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Review Article

# Ocular Tumors Located at the Level of the Conjunctiva

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## Abstract

The conjunctiva comprises a heterogeneous set of tumors, mostly benign 52%, precancerous tumor lesions 18% and malignant tumors 30%. Conjunctival tumors can be congenital or acquired and from a histological point of view are: epithelial, stromal, melanocytic. The clinical examination highlights the location, size, mobility, pigmentation, extension of the tumor and must be correlated with complementary examinations - optical coherence tomography of the anterior pole, ultrasonic biomicroscopy), ultrasound, biopsy with histological analysis of the sample. Benign tumors of the conjunctiva can be: degenerative, inflammatory, epithelial, histocytic, xanthoma, vascular tumors. Precancerous lesions can develop at the conjunctiva level. Malignant tumors of the conjunctiva represented by primary malignant melanoma – MMP require complete surgical excision followed by cryotherapy, radiotherapy, and in tumor extension exenteration. Secondary tumors in the conjunctiva extend from the eye, orbit, eyelid. Metastatic tumors of the uni or bilateral conjunctiva are very rare.

**Keywords:** benign; malignant conjunctival tumors; pterygium; papilloma; squamous carcinoma; hemangioma; malignant melanoma

## Introduction

● The conjunctiva is a mucous membrane that covers the posterior surface of the eyelids and the anterior surface of the eyeball; inserting at the level of the sclerocorneal limbus.

Conjunctival tumors comprise a heterogeneous set of lesions; mostly benign (52%); precancerous tumor lesions (18%); and malignant conjunctival tumors (30%).[1;2]

Conjunctival tumors are congenital and acquired; and from a histological point of view they are: epithelial; stromal; melanotic.

The conjunctiva and subconjunctival tissue are composed of various anatomical structures; each structural element of the conjunctiva can be a tumor starting point(1)

- epithelium – epithelial cysts; benign hyperplasia; dysplasia; carcinomas
- conjunctival tissue – inflammatory tumors
- blood vessels – telangiectasias; hemangioma
- lymphatic – lymphangioma
- nerves – neuroma; neurofibroma
- melanocytes – nevus; melanosis; melanoma

At the level of the sclerocorneal limbus; the conjunctival stroma is thick and contains vascular arches.

The conjunctiva can be examined directly in daylight; highlighting the presence of a tumor; the location; size; extension; mobility; and pigmentation of the tumor.

Sometimes complementary examinations are necessary - optical coherence tomography of the anterior pole; ultrasonic biomicroscopy; biopsy with histological analysis of the collected sample; exfoliative conjunctival cytology useful in evaluating adjacent inflammatory and/or infectious lesions.

- Predisposing risk factors for the development of malignant tumors are: [2;3]
  - genetic factors
  - prolonged sun exposure (ultraviolet light)
  - viral immunodeficiency – HIV; papillomavirus HPV which can favor the development of bilateral; invasive tumors
  - immune disorders: organ transplant; immunosuppression
  - eczema; atopy; pemphigoid scars
  - autoimmune diseases
- The symptoms of conjunctival tumors are nonspecific; they appear late in development: [3]
  - sensation of visual discomfort due to dry eyes
  - foreign body sensation

- the appearance and expansion of a whitish/pinkish/protruding + pigmented formation
- over time; as the tumor expands; vision decreases

**Clinical Forms Of Conjunctival Tumors [3;4;5;6]**

- Benign conjunctival tumors with cell proliferation are clinically evident by the presence of a flat; clear-edged tumor formation – papilloma; nevus; angioma without life-threatening risk.
- Precancerous conjunctival tumors are capable of transforming into malignant lesions – actinic keratosis; PAM intraepithelial neoplasia.
- Malignant tumors have a risk of extension in surface and depth and have a risk of loco-regional recurrence and distant spread through metastasis; which can even carry a life-threatening reserved prognosis.

**Benign tumors [1;3;4;5]**

***Degenerative conjunctive diseases*** **[4;6]**

**Pinguela**

- Yellowish-white; round lesion located at the medial limbus; present in people chronically exposed to the sun
- More common in older people
- It shows elastic and collagen changes
- A histologically similar lesion that extends to the cornea is Pterygium in which the epithelium may be normal; thinned; hyperplastic; dysplastic.

