ORIGINAL RESEARCH PAPER

Ophthalmology

KEY WORDS: Merkel cell carcinoma, eyelid tumor

Merkel cell carcinoma of the eyelid: a case report

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ABSTRACT

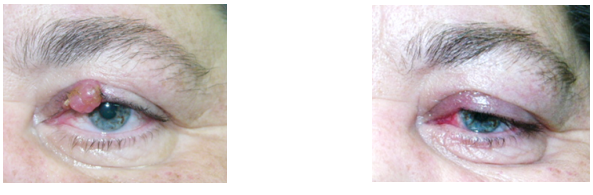
Merkel cell carcinoma is aggressive neuroendocrine tumor that extremely rarely affects the eyelids.
Purpose: To present a case of a 54-year old woman with Merkel cell carcinoma of the eyelid.
Methods: Standard ophthalmic examination, surgical excision of the tumor and histopathological, and immunohistochemical examination.
Results: Patient presents with solid pink-violet lesion on the left upper eyelid. Histopathological examination shows combined Merkel cell and squamous cell carcinoma. Three months after eyelid surgery PET/CT shows suspicious neck lymph nodes in both sides. Five months after surgery left side cervical lymph nodes excision was performed. Histopathological examination found metastases associated with neuroendocrine carcinoma in 15 lymph nodess and perinodal soft tissues. Patient dies one year after eyelid surgery as a consequence of metastases of primary eyelid tumor, despite surgical and radiation therapy.
Conclusions: The presented case confirms the possibility of combination of Merkel cell with squamous cell carcinoma and the aggressive clinical course of these tumors. Merkel cell carcinoma very rarely arises from the eyelids but is of significance to the ophthalmologists because of its life-threatening potential.

Introduction:
Merkel cell carcinoma (MCC) of the eyelid is a rare cutaneous malignant neuroendocrine tumor. (1) In recent years Merkel cell carcinoma has been associated with Merkel cell polyomavirus infection. (2) The incidence of MCC is 0.2-0.45 per 100 000 people and is 100 times rarer than skin melanoma. (3) Typical for MCC are high malignant potential and tendency for near and distant metastases and relapses. Merkel cell carcinomas have a predilection to arise in perifollicular areas on the head, neck and extremities skin. (1) Five to ten percent of all cases occur on the eyelid and present approximately 0.5 % of all eyelid tumors. (4, 5, 6) Tumor appears as a reddish or pink-violet nodule, often misdiagnosed as chalazion or basal cell carcinoma. (6) MCC affects elderly people, between 60 and 70 years old, more often females. It is possible for MCC to be combined with squamous cell carcinoma or sebaceous gland carcinoma of the eyelid. (7)

Case presentation:
A 54-year old female patient with diagnosis chalazion was referred to our hospital for surgical treatment. Patient's history was for a fast-growing, painless nodule on the left upper eyelid, near to the lid margin.

Patient presents with pink-violet nodule with irregular lucent surface, which engages the lid margin of the left upper eyelid. (fig. 1) The best corrected visual acuity was 1.0 in both eyes. Slit-lamp anterior segment examination was normal for the patient's age and normal IOP was measured. Eye fundus was without pathological changes in both eyes. No palpable preauricular and submandibular lymph nodes were present.

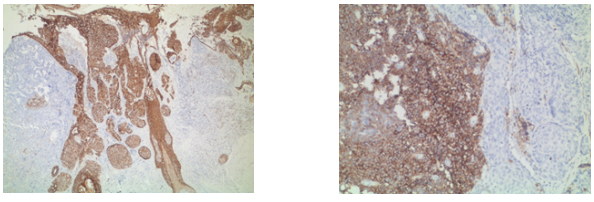
After a wide surgical excision of the tumor formation in the whole eyelid thickness, standard direct closure of the wound after lateral canthotomy was performed.



a b

Figure 1. Merkel cell carcinoma of the upper eyelid – a, one month after tumor excision – b

