may be of primary importance. The main dermatoscopic criteria for the diagnosis of non-pigmented BCC is the pattern of blood vessels according to the existing literature. A further important hint in the diagnosis might be found in the presence of small ulcerations, which appear on dermoscopy as red to yellow or skin colored structureless area. The most consistent global pattern of vessels in all categories of non-pigmented BCCs was mono- or polymorphic pattern of vessels, which in the majority of cases was represented by serpentine and coiled vessels with branchy arrangement. Such a picture was observed in 92,0 % of our cases. Other additional features were structureless area often with adherent fibers and randomly spaced white lines. Our findings, regarding vessels are in accordance with the currently available literature [3, 4, 8]; some minor differences concerning the rates of vessels morphology are due to the lack of metaphoric terminology which is the main methodological disadvantage of dermatoscopy. It proves once again that in this situation an affordable and logical method based on the analysis of the pattern is urgently needed. Presented by H. Kittler algorithmic method based on pattern analysis fully meets these requirements and gives the possibility to establish the specific dermatoscopic criteria which are essential for early and accurate diagnosis of different BCC subtypes. Further studies are needed to evaluate the specificity and sensitivity of these dermatoscopic features.

LITERATURE

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Dermatoscopic Criteria of Non-Pigmented Basal Cell Carcinoma

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Basal cell carcinoma is one of the most common malignant tumors, which accounts for about 75 % of all skin cancers. Despite the fact that the characteristic manifestations of BCC are fairly typical, different clinical sub-varieties can vary greatly and require extended differential diagnosis. In recent years the dermoscopy plays an increasingly important role in the early and differential diagnosis of skin tumors. Although non-pigmented BCC is prevalent in individuals with light skin type, in the literature one can find only a small number of works studying the dermatoscopic criteria of non-pigmented tumors. The purpose of this work is the study of dermatoscopic criteria of non-pigmented BCC using the algorithm of H. Kittler. In the study of 75 cases of non-pigmented BCC the main dermatoscopic indicator for all clinical types was mono – or polymorphous vascular pattern, presented by serpentine vessels with branched arrangement, structureless areas, and as an additional criterion, white lines. The algorithm of H. Kittler gives a possibility to set specific indicators for early and differential diagnosis of all clinical sub-forms of BCC and avoid metaphorical subjective descriptions.

Keywords: basal cell carcinoma, dermoscopy, dermatoscopic criteria.

Дерматоскопічні критерії безпігментного базально-клітинного раку шкіри

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Базально-клітинний рак шкіри (БКР) – одна з найпоширеніших злоякісних пухлин, частка якої складає близько 75,0 % усіх випадків раку шкіри. Попри те що прояви БКР шкіри мають досить типові характеристики, різні клінічні форми можуть значно відрізнятися й інколи вимагають розширеної диференційної діагностики. Сьогодні щораз більшого значення в диференційній і ранній діагностиці новоутворень шкіри набуває дерматоскопія. Незважаючи на те що безпігментна форма БКР переважає у пацієнтів зі світлою шкірою, лише незначна кількість праць присвячена вивченню дерматоскопічних критеріїв безпігментної пухлини. Мета роботи – визначити дерматоскопічні критерії безпігментного БКР за допомогою алгоритму Г. Кітлера. Вивчення 75 випадків безпігментного БКР показало, що основними дерматоскопічними показниками у всіх клінічних формах є моно- або поліморфний судинний рисунок, представлений серпентинними судинами з розгалуженим розташуванням, безструктурні ділянки та білі лінії, як додатковий критерій. Алгоритм Г. Кітлера дає змогу з'ясувати специфічні показники для ранньої і диференційної діагностики всіх клінічних субформ БКР і уникнути суб'єктивних метафоричних описів.

Ключові слова: базально-клітинний рак шкіри, дерматоскопія, дерматоскопічні критерії.