CASE REPORT

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Caruncular late-onset junctional nevus: apropos of an anatomo-clinical observation

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Abstract

Conjunctival nevi are benign tumors, most often located at the nasal or temporal limbus, and rarely in the fornix or tarsus. The vast majority of caruncular tumors are benign and only few are malignant. Most of the caruncular tumors (either benign or malignant) are nevi. We report a case of a 75-year-old female patient presenting caruncular atypical late-onset junctional nevus that clinically arose malignancy suspicion. Ophthalmologic macroscopic examination and slit lamp examination of the right eye were performed. Further blood tests were performed. Caruncle ctomy was performed two days after admission to hospital. Microscopy revealed the junctional localization, diffuse proliferation of the nevocytes. Immunoreactions with S100 and human melanoma black 45 (HMB45) antibodies were performed. Differential diagnosis of these lesions represents a great challenge. The greatest challenge represents the differential diagnosis between a benign tumor and a malignant life-threatening one, the malignant melanoma, especially with unusual presentation. The presence of a late-onset caruncular tumor with uncertain evolution requires excision biopsy to determine the diagnosis and to establish the best management.

Keywords: conjunctiva, tumors, caruncula, junctional nevus.

Introduction

The caruncle is a modified cutaneous tissue located at the inner canthus of the eye, containing sebaceous glands, accessory lacrimal glands, hair follicles, lobules of fat, and sweat glands [1, 2]. The vast majority of caruncular tumors are benign and only few are malignant [2]. Clinical onset and histological findings are not necessarily correlated, thus excision is mandatory whenever malignancy is suspected. Most of the caruncular tumors (either benign or malignant) are nevi [2].

The differential diagnosis between benign and malignant lesions of the caruncula is crucial, especially when the lesion is encountered in childhood. Amelanotic caruncular lesions can easily pass as clinically benign in children, whilst on histopathological analysis the lesion can be a melanoma in association with melanocytic nevus [3]. Sometimes, the differential diagnosis is so difficult to establish that requires immunohistochemistry tests. S100 antigen is a large-scale used antigen, which is very sensitive for early melanocytic neoplasms, though not specific [4–7]. Human melanoma black 45 (HMB45) is a melanocyte lineage-specific differentiation marker that is negative or only focal positive in desmoplastic melanoma, while S100 is diffusely positive in the great majority of the neoplasms [8].

The caruncular junctional nevi are benign tumors, with onset in adolescence and a particular histological structure. We report a case presenting caruncular atypical late-onset junctional nevus that clinically arose malignancy suspicion.

Case presentation

A 75-year-old female patient presented in September 2015, in the Clinic of Ophthalmology, Emergency Municipal Hospital, Timişoara, Romania, accusing the appearance of a tumor in the medial cantus at the caruncula of the right eye (RE). The patient noticed the tumor about one year before presentation. She related that within this time the tumor presented slow volume growth and also slight changes in pigmentation. Anamnesis revealed no history of primary acquired melanosis (PAM), congenital nevus or of melanoma.

Ophthalmologic macroscopic examination and slit lamp examination of the right eye were performed and revealed a caruncular convex oval formation of 4/3 mm in size with uneven surface, red salmon colored, well vascularized, with large base, presenting patchy pigmentation (Figure 1). The rest of the anterior segment and the ocular fundus were normal as well as the visual acuity and the visual field. Regarding the fellow eye, we have not noticed any pathological findings, no pigmentary changes of the eyeball or of the ocular adnexa. General physical examination was also performed, but did not reveal any signs of related conditions such as nevi, PAM, or melanoma. Regional lymph nodes were also examined but were clinically normal.

Further blood tests were performed: hemoleucogram, blood glucose, liver and kidney specific tests, urinary summary examination, inflammation tests, coagulation tests, serum S100 protein – no significant modifications. Ocular ultrasonography of the right eye was also performed but detected no pathological findings.

The clinical diagnosis was RE nevus of the caruncula.

Changes in pigmentation, volume growth and the late onset imposed the right carunclectomy, which was performed two days after admission to hospital. The excised tumor was placed in a container with formaldehyde solution and sent to the Laboratory of Pathological Anatomy, where it was fixed in a paraffin block. Several sections were cut and stained with Hematoxylin–Eosin (HE). Microscopy revealed the junctional localization, diffuse proliferation of the nevocytes, with nests-like arrangement (Figure 2).

