Dermoscopy of melanoma

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SUMMARY

Early detection of malignant melanoma is one of the greatest challenges for dermatologists. Dermoscopy is an in vivo method for the early diagnosis of malignant melanoma and the differential diagnosis of pigmented lesions of the skin.
We report a 85-year-old man with a pigmented skin lesion in left mandibular region. Dermoscopy revealed evident characteristics of malignant melanoma. The total score was 7 points according to the 7-point checklist. Pathohistological examination confirmed diagnosis of melanoma.

KEY WORDS

dermoscopy, malignant melanoma, 7-point checklist

Introduction

Dermoscopy is a simple, and inexpensive diagnostic technique that permits the visualization of morphologic characteristics, not detectable by visual inspection, thus constituing a link between macroscopic clinical dermatology and dermatohistopathology. It is an in vivo method for the early diagnosis of malignant melanoma (MM) and for the differential diagnosis of pigmented skin lesions. Over the past years, dermoscopy has been known by a variety of names, including skin-surface microscopy, epiluminescence microscopy, incident-light microscopy, dermatoscopy, and videodermatoscopy. The term "dermoscopy", however, currently enjoys the international consensus. The Board of the Consensus Netmeeting agreed on a two-step procedure for the classification of pigmented lesions of the skin. The first step aims at differentation between melanocytic and nonmelanocytic lesions. In the case that the lesion is assumed to be of melanocytic origin, the step two is included to detect whether the lesion is benign, suspect or malignant. To accomplish this, four well-studied algorithms are commonly used: pattern analysis, the ABCD rule of dermatoscopy, Menzies scoring method, and the 7-point checklist (1).

All of the melanocytic algorithms include MM specific criteria. The 7-point checklist distinguishes 3 major criteria and 4 minor criteria (Table 1). Each major criterion has a score of 2 points, while each minor criterion has a score of 1 point. A minimum total score of 3 is required for the diagnosis of malignant melanoma.

Table 1. The 7-point checklist according to Argenziano et al (2).

Criteria	7-point score
Major criteria	
Atypical pigment network	2
Blue-white veil	2
Atypical vascular pattern	2
Minor criteria	
Irregular streaks	1
Irregular pigmentation	1
Irregular dots/globules	1
Regression structures	1

MM is a highly malignant tumor with an alarming increase in incidence over the last few decades. Melanoma incidence and mortality rates are influenced by gender and geography. In Europe, melanoma occurs at a higher frequency among women than in men, whereas in Australia and America the incidence is slightly higher in men (3). MM is very rare before the age of 20 (4). Melanoma is the second most common cancer in men aged 30-49 years and fourth most common cancer in men aged 50-59 (5). It is also the most common cancer in women aged 25-29 and second cancer in women aged 30-35 years (6).Early detection of malignant melanoma is one of the greatest challenges of dermatologists today. Dermoscopy has recently been proven as a valuable method for improving the clinical diagnosis of MM.

Case report

A 85-year-old caucasian men was referred for evaluation of his pigmented skin lesion in left mandibular region by digital dermoscopy. The personal and family history for dyspalstic nevi or melanoma was negative, except for a personal history of excessive sun exposure. Physical examination revealed a the total nevi count of more than 20. The freckle index was negative.

The Patient noticed a black pigmentation in his left mandibular region twenty years ago. The pigmened skin lesion was slowly spreading over the years. He didn't refer for skin examination till the moment we saw him. Fifteen days prior to the present examination the lesion exulcerated spontaneously. Clinical examination revealed an extensive, irregularly shaped black pigmentation in the left mandibular region, which was sharply demarcated from surrounding skin. Below the left ear an ulceration covered by a crust was present. Figure 1.

For ultrasound examination the high frequency (20 MHz) ultrasound equipment Dermascan C (Cortex technology, Denmark) was used. The echogram of the lesion showed a 0.37 mm thick entry echo, while the lesion itself was presented as nonechogenic dome-like formation with relatively clear borders and a vertical diameter of 4.32 mm. In the surrounding dermis there was a band-like hipoechogen shade poorly demarcated from the surrounding skin.