The excised tissue was sent for histopathological examination with a paraffin section. As a result of immunohistochemical staining the tumor was classified as Merkel cell carcinoma combined with squamous cell carcinoma, resection lines were free of tumor cells. (Fig. 2)



A B

Figure 2. Immunohistochemical staining. A- positive immunohistochemical reaction with monoclonal antibodies AE1/AE3 in squamous cell carcinoma nests next to nests of Merkel cell carcinoma without staining, (magnification x40); B – positive membrane expression of CD56 monoclonal antibody in Merkel tumor cells next to nests of squamous cell carcinoma without staining, (magnification x100)

Two months after surgery topical radiation therapy (52 Gy) was performed. Two months later patient reported about palpable neck lymph nodes. PET/CT showed suspicious lymph nodes in both sides. (Fig. 3)

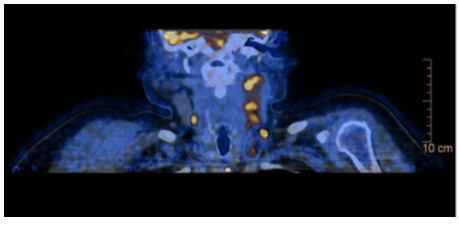


Figure 3. Suspicious lymph nodes more on the left sides on PET/CT

Five months after the eyelid surgery modified radical neck dissection on the left side, preserving the internal jugular vein, with cervical lymph nodes excision was performed. Histopathological examination found metastases associated with neuroendocrine carcinoma in 15 lymph nodes and perinodal soft tissues.

New course of radiotherapy in neck area was performed. Several months later the patient comes back with metastases in the whole cervical area and free of relapses eyelid. Patient dies one year after eyelid surgery as a consequence of metastases of primary eyelid tumor.

Discussion:

Merkel cell carcinoma of the eyelid is extremely rare in ophthalmological practice and this could lead to difficulties in making the clinical diagnosis and to delay the treatment. In some cases Merkel cell carcinoma can have an unusual presentation of a large, exophytic lesion and it is possible to misdiagnose it as a basal cell carcinoma. (8) Presented case was referred to our clinic with diagnosis chalazion, which supports the opinion that this tumor often is not clinically recognized. Imunohistochemical examination is necessary for accurate diagnosis of MCC.

Merkel cell carcinoma as a highly malignant tumor has to be treated aggressively with surgical excision with 5 mm histologically confirmed clear margins, combined with radiation therapy and/or chemotherapy. In some cases, regional lymph nodes dissection has to be done. (9) Local treatment alone is not sufficient, to prevent recurrences and distant metastasis. (4, 5) Local skin relapse may be expected in 25-77% of cases after wide surgical excision. (1) Despite histologically confirmed clear surgical margins, radiotherapy and absence of eyelid relapse in presented case, distant lymph nodes metastases developed soon after first operation. As stated in the literature in 50-79% there are metastases in regional lymph nodes and in more than 30% of patients have distant metastasis (in liver, bones, lungs, and skin). (1) Lymph-node metastases should be treated by radical lymph-node excision and radiotherapy, as in the presented case.

The estimated mortality rate for all patients with Merkel cell carcinoma is 20-46%. (10, 11) Bonavolontŕ P et all reported of one patient operated from eyelid Merkel cell carcinoma with regional nodal metastases, who died 2 months after surgery because of metastatic dissemination to the lung. (12)

Retrospective case series study of 21 patients from 5 tertiary referral centers in the United Kingdom and Australia with primary MCC of the eyelid found local recurrence rate of 10%, the regional nodal recurrence rate - 10%, and the distant metastatic recurrence rate - 19%. Two patients died of metastatic MCC. (9)

Conclusions: The presented case confirms the possibility of combination of Merkel cell with squamous cell carcinoma and the aggressive clinical course of these tumors. Merkel cell carcinoma very rarely arises from the eyelids but is of significance to the ophthalmologists because of its life-threatening potential.

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