**Pterygium**

- triangular subepithelial fibrovascular lesion due to proliferation of degenerated tissue of the bulbar conjunctiva; may grow beyond the limbus and insert onto the cornea
- at the head of the pterygium; at the level of the anterior corneal epithelium; there may be iron deposits – Stocker's line
- complications: chronic irritation; astigmatism; decreased visual acuity if the pterygium extends beyond the center of the cornea

Surgical treatment:

- simple excision; accompanied by recurrences
- excision followed by closure of the conjunctival defect with amniotic membrane or conjunctival autograft

**Warehouse injuries [3;4]**

They are a deposit of exogenous materials or abnormal metabolites in the conjunctiva.

- localized lesions within systemic diseases – Fabry; ochronosis;
- crystalline deposits in: cystinosis; oxalosis gout; dysproteinemias
- deposits that occur through the use of topical medications: epinephrine or systemically: tetracycline

***Amyloidosis***

Primary

- is present in young; healthy adults evidenced by acellular eosinophilic deposits in the stroma; with nodular or diffuse thickening of the conjunctiva
- if amyloid deposits are in the conjunctiva; they suggest a localized lesion; if they are present in the eyelid; they suspect their existence within a systemic condition

Secondary – within a hereditary disease or after chronic inflammation.

***Tumorous Dysgenesis Conjunctival Abnormalities*** **[1;7]**

**Epibulbar limbic dermoid**

- tumor present in a child in the form of a yellowish-white subconjunctival mass located at the level of the inferotemporal limbus
- single or multiple small; round; shiny ivory-white tumor
- the tumor may be accompanied by deep vascularization that can invade the cornea
- can produce significant astigmatism depending on location
- may contain cartilaginous formations; hair follicles; sebaceous and sweat glands; then constituting a complex choristoma
- may be isolated or present in patients with Goldenhar syndrome where there are bilateral limbic dermoid or dermolipoma
- ocular may be associated with: palpebral coloboma; amyridia; microphthalmia
- systemic can be associated with Goldenhar; Treacher; Collins; Franceschetti syndrome

Treatment

- excision if visual function impairment occurs due to induced astigmatism; cataracts or chronic ocular irritation
- Excision is relatively easy for small tumors; for large perilimbic tumors lamellar keratectomy is sometimes necessary; associated or not with lamellar keratoplasty.

**Dermolipoma**

is a dermoid that contains adipose tissue

- the tumor is pinkish-yellow in color; is located in the supero-temporal part of the bulbar conjunctiva behind the orbital septum with possible extension towards the orbit; then accompanied by proptosis
- sometimes the tumor can be located in the orbit with subconjunctival extension
- the tumor is adherent to the conjunctiva; but mobile relative to the sclera

Surgical treatment

- excision of the tumor without damaging neighboring anatomical structures (muscles; lacrimal gland)
- conjunctival graft if needed

**Conjunctival cyst**

- present in the conjunctival sac bottoms in the form of a translucent; mobile; round or oval tubular tumor
- may be:
  - inclusion cyst – posttraumatic (accidental; surgical)
  - accessory lacrimal gland cyst
  - cyst involving lymphatic channels

***Embryonic Tumors* [1;6]**

**Rhabdomyosarcoma**

- rare tumor; located on the conjunctiva; in the bottom of the supero-nasal conjunctival sac; sometimes secondary to orbital extension
- presents as a pedunculated; reddish; soft; rapidly growing mass
- the diagnosis must be established quickly because in the absence of treatment with radiotherapy and chemotherapy the local and even lifelong prognosis can be fatal

***Nerve Tumors* [4]**

**neuroma**

- they are rare tumors
- may be present in Recklinghausen neurofibromatosis

***Histiocytic And Xanthomatous Tumors***

**Fibrosarcoma of the conjunctiva**

- tumor located in the vicinity of the limbus
- the tumor is small; yellowish and composed of histocytes; sometimes swirled; and large xanthomatous cells loaded with fat
- may be present in Hans Schuler Christian disease

