Case Reports

Basal cell carcinoma miming cutaneous melanoma

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Abstract

In the last decades, the incidence of skin cancer is in continuous growth, but the mortality remains at the same level thanks to the new imaging diagnosis methods and surgical treatment. A real problem regarding differential diagnosis between cutaneous melanoma and non-melanotic skin tumor appear, despite advanced technologies, which have a major impact on treatment management. We reported two cases with clinical and dermoscopic aspects of cutaneous melanoma, sustained by positive lymphoscintigraphy. The histopathological exams established that the skin tumor was a pigmented basal cell carcinoma. In such difficult cases, the accuracy of diagnosis is certificated only by the microscopical examination with clinical, treatment and prognosis changes.

Keywords: cutaneous melanoma, basal cell carcinoma, sentinel lymph node biopsy, lymphoscintigraphy, surgical treatment.

Introduction

Cutaneous melanoma represent about 4% of skin cancer cases and is responsible for 90% of skin cancer deaths and incidence have been rising in past 30 years (1975–2005): from 8 to 22 cases/100 000/year in males and from 7 to 15 cases/100 000/year in females – numeric values for United States, according to the American Cancer Society. In Romania, the mortality due to the skin cancer in men and women age 20–44 years in periods 1985–1989 and 1995–1999 has a favorable trends for male: 0.87 to 0.85 and downward trends for women: 0.67 to 0.84. At the age 45 to 64 years, it records unfavorable trends both in male: 4.18 to 5.02 and in women: 2.29 to 2.73 [1].

Clinical diagnosis is positive in 60% of cases and includes a few clinical subtypes: superficial spreading melanoma, lentigo maligna melanoma, nodular melanoma, acral lentiginous melanoma, mucosal lentiginous melanoma, amelanotic melanoma [2]. Imaging diagnosis protocol includes: dermoscopy and computed dermoscopy, chest X-ray, computer tomography (CT), magnetic resonance imaging (MRI), sentinel lymph node biopsy (SLNB), positron-emission tomography (PET) and positron-emission tomography and computed tomography (PET/CT) [3].

Basal cell carcinoma

The most frequently skin tumor is aggressive by its local invasive potential and recurrence, but very infrequent metastases (0.5%). The incidence of basal cell carcinoma is also increasing in the last period at more than 10% in white population. Elderly population is more affected [4].

Typical clinical aspect is represented by the rodent ulcer with central ulceration and indurated borders and strong potential of deep tissue penetration, located especially on the head and neck (80%). Superficial basal cell carcinoma is a flat erythematous lesion on the trunk, with slow development. Nodulocystic clinical subtype is presented as a unique red nodule with a dilated network of vessel for elective on the face. The morphoeic basal cell carcinoma is considered the most aggressive form with ill-defined margins and large volume. The pigmented clinical subtype must to be differentiated from cutaneous melanoma.

Patients, Methods and Results

Tissue specimens were processed according conventional histopathological techniques, including paraffin, 3 µm section stained by Hematoxylin–Eosin (HE) in Department of Pathology of Emergency University Hospital of Bucharest.

Case No. 1

N.I., male, 54-year-old, with relative short term history (5 month) of pigmented lesion at the left mandibular region was presented in clinic after a dermatological consultation including and dermoscopy with presumptive diagnosis of ulcerated cutaneous melanoma (Figure 1) and a positive lymphoscintigraphy (Figure 2). Clinical aspect of tumor was represented by a pigmented ulcerated lesion of 2 cm diameter, with irregular borders and inflammatory reaction at the inferior border, located at submandibular region. Tumor was indurated, painless, infiltrated the surrounding tissue and also it was presented homolateral submandi-
bulary adenopathy. Preoperative, 1 mL of Vital Blue Dye was injected intradermally to help the lymph node mapping. Surgical treatment under general anesthesia consists in lesion excision with safety margins (Figure 3) and lymph nodes removal (Figure 4).

Histopathological exam revealed basaloid cells proliferation with peripheral palisading, with a few mitoses, hyperchromic nuclei, with small amount of cytoplasm, intra- and extracellular melanic pigment and disposed in nests separated by fine fibrovascular stroma. The tumor infiltrated papillary dermis, yet well-defined limits. The lymph node presented hyperplasic lymphoid follicles and sinusal histiocytosis (Figure 7). Final diagnosis established that skin lesion was pigmented basal cell carcinoma (Figures 5 and 6).

