Pharmacological treatment of eyelid masses

Essay
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By
Sara Sabry Abd El-Magied Ali Badawy
M.B.B.CH.

supervised By
Prof.Dr. Saad Mohamed Rashad
professor of ophthalmology
Faculty of medicine
Ain Shams University

Dr. Azza Mohamed Ahmed Said
Lecturer of ophthalmology
Faculty of medicine
Ain Shams University

Faculty of medicine
Ain Shams University
Egypt - Cairo
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List Of Abbreviations

BCC	Basal cell carcinoma
bFGF	Basic fibroblast growth factor
CDV	Cidofovir
CDVpp	Cidofovir diphosphate
COX-2	Cyclo-Oxygenase-2
ECG	Electrocardiography
HSV	Herpes simplex virus
HZO	Herpes zoster ophthalmicus
I&C	Incision and curettage
IGF-2	Insulin like growth factor -2
IMQ	Imiquimod
INFα	Interferon alpha
IOP	Intraocular pressure
MC	Molluscum Contagiosum
MRI	Magnetic resonance imaging
NSAID	Non steroidal anti inflammatory drug
SCC	Squamous cell carcinoma
TA	Triamcinolone Acetonide
VA	Visual acuity
VEGF	Vascular endothelial growth factor
5-FU	5-Fluorouracil

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Sara Sabry

Introduction

Eyelid problems range from benign to malignant or possibly metastatic tumors. Inflammation, infection, and structural problems such as ectropion, entropion and blepharoptosis may also occur. Fortunately, most eyelid disorders are not vision-threatening or life-threatening; however, some of them cause irritative symptoms such as burning, foreign-body sensation or pain. Recognition and diagnosis of these problems are important to their proper management. Warm compresses and antibiotics are sufficient for many conditions, while excision, cryotherapy or laser treatment is required for some eyelid lesions. ***(Carter.,1998)***

Intralesional triamcinolone acetonide (TA) injection is as effective as incision and curettage (I&C) in primary chalazia. Injection may be considered as an alternative first-line treatment in cases where diagnosis is straight forward and no biopsy is required. ***(Ben Simon et al., 2011)***

Intralesional corticosteroid injection is a good procedure for children, patients with allergy to local anesthesia, chalazia close to the lacrimal drainage system and it is convenient for physicians other than ophthalmologists. I&C operation is recommended for patients with infected chalazia. Combined I&C and intralesional corticosteroid injection is more convenient for

patients with large, recurrent and multiple chalazia. ***(Mustafa and Oriafage ., 2011)***

Ophthalmologists should consider acne rosacea as a potential diagnosis for any child who has any combination of meibomian gland disease, chronic blepharitis, recurrent chalazia and chronic symptoms of photophobia, ocular irritation and redness that don't respond to routine medical treatment. Such patients respond very well to long-term treatment with systemic erythromycin/doxycycline. ***(Cetinkaya and Akova .,2006)***

Conventional treatment for infantile hemangioma include; the use of corticosteroids, laser, surgery and immunomodulator therapy. Recently, systemic and topical beta-blockers have been used to treat infantile hemangioma.The mechanism of action of these drugs remains uncertain but some theories including vasoconstriction, modulation of pro-survival signal transduction pathways and endothelial cell apoptosis are proposed. Whereas no life-threatening adverse events from beta-blocker treatment have been described, there have been reports of bradycardia, hypotension, bronchospasm, hypoglycemia and electrolyte disturbances may result from systemic use of propranolol to treat infantile hemangioma. Sleep and gastrointestinal disturbances have also been frequently reported. Topical timolol application

for localized and superficial tumors may have similar efficacy as oral propranolol with less systemic side effects. ***(Ni et al., 2011)***

Infants can benefit from a rapid reduction in astigmatism resulting from periocular capillary hemangioma following oral propranolol treatment. Propranolol seems to be an effective and safe drug instead of steroids in this patient population. ***(Fabian et al., 2011)***