**Juvenile xanthogranuloma**

- tumor present in the child
- can be isolated or associated with skin lesions of the same nature
- it presents as a yellowish or pinkish; thick mass; located juxtalimbically
- requires corticosteroid therapy

***Inflammatory Tumors* [3]**

- are diffuse or localized granulomatous inflammatory reactions generated by: bacteria (mycobacteria); foreign bodies; parasites; collagen diseases
- have a relatively sudden onset with ocular pain and discomfort
- the clinical appearance is similar to lymphomas
- clinical diagnosis is confirmed by biopsy

***Kaposi Sarcoma***

- slow-growing; low-grade tumor that occurs in HIV patients
- presents as diffuse; well-vascularized nodules or plaques (sometimes they can mimic subconjunctival hemorrhage)
- treatment is palliative; being indicated in infection; bleeding and consists of radiotherapy and excision followed by cryotherapy

***Epithelial Tumors Of The Conjunctivus* [4;5;6]**

**Conjunctival papilloma**

It comes in two forms

- multiple pedunculated or sessile lesions with smooth; non-keratinized surface
  - present in children and young adults
  - can be induced by human papillomavirus infection (HPV type 6; 11)
  - uni; occasionally bilateral; is located in the conjunctival sac bottoms; on the tarsal conjunctiva; caruncle; limbus
  - small lesions do not require treatment because they can resolve spontaneously
  - large lesions require biopsy excision and cryotherapy
  - Recurrent lesions are indicated for intralesional; subconjunctival injections with interferon alpha; local applications with mitomycin C
- non-infectious sessile papilloma; located at or near the limbus
  - may extend to the cornea or bulbar conjunctiva
  - has an irregular surface and is present in adults
  - these tumors are benign; but can also be precancerous and require complete excision

**Molluscum contagiosum**

- rare tumor of the conjunctiva; more commonly located on the eyelid

**Keratoacanthoma – Pseudoepitheliomatous hyperplasia**

- rare tumors; more commonly located on the eyelids; with the presence of inflammatory lesions

**Limb leukokeratosis**

- is the abnormal keratinization of the conjunctiva located especially at the level of the temporal limbus
- histologically it is a leukoplakia
- It appears as small; dense; avascular leukoplakic plaques with smooth edges and a white; dry surface.
- rarely undergoes malignant transformation in case of incomplete excisions

***Vascular Tumors* [7;8]**

**Telangiectasia**

- dilation of pre-existing vessels
- nonspecific by local irritation or prolonged inflammation; which can lead to irreversible dilation of the vessels
- may be present in:
  - Rendu-Osler-Weber disease – hemorrhagic telangiectasia affecting the skin; mucous membranes of the nose; mouth; lungs; gastrointestinal tract; conjunctiva
  - thyroid ophthalmopathy may present with telangiectasias near the insertion of the rectus

**Hemangioma**– proliferation of new blood vessels

***Pyogenic granuloma***

- it is improperly called so because the lesion does not induce pus; it is not granulomatous
- it is formed by granulation tissue with multiple capillaries and inflammatory cells with a "fleshy" appearance; after trauma; post-surgery or after a chalazion that partially drains at the tarsal surface level

***Capillary hemangioma***– eyelid; orbit may involve the palpebral conjunctiva

- appear early; can grow rapidly; and sometimes regress spontaneously before the age of 5
- crying causes tumor growth
- amblyopia may occur in 50% of cases secondary to anisometropia

Treatment requires:

- clinical follow-up for possible spontaneous regression
- for large tumors corticosteroid injections

***Cavernous hemangioma***

- is located deeper
- the growth rate is slower
- may be accompanied by exophthalmos

### Lymphangioma

- benign; slowly progressive tumors affecting the orbit; eyelid; conjunctiva
- may coexist with lymphangioma of the face; nasal cavity; paranasal sinuses; palate
- treatment is surgical; difficult with partial; repeated resections