**Case No. 2**

P.C., male, 41-year-old, with relative long term (3 years) history of pigmented lesion on left laterothorax also with a positive dermoscopy was hospitalized in Plastic Surgery Department with presumptive diagnosis of superficial spreading cutaneous melanoma (Figure 8). The clinical aspect of tumor was represented by a flat erythematous lesion, of 4 cm diameter, with irregular border, with isolated vesicles and multiple small ulceration, with peripheral pigmented zones. Tumor
palpation revealed a soft, painless, superficial lesion. Local and regional lymph node could not be detected at clinically exam. The lymphoscintigraphy performed in order to detect sentinel lymph node was positive for anterior axillary lymph nodes (Figure 9). The cranio-cerebral and abdominal computer tomographies revealed absences of metastases while chest computer tomography found suspect mediastinum adenopathy. The level of S100 protein was in normal limits: 0.075 µg/L. Before operation, it was injected intra-dermally 1 mL of Vital Blue Dye to facilitate the identification of metastatic lymph nodes (Figure 10). Surgical treatment under general anesthesia consists in tumor excision with large limits (2.5–3 cm) in subfascial plane and axillary lymph nodes excision (Figure 11). During surgery, we found that the presumptive sentinel lymph node was enlarged, about 2 cm, but did not retain the blue dye. Histopathological aspects were represented by the basaloid, hyperchromic cells arranged in irregular nests, with a little melanic pigment and prominent fibrovascular stroma and young fibroblasts. Lymph node presented follicular hyperplasia and sinusal histiocytosis (Figure 14). Final diagnosis was basal cell carcinoma, pigmented subtype (Figures 12 and 13).

Two cases with pigmented skin tumor, which had a presumptive dermoscopic diagnosis of cutaneous melanoma and positive lymphoscintigraphy, were invalidating by the histopathological exam.
Discussion

Superficial spreading melanoma, the most frequent form, accounts 70% of total melanomas presented like a
an irregular and different color (dark-brown, red, white,
black) macula on the trunk in man and lower extremities
in women. Nodular melanoma represents 15% of
melanomas and is generally localized on the trunk with
clinical aspect of a blue-black nodule, which can be
ulcerated. Lentigo maligna melanoma accounts for 5%
of melanoma and appears on sun damaged skin areas,
on a precursor lesion: lentigo maligna. Clinically, it presents
asymmetrical wide spread pigmented macula which
grow slowly in few years. The main feature of this
clinical subtype is prolonged horizontal development of
melanoma in situ and so that an important number of
cases have a good prognostic after surgical excision.

Dermoscopy offers a 10–20-fold magnification, and
detected the early stage cutaneous melanoma, and in
the latest year’s dermoscopy prove very useful non-
detected the early stage cutaneous melanoma, and in the
detection of lesion when melanoma is curative. Even
radically melanoma prognosis thanks to the early
diagnosis between benign melanocyte tumors and
melanoma [5].

Dermoscopy is the imaging technique, which change
radically melanoma prognosis thanks to the early
detection of lesion when melanoma is curative. Even
dermoscopy improved melanoma diagnosis, still exist
false-positive results.

Dermoscopy should provide differential diagnosis
between pigmented basal cell carcinoma and other
suspicious pigmented skin lesion: melanoma, dysplastic
nevus blue nevus, congenital melanocytic nevus,
melanoma arising on congenital nevi or xeroderma
giganteum.

In 2008, Menzies SW et al. demonstrated a
sensitivity of 70% and specificity of 56% of differential
diagnosis of cutaneous melanomas from all non-
melanoma tumors [6].

Histopathology of basal cell carcinoma presents
multiple variants: nodular, superficial, micronodular,
infiltrating, basosquamous, fibroepithelial, cystic, infun-
dibulocystic, adenoid, sclerosing/morpheic, pigmented,
kertatic, with adnexal differentiation neuroendocrine,
schwannoid or clear cell subtype.

Pigmented basal cell carcinoma represents a clinical
form which macroscopic and dermoscopic features
mimic (due to the melanic pigment) malignant mela-
noma. The pigment is stored intracellular in isolated or
localized melanocytes and in stomatic melanophages. Yet
the other listed basal cell forms can present small
quantity of pigment. Histological basal cell carcinoma
presents small size tumor cells, monomorphic, with
mitoses, but without pleomorphism, while melanoma
presents medium/large tumor cells with pleomorphism,
mitoses and infiltrating aspect. Melanoma subtype with
small cells can creates some diagnosis problems and in
these cases immunohistochemical tests clarify final
diagnosis. So, basal cell carcinoma is BerEP4 positive
and S100 negative, while melanoma is BerEP4 negative
and S100, MART-1, HMB45 positive. Melanoma with
small cells must be differentiated from Merkel cell
carcinoma, which is BerEP4 positive, CD20 positive
and S100 negative.