Immunoreactions with S100 and HMB45 antibodies were performed. S100 (polyclonal, 1:4000, Dako) was considered positive for nuclear staining alone or in combination with cytoplasmic staining, whereas cytoplasmic staining alone was considered negative HMB45 (1:50, Dako) was considered positive for cytoplasmic staining alone. Staining for both markers was reported in the following categories: strongly positive – moderate to intense staining of at least 20% of lesional cells; weakly positive – faint, moderate, or intense staining of more than 5% but less than 20% of lesional cells; and negative – faint or moderate staining of less 5% to no staining of lesional cells. Immunoreactions for S100 protein consisted of isolated positive cells at nucleus and/or cytoplasm with faint to moderate staining summing less than 5% of the lesional cells (Figure 3); we consider our case negative for S100. Regarding HMB45, immunoreactions consisted of intense staining of more than 20% of lesional cells (Figure 4); we consider our case strongly positive for HMB45.

The histological diagnosis was RE junctional nevus of the caruncula. The histological diagnosis was supported by immunoreactions with S100 and HMB45, which stressed the benign nature of this proliferation. In our case, the clinical and the histological diagnosis were strongly correlated.

Scar surveillance every six months for two years revealed no significant changes.

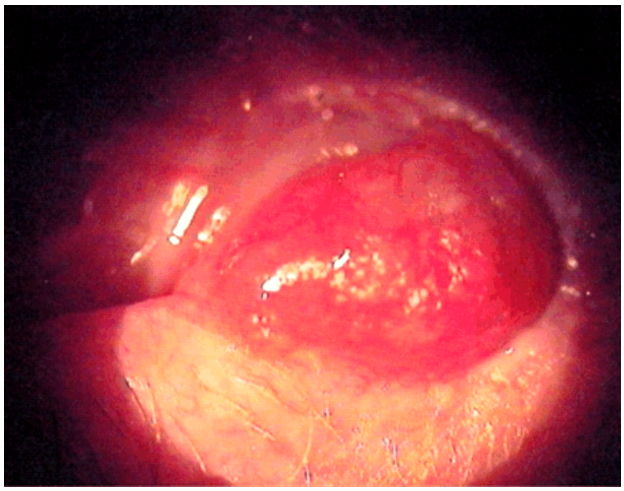

Figure 1 – ***Caruncular junctional nevus. The oval shape, the uneven surface, and the red salmon color can be observed.***

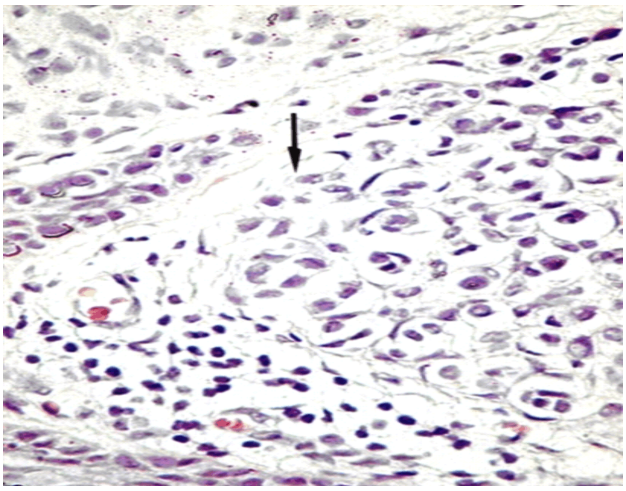

Figure 2 – ***Diffuse proliferation, with nests-like arrangement of the cells, near the covering epithelium (HE staining, ×400).***

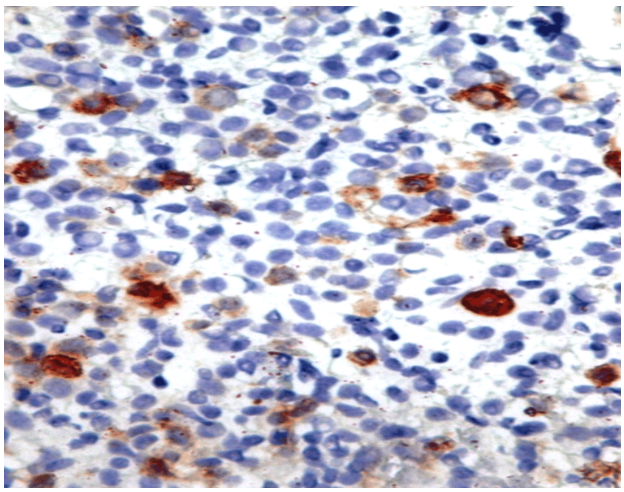

Figure 3 – ***Immunoreaction for S100 protein. Positive isolated cells at cytoplasmic and nuclear level (Anti-S100 antibody immunostaining, ×400).***