**Precancerous Lesions [3;5;6] –**potentially malignant

**Conjunctival and corneal intraepithelial neoplasia (CCIN)**includes: [9]

- ***Benign conjunctival dysplasia***
  - benign; progressive; unilateral lesions with discrete malignant potential; located in the deep layers of the epithelium
  - small "fleshy" whitish pinkish; papillary; gelatinous tumors with fine vascular tuberosities on the surface
  - the epithelium is thickened with marked dyskeratosis and clear cellular atypia limited by normal cells with intact basement membrane
  - when cellular atypia and dyskeratosis are important; **Bowen's disease of the conjunctiva** develops
  - can extend laterally towards the cornea from which it detaches leaving the Bowman's membrane intact
  - **if the basement membrane ruptures; carcinoma in situ or invasive squamous cell carcinoma occurs**
- ***Carcinoma in situ – malignant* [10;11]**
  - the lesions are malignant; more common in adults and the elderly; with men being more frequently affected than women
  - The risk factors are:
    - prolonged UV exposure
    - HPV infection; HIV

Clinical forms of CCIN are:

- plaque-shaped lesions
  - are initially located at the limbus with extension into the interpalpebral fissure
  - unilateral; unifocal; with a white/gray gelatinous appearance
- papillomatous lesions
- diffuse form with conjunctival thinning

The differential diagnosis of CCIN is made with:

- atypical conjunctival papilloma
- pterygium
- pseudoepitheliomatous hyperplasia
- chronic unilateral conjunctivitis
- amelanotic melanoma

A positive diagnosis of CCIN type is made ONLY on pathological examination because malignant and benign lesions have the same appearance.

Treatment

- localized forms – excision with cryotherapy
- diffuse forms
  - excision may be difficult because the tumor boundaries are imprecise
  - frequently the excision remains incomplete and involves recurrences
  - if necessary; to reduce recurrences; applications of Mitomycin C; 5 Fluorouracil; Interferon alpha will be made

**Hereditary benign intraepithelial dyskeratosis [5;6]**

- rare; bilateral with abnormal keratinization
- may be associated with oral lesions on the ventral side of the tongue; labial mucosa in the form of white; spongy masses
- AD transmission
- lesions present in the first year of life
- It presents as prominent; grayish-white nasal or temporal semicircular conjunctival plaques with a dry surface; clear edges and intensely vascularized.
- isolated limbic nodules may coexist
- rarely the cornea is affected with deep; vascularized corneal opacities
- being a precancerous lesion; careful clinical follow-up of the patient is necessary.

### Actinic keratosis

- can develop in the epithelium producing pinguecula or pterygium
- limbic tumor; whitish; clearly keratinized (resembles leukokeratosis); but is vascularized
- structural disorganization and cytological abnormalities are highlighted
- the excision must be done completely because it can generate carcinoma

### Xeroderma pigmentosum

- conjunctival localization is common and serious
- is present in patients exposed to solar radiation
- initially edema appears followed by pigmentation; atrophy and tumor
- some forms can cause rapidly invasive conjunctival carcinoma

**Malignant Tumors [1;4;5;7;11]**

### Squamous conjunctival carcinoma

- rare tumor with slow growth rate and low malignant potential that can develop from CCIN or occur per primam
- may develop in patients with xeroderma pigmentosum or HIV infection

- is located juxtalimbically on the palpebral conjunctiva or on the cornea
- it presents as a vegetative; papillary; lobulated; whitish; vascularized tumor (each lobe being centered on a capillary)
- progression outside of treatment is flat; the tumor spreading into the surface of the conjunctiva and cornea; invasion of the deep layers being exceptional
- It has a tendency to invade nearby lymph nodes; which requires radical; broad treatment that encompasses the entire lesion.

Treatment requires:

- complete excision and cryotherapy of the margins
- for early cases or recurrences; chemotherapy; Mitomycin C; 5 Fluorouracil can be used
- tumors involving 50% of the limb have a more reserved prognosis; and limbic stem cell transplant is indicated
- in ocular invasion; enucleation is indicated; and in those with orbital involvement; exenteration

### Mucoepidermoid or dyskeratotic cell carcinoma

- associates with mucinous cells
- has a tendency to invade deeply into the corneal stroma and inside the eyeball

**Glandular Tumors Of The Conjunctivia [5;8]**

It develops from the sebaceous glands in the caruncle and the semilunar fold.