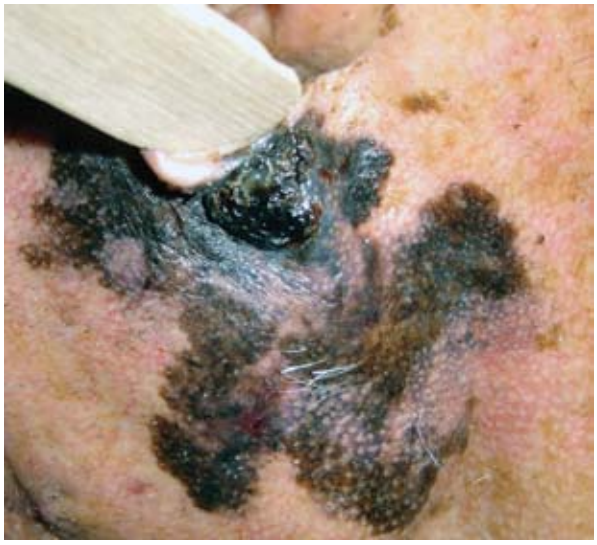

Figure 1. Malignant melanoma in our patient.

For dermoscopic analysis, the Dermlite photo on Nikon Coolpix 4500 photo camera (with 4.0 megapixels resolution) was used, and the obtained results were analyzed using the Mole Max software. Digital dermoscopic examination of the lesion demonstrated obvious melanoma-specific criteria: asymmetry of contours, color and structure, with atypical pigment network and

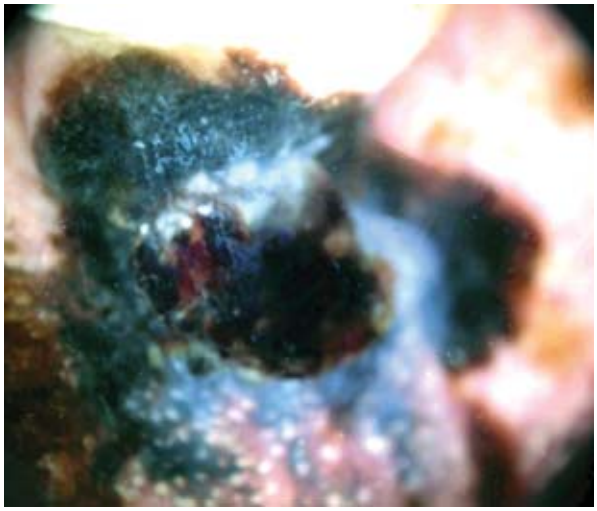

Figure 2. Dermoscopy of malignant melanoma.

vascular pattern. It also contained regression structures in central part of the lesion. Brown globules of different sizes were seen at right part of the lesion and a blue-whitish area was seen in central part of the lesion. Figure 2. This lesion was evaluated by digital dermoscopy, and using the 7-point checklist seven points were scored, corresponding to MM.

Since the diagnosis was melanoma, a biopsy was not performed, and entire area was excised. The histopathological analysis confirmed diagnosis of MM.

Discussion

The incidence of malignant melanoma has risen dramatically in recent years despite an increased awareness and a changed behavior pattern of patients (7). The early diagnosis of melanoma has always been real challenge for dermatologists and it will probably remain so, in the third millennium as well. In the recent years, the in vivo diagnosis of pigmented skin lesions by dermoscopy has improved the clinical approach to melanocytic neoplasms. Such diagnostic data support the just visual examination (8). The analysis of the obtained information is offering a significant contribution to the diagnosis of melanocytic, nonmelanocytic, benign, and malignant skin lesions (9-11). It raises the diagnostic accuracy of melanoma to 80% compared to about 65 % as obtained by the just visual assessement (12). Each of the established algorithms used to analyze melanocytic skin lesions includes melanoma-specific criteria.

In our case, asymmetry of contours, color and structures, atypical pigment network, vascular pattern, irregular brown globules, regression structures and blue-whitish area in central part of lesion demonstrated evidently dermoscopic criteria of MM. The minimum score of 3 points according to 7-points checklist is required for the diagnosis of MM, while in our patient the score was 7 points.Certain criteria can be seen in both benign and malignant lesions, however, no single criterion has a 100% value in the diagnosis of melanoma. In the case that melanoma specific criteria are identified, the lesion should be excised (13-15). Some lesions, especially early melanomas, may lack specific dermoscopic features and are difficult to diagnose even by dermoscopy (16). such nondiagnostic cases should undergo repeated assessments with a digital dermoscop.

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