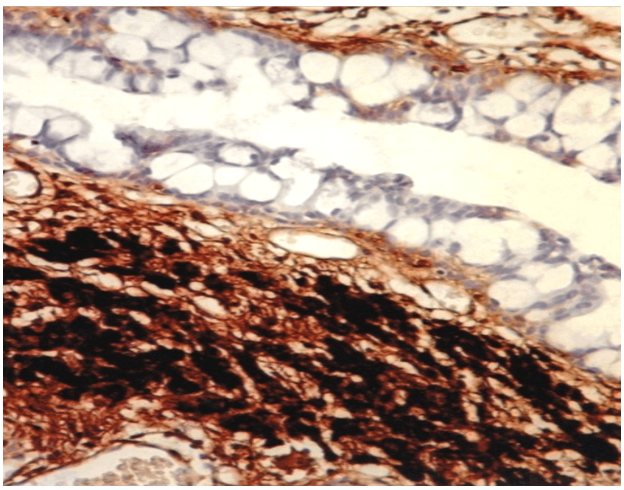

Figure 4 – ***Intense positive immunoreaction, of diffuse type, in all proliferative cells (Anti-HMB45 antibody immunostaining, ×400).***

Discussion

The different types of tissues from the caruncular structure can give rise to a wide variety of lesions most of them benign, but the variety of lesions that affect the caruncle make the clinical diagnosis difficult. The caruncle lesions usually show inconsistency between clinical and histopathological diagnosis, ranging between 40 and 50% [9–11]. The lesions of the caruncle represent 3–4% of all lesions of the biopsied conjunctiva; of these, 43% are nevi, from which 2–3% have a junctional structure [12, 13].

In caruncular lesions, the clinical diagnosis is difficult because tumors at this site are quite rare and diverse [12]. The most frequent benign lesion is the nevus, followed by papilloma and cyst. Premalignant lesions are dominated by PAM, while most frequent malignant conditions are basal cell carcinoma, lymphoma and malignant melanoma [12].

Differential diagnosis of these lesions represents a great challenge. In some cases, only the clinical aspect itself cannot differentiate between these lesions and biopsy is required. As we earlier stated, clinical and histological diagnosis are not always correlated. Regarding our patient, due to the late onset, volume growth and pigmentation changes, we had to differentiate the lesion from several other conditions. The clinical aspect (uneven surface, red salmon color) can easily eliminate the cyst, which is round oval, with even surface and soft consistency. The uneven surface represents one of the similarities between our tumor and a papilloma, but the large base, changes in pigmentation and well vascularization are not characteristic for papillomas. Usually, papillomas have small bases, rather poor vascularization and constant brown color.

Late onset, large base, well vascularization and uneven surface can also represent characteristics of a nodular basal cell carcinoma [14], fact that increases the difficulty of the clinical differential diagnosis. Histology makes the final call in this situation: basaloid cells nests of various sizes, with a peripheral palisade disposition of the epithelial cells at the edges of the tumor characterize the nodular basal cell carcinoma [14], whilst in our case we have noticed diffuse proliferation of the nevocytes, with nests-like arrangement. A slow growing, salmon colored tumor at the caruncula represent clinical features of a lymphoma [12], but the lesion histologically consists of packed lymphoid cells with a mucosa-associated lymphoid tissue [12] instead of nevocytes proliferation with nest-like arrangement, as given in our case.

The greatest challenge represents the differential diagnosis between a benign tumor and a malignant life-threatening one, the malignant melanoma, especially with unusual presentation. Desmoplastic melanoma, first recognized in 1971 [8, 15], occurs typically in the elderly and it is clinically pigmented in only half of the cases [8, 16]. When pigmentation is present, the clinical sign of differentiation is cutaneous or mucosal pigmentation overlying a palpable nodule in the dermis or submucosa. Otherwise, histology shows spindled-morphology invasive tumor cells, associated with striking desmoplastic stromal response [8], which is not the aspect of our case. Moreover, S100 and HMB45 immunostainings have different patterns in desmoplastic melanoma (negative or focally positive for HMB45 [17, 18] and diffusely positive for S100 [8]), comparing to our junctional nevus (strongly positive for HMB45 and negative for S100). The duty of differentiating between nevus and melanoma has never been easy challenge for pathologists, diagnosis errors in both ways can occur: overdiagnosis of melanoma when the tumor is actually a nevus leads to excessive surgery, whilst misdiagnosis as nevus when the lesion is an invasive melanoma has terrible consequences for a young patient, in most cases [4].

The junctional nevi are common at younger ages, while the compound, the subepithelial, and the blue nevi are more prevalent in the older age groups [19]. This distribution is consistent with the hypothesis that the entities in question represent different stages in the maturation and proliferation of melanocytes, namely: junctional activity in the early stages and subsequent extension to the substantia propria in the late stages. The late-onset junctional nevus represents, in this context, a clinical particularity.

Conclusions

The rarity and variety of the caruncular lesions can cause diagnostic difficulties. The presence of a late-onset caruncular tumor with uncertain evolution requires excision biopsy to determine the diagnosis and to establish the best management.

Conflict of interests

The authors declare that they have no conflict of interests.

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