**Sebaceous adenoma of the caruncle**– formed by well-defined sebaceous nodules.

### Oncocytoma or oxyphytic cell adenoma

- rarely; they are small; benign tumors composed of small; acidophilic granular cells – oncocytes z – with a pseudogranular appearance
- may be derived from ectopic tear tissue

### Sebaceous gland carcinoma

- can mimic a chalazion; blepharitis
- affects the Zeiss; Meibomian glands and conjunctiva in 40-80%
- intraepithelial malignant cells appear individually grouped or arranged throughout the thickness of the conjunctival epithelium
- have a high degree of malignancy
- signs of conjunctival inflammation may be present requiring differential diagnosis with: conjunctivitis; blepharitis; meibomitis; limbic keratitis
- treatment consists of surgical excision; occasionally exenteration

**Lymphoid Lesions [3;5;7]**

- Benign and malignant lesions are salmon pink in color; frequently located in the bottom of the conjunctival sac; rarely being present in the case of a systemic disease
- are relatively flat with a smooth surface and soft consistency

***Conjunctival lymphoid lesions associated with systemic manifestations***

### Conjunctival non-Hodgkin's lymphoma; large B-cell

- 10% have systemic manifestations
- have an insidious onset; painless
- are homogeneously colored; light pink lesions located at the bulbar conjunctiva of the fundus of the scrotum; oval in shape; slightly raised; similar to fish roe
- Clinically they may resemble inflammatory pseudotumors; but they have a sudden onset; are painful and are associated with systemic vasculitis or collagen diseases.
- early stages are difficult to differentiate from reactive lymphoid hyperplasia
- biopsy is necessary to determine malignant potential

Possible effective treatment:

- radiotherapy (low dose for polyclonal tumors; higher doses for monoclonal ones)
- if necessary chemotherapy; excision; cryotherapy; local interferon injections

### Burkitt's lymphoma

- is one of the most common malignant tumors in African children
- association with Epstein-Barr virus has been proven

**Conjunctival localization of Hodgkin's disease**– is rare

### Granulocytic sarcoma

- It is the anterior extension of an orbital tumor (Chloroma) and may be preceded by several months by the onset of lymphoid leukemia.

**Pigmented Tumors Of The Conjunctivia [1;4;5;6;7]**

**Benign Tumors [3;6;7]**

### Moles

- the most common form of conjunctival tumor
- are congenital lesions; well demarcated; mobile on the underlying planes; located on the juxtalimbic bulbar conjunctiva; caruncle; semilunar fold; eyelid margin
- 20-30% remain unpigmented; but by age 20-30 they become more pigmented and enlarge.
- must be differentiated from acquired melanosis which occurs later
- signs of malignant potential
  - ➢ extension into the fundus of the sac; palpebral; corneal
  - ➢ pigmentation change +/-
  - ➢ vascular development except during puberty

There are five types of nevi:

- junctional in the conjunctival epithelium
- compounds – in the epithelium and its own substance
- Spitz nevus or juvenile melanoma – rare; made up of spindle and/or epithelial cells
- blue nevus which has intensely pigmented; fusiform or dendritic melanocytes located deep in the substance itself

Treatment

excision is indicated when the lesion is unsightly or there is suspicion of malignant transformation

## Epithelial melanosis (racial)

**Congenital ocular melanocytosis [5]**

It is a melanocytic hyperplasia with three clinical forms

***Ocular melanocytosis***– located only in the eyes

- is unilateral; present at the level of the uvea; sclera; episclera; conjunctival epithelium
- multifocal gray subconjunctival pigmentation

