The role of cytology in the diagnosis of ophthalmic lesions of the eyelid, conjunctiva and cornea

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Cytology of accessible lesions in ophthalmology

- fast, simple, safe
- when clinical examination is not enough to establish the diagnosis
- warrants early diagnosis
- helps planning the extent of the surgical procedure
The external surface of eye includes: eyelid, lid margin, conjunctiva and cornea

Conjunctiva
Cytology of the conjunctiva
Cornea

Cytology of the cornea
Sampling techniques

**Scrape Cytology**

- spatula
- cotton swab
- cytobrush
- hockey blade
FNA

- close cooperation between the ophthalmologist and the cytopathologist

Impression cytology

- cellulose filter
Sampling

- 97 samples of patients treated at the Department of Ophthalmology
- Samples obtained from accessible lesions of the conjunctiva, cornea, eyelid or lacrimal apparatus
Classifying of samples

- of 31 abnormal cytological findings 28 were confirmed histologically
Inflammatory lesions

- the bacteria most commonly responsible for bacterial keratitis are Streptococcus, Staphylococcus species and Enterobacteriaceae
- viruses - Herpes simplex, Zoster, Adenoviruses
- fungal keratitis - due to trauma

Acute inflammatory changes - aspiration of the vitreous body fluid
Inflammatory lesions

Chronic granulomatous inflammatory changes
Inflammatory lesions

Actinomycosis
Premalignant lesions

- abnormalities ranging from mild to severe dysplasia or carcinoma in situ

cytology - abnormal keratinization with parakeratosis, dyskeratosis, atypical squamous cells

histopathology - In situ carcinoma of the conjunctiva
Malignant tumors

- Basocellular carcinoma: 19
- Squamous cell carcinoma: 2
- Sebaceous gland carcinoma: 2
- Non-Hodgkin lymphoma: 3
Malignant tumors

Squamous cell carcinoma
Malignant tumors

Squamous cell carcinoma
Malignant tumors

Basocellular carcinoma
Malignant tumors

A 78-year old patient presenting with a painless, enlarging mass in the eyelid

Sebaceous gland carcinoma
Malignant tumors

- the majority of ocular adnexal lymphomas are extranodal neoplasms
- 10-30% are secondary tumors in patients with disseminated lymphoma
- the most common are extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT) type, follicular lymphoma and diffuse large B-cell lymphoma

Extranodal marginal zone lymphoma (MALT)
Malignant tumors

-a patient previously treated for conjunctival melanoma was suspected for relapse

cytology: cells expressing inflammatory changes and reparatory changes, HMB-45

histopathology: granuloma pyogenicum
Conclusion

- ocular surface lesions are easily accessible to the application of cytology techniques, which are rapid, non-invasive, easy to perform

- facilitates the clinical management of the patient and the therapeutic decision

- the specific location of the ocular lesions requires a close cooperation between the ophthalmologist and cytologist
Thank you for your attention!