Sentinel lymph node biopsy (SLNB), as proposed
initially by Morton DL et al., is actually the gold
standard for melanoma investigation and is included in
AJCC classification. The first station of lymph drainage
tumor is in sentinel node, so that the probability to be
the first metastatic site is maxim. Biopsy of SLN is
followed by histopathological examination. This method
is indicated in patients with intermediate-risk: lesion
thickness of 1–4 mm and high-risk lesion >4 mm. Pre-
operative lymphoscintigraphy is an important step for
detection sentinel lymph node biopsy and increased the
accuracy of the investigation at 95–99%. This technique
is the most accurate method for micrometastases ≤4mm,
despite the adverse effects, like radiation exposure or
potential local complication (lymphedema). Vital blue
dye is injected peritumoral for intraoperative visuali-
sation of sentinel lymph node and is easy, inexpensive
and helpful procedure. SLNB became a standard in
melanoma staging and is important for treatment
decision, mostly adjuvant schedules. A positive result is
followed by elective lymph node dissection [7].

Biopsy of sentinel lymph node is a very useful in
melanoma staging and a strong predictable factor. Estourgie SH et al. on a group of 250 melanomas found
only 24% sentinel node-positive and 9% false negative
rate, which is very high [8]. Vital Blue Dye injected
intradermally helps the lymph nodes mapping. The
accuracy of lymphoscintigraphy in sentinel lymph node
diagnosis is a problem to debate. The technique has
95% specificity. Gershenwald JE and Filder IJ, in a
clinical study with 520 melanoma patients, found a
5.2% false negative rate. The question regards false
positive results can receives response in ability of
inflammatory lymph node to retain the radioiodide [9].

Additionally, serological biomarkers like LDH,
S100, C-reactive protein, MIA (melanoma inhibitory
activity protein), TA90 (tumor-associated antigen 90
immune complexes), IL6. A combination of serum
biomarkers correlated with AJCC staging, play an
important prognostic role, very useful in latest melano-
ma stages, monitoring after surgical excision of primary
tumor in I–III stages and evaluation therapy in advanced
stages. But, there are two principal limits: none a single
marker can be considered specific for melanoma and
predictive significance are just for latest stages: presence
of metastases or good therapy response, not for early
stages [10].

The excisional biopsy of a skin tumor is considered
the safety way comparative with incisional or punch
biopsy since the first method can avoid inaccurate tumor
thickness measurements. Martin RC et al., in 2005, on a
large clinical trial of 2164 patients reported no
significant difference between three methods of biopsy
(excisional, incisional and shave) regarding local or
distant recurrence and to increase the risk of sentinel
lymph node micrometastases. He demonstrated on a
large group of 265 samples incisional biopsy with 496 control
melanomas that melanoma prognoses and the risk of
recurrences are not affected [11]. In difficult cases like
nevoid or desmoplastic melanomas, incisional biopsy
studies has shown that use of immunostains (especially melanoma technique is more laborious, but recent tumor tissue the procedure is repeated. This treatment of Excised lesion is histopathological analyzed. If remain particularly ill-define lesion. The aim of this technique play an important role in melanoma management grace to the entire margins of tumor are examined and very helpful method in non-melanoma skin malignancies the SLNB. Mohs micrographic surgery proved that is a in cases with micro- and macro-metastases mapped by. So that the short and long-term consequences of a large operation like lymphoreea and lymphedema are avoided.

**Conclusions**

Pigmented basal cell carcinoma may pose differential diagnosis problems with cutaneous melanoma. Imagistic diagnosis including dermoscopy and lymphoscintigraphy offer misinterpreted results and it is necessary to improve the quality of this methods. The tumor biopsy in this difficult cases is better to change with excisional biopsy of lesion in safety margins, followed by the intraoperative histological exam is the best option. Thereby the surgical procedure is limited just to the tumor excision not and the lymph nodes dissection. So that the short and long-term consequences of a large operation like lymphoreea and lymphedema are avoided. False positive imaging results determine in described cases an overvaluation and implicitly a complex operations. Final diagnosis in these difficult cases was proved by histopathological exam and immunohistochemical tests.

**References**


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