***Dermal melanosis***– only affects facial skin with hyperpigmentation

***Oculodermal melanocytosis***– Ota's nephew

- It involves the eye and facial skin in the territory of the trigeminal nerve; branches 1 and 2; and is a hyperpigmentation of the eyelid skin associated with conjunctival melanosis.
- is the most common form of congenital ocular melanocytosis
- unilateral present in black and Asian populations
- Abnormal melanocytes are deposited in the deep layers of the dermis; sclera; episcleral tissues; uvea; orbit; brain; palate; nasopharynx with pigment visible from birth; but skin pigmentation appears later
- hyperpigmentation of the facial skin in the trigeminal area – branches one and two; of the oral and nasal mucosa
- location in the uvea; orbit; brain is associated with an increased risk of ipsilateral uveal malignant melanoma; especially in whites
- possible associations
  - hyperchromic iris
  - iris with thinned; papillary areas present in neurofibromatosis I; Axenfeld; Rieger; Peters anomalies
  - Pigmented FO
  - melanoma of the uveal tract; orbit; optic disc; brain
  - glaucoma associated with trabecular hyperpigmentation 10%

**Primary acquired melanosis – PAM [6;7]**

Histologically there are two forms of PAM

- to differentiate these forms; histopathological examination of material collected through multiple biopsies from different sites is necessary
- PAM without cellular atypia
  - where melanocytes are located in the basal membrane region of the epithelium and have a dendritic shape
  - have low malignant potential
- PAM with cellular atypia
  - containing epithelioid cells that evolve towards the superficial epithelium in a pagetoid pattern
  - have a high risk of malignant transformation 50% in the first 5 years
  - PAM with atypia with precancerous lesions; with risk of malignant transformation within 5 years with areas of brown; irregular; uni/multifocal pigmentation; predominantly on the bilateral limb in melanodermal individuals.

Treatment requires excision of small lesions and cryotherapy or topical mitomycin in large lesions.

**Precancerous Lesions [1;5;12]**

**Primary acquired melanosis (PAM) – Reese precancerous melanosis**

- adults 40-50 years old; Caucasians with unilateral; diffuse; inhomogeneous; brownish-brown pigmentation
- unlike nevi; they can be located on the conjunctiva in any part (conjunctival sac; tarsal conjunctiva; cornea); corneal invasion suggesting a proliferative process
- they may regress spontaneously; until complete disappearance; or areas of regression and areas of lesion progression may coexist.

It must be differentiated from

- *racial melanosis*
  - bilateral; asymmetrical
  - occurs in pigmented people
  - does not invade the cornea
  - low malignant potential
- *secondary melanosis*in
  - Addison's disease; pregnancy
  - medications: chlorpromazine; topical epinephrine
  - diseases with chronic inflammation and scarring – trachoma.

Treatment

- for small lesions – biopsy and excision
- the presence of atypia requires complete excision of the lesions followed by cryotherapy
- Very large injuries require:
  - abscission
  - cryotherapy
  - topical application of mitomycin C
  - periodic re-examination at -6 months

**Malignant Tumors [3;4;12;13]**

**Primary malignant melanoma (PMN) [7;11;12;13]**

- represents 2% of ocular malignancy
- is present in Caucasians 50-55 years old
- exceptional in blacks and under 20 years old
- located on the bulbar conjunctiva the lesion is nodular; sessile or pediculated; pigmented; well vascularized and fixed to the episclera
- rarely the tumor is amelanotic; which can cause diagnostic confusion

MMP can develop from:

- primary acquired melanosis (PAM) – 75%
  - Malignant transformation of PAM is suggested by nodular thickening of a previously smooth pigmented area
  - MMPs are well vascularized and fixed to the underlying tissues; while PAM is mobile on them
- through the degeneration of a pre-existing nevus; which increases in volume; becomes pigmented; and is accompanied by an inflammatory reaction
- by spontaneous "de novo" occurrence in apparently intact conjunctiva

- nipple-shaped; blackish; rarely achromatic; highly vascularized formation that bleeds easily and tends to develop on the surface
- dissemination occurs through local extension or lymphatic spread
- The evolution is rapid and serious with invasion of the conjunctiva; cornea; preauricular and submandibular lymph nodes and metastases in the lungs; liver; and brain.

The differential diagnosis of MMP clinically and through anatomical-oatological examination can be made with:

- large nevus that grows at puberty but does not affect the cornea
- melanocytoma – rare; congenital pigmented lesion; with a slow growth rate fixed to the underlying tissue
- pigmented conjunctival carcinoma
- ciliary body or uveal melanoma extending to the sclera
- metastases of malignant melanoma from elsewhere

The treatment of MMP is:

- complete surgical excision followed by
- cryotherapy at the base of the lesion and on its edges
- periodic re-examination every 6-12 months
- for diffuse MMP; excision of the nodules; cryotherapy; mitomycin C are performed
- for invasive tumors in the orbit – exenteration; radiotherapy
- exenteration does not improve the overall prognosis; but will only be applied in extensive and aggressive forms of disease that cannot be otherwise controlled
- lymph node involvement requires radiotherapy
- the presence of metastases requires palliative chemotherapy.

The mortality rate in MMP is 12% at 5 years and 25% at 10 years. In forms developed from PAM with pagetoid pattern; mortality reaches 44%.

Factors indicating a reserved prognosis:

- multifocal tumors
- tumor extension into the tarsal conjunctiva; sac bottoms; caruncle
- tumor with a thickness greater than or equal to 2mm; gives a reserved prognosis
- lymphatic dissemination; orbital
- relapse
- cellular atypia
- development from WFP
- The prognosis depends on the histopathological appearance of the primary acquired melanosis from the tumor composition; in which the presence of the pagetoid growth pattern offers a reserved evolutionary prognosis.
- The depth of invasion gives a more reserved prognosis than the thickness.

**Carunculus Tumors [8]**

**Benign**

- papilloma – 3-%
- snow – 25%
- inclusion cyst
- sebaceous hyperplasia
- sebaceous adenoma
- pyogenic granuloma
- oncocytoma

**Malignant – 5%**

- squamous cell carcinoma
- malignant melanoma
- sebaceous adenocarcinoma

**Secondary Tumors of the Conjunctivus [1;7;11]**

- are malignant neoplasms originating from the eye; orbit; eyelids that reach the conjunctiva by direct extension
- The most important tumor that extends to the conjunctiva is orbital rhabdomyosarcoma in children.
- retinoblastoma; medullary epithelioma in children may extend anteriorly to the episclera
- in adults; uveal melanoma can extend to the conjunctiva
- Squamous carcinoma; malignant eyelid tumors; can occasionally extend conjunctivally.

**Metastatic Tumors of the Conjunctivus [5;6]**

- Uni or bilateral metastases can be uni or multifocal conjunctival lesions extremely rarely
- There may be leukemic infiltrates of the conjunctiva in the form of pale pink; uni-; rarely bilateral subepithelial masses that require systemic chemotherapy and local radiotherapy.

Conjunctival tumors are congenital; acquired. Benign tumors have a favorable prognosis; precancerous lesions must be followed periodically; malignant tumors must be quickly diagnosed and appropriate treatment must be applied; and the patient monitored.

## Conclusion

Congenital or acquired conjunctival tumors are benign clinically evident by the presence of precancerous or malignant tumors that can recur; metastasize; and may even have a vital prognosis. Benign tumors can be: degenerative; dysgenic; embryonal; inflammatory; histiocytic; epithelial; vascular. Conjunctival precancerous lesions are benign tumors with malignant potential. Malignant tumors of the conjunctiva are squamous conjunctival carcinoma. Pigmented tumors of the conjunctiva are benign tumors. Precancerous lesions are primary acquired melanosis with atypia – PAM. Malignant tumors of the conjunctiva are primary malignant melanoma MMP. Treatment of MMP is surgical excision; cryotherapy; exenteration in extension. Secondary tumors of the conjunctiva start from the orbit; eyelids (rhabdomyosarcoma; uveal melanoma). Conjunctival metastases are extremely rare and require chemotherapy and radiotherapy. Benign tumors of the conjunctiva have a favorable prognosis; precancerous lesions must be followed periodically; malignant tumors must be quickly diagnosed and treatment appropriate to the stage of evolution must be applied; and the patient monitored.

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