Local injection of steroids is a simple method of therapy, with a high rate of resolution in cases of hemangioma, but it still have a high degree of bad visual outcome because of persistent astigmatism. Amblyopia could be avoided by preventing corneal steepening from becoming permanent if local injection of steroids is used at the beginning of the phase of enlargement of haemangioma. ***(Langmann and Lindner., 1994)***

Topical, intralesional and systemic chemotherapeutic agents including 5-fluorouracil, cisplatinum, doxorubicin, bleomycin and interferon have been used to treat basal cell carcinomas (BCCs). However, these agents are generally not recommended for tumors in the periorbital region. ***(Haas and Kielty., 1996)***

Topical imiquimod 5% cream (IMQ) therapy is effective for treating periocular BCCs with a cure rate similar to that of surgery with excellent results. IMQ is also useful as an alternative to surgery in patients with periocular BCCs when other therapies have failed or are not possible. ***(Garcia-Martin et al., 2010)***

Aim of the study

To review a literature about different pharmacological drugs used in treatment of some eyelid masses as regard their types, indications, mechanisms of action and side effects.

of the Eyelid

The eyelids are mobile tissue curtain placed in front of the eyeball. They act as shutter protecting the eyes from injuries and excessive light. Also perform an important function of spreading the tear film over the cornea. ***(Khurana and Khurana ., 2006)***

Each eyelid is divided by a horizontal furrow, the superior palpebral sulcus, into an orbital and a tarsal part. The sulcus of the upper eyelid is formed by the insertion of the aponeurotic fibers of the levator palpebrae superioris into the skin. **(Fig.1)** The sulcus of the lower eyelid, which is less obvious, is produced by a few connections between the skin and the orbicularis oculi muscle.

The upper eyelid is larger and more mobile than the lower. The eyelids meet at the medial and lateral angles. The palpebral fissure, the elliptical opening between the eyelids, is the entrance into the conjunctival sac. When wide open, the fissure forms laterally an angle of about 60 degrees, but medially it is rounded.

When the eye is closed, the upper eyelid completely covers the cornea of the eye. When the eye is open and looking straight ahead, the upper lid just covers the upper margin of the cornea.

The lower lid lies just below the cornea when the eye is open and rises only slightly when the eye is closed.

The lateral angle of the eye is directly in contact with the eyeball, whereas the medial rounded angle lies about 6 mm medially from the eyeball. Here the two eyelids are separated by a small triangular space, the lacus lacrimalis, in the center of which is a small, pinkish elevation, the caruncula lacrimalis. A semilunar fold, called the plica semilunaris, lies on the lateral side of the caruncle.

The margin of each eyelid is about 2 mm thick and 30 mm long. The lateral five-sixths of the eyelid margin, the ciliary portion, have squared edges. The medial one-sixth of the margin, the lacrimal portion, has rounded edges. About 5 mm from the medial angle there is a small elevation, the papilla lacrimalis. On the summit of the papilla is a small hole, the punctum lacrimale, which varies in size from approximately 0.4 to 0.8 mm in diameter, the punctum leads into the canaliculus lacrimalis. The papilla lacrimalis projects into the lacus, the punctum and canaliculus serve to carry tears down into the nose.

The eyelashes, which are short, curved hairs, are present on the margins of the eyelids from the lateral angle of the eye to the lacrimal papilla. They are longer and more numerous on the upper

lid and curve upward, while those of the lower lid curve downward, they are arranged in double or triple rows. Just in front of the posterior edge of the margin of the lids are the orifices of the tarsal glands (Meibomian glands). The tarsal glands number about 20 to 25 in each lid, and can be seen as yellowish lines on the inner surface of the everted eyelid.

The orifices of the tarsal glands mark the site of junction between the skin and the conjunctiva. **(Fig. 1)** A grayish line or slight sulcus can sometimes be seen running along the eyelid margin between the eyelashes and the openings of the tarsal glands. This represents the line of demarcation between the anterior portion of the eyelid formed by the skin and orbicularis oculi muscle and the posterior portion formed by the tarsus and the conjunctiva. This line can be important surgically, because it serves as a plane along which the eyelid may be split with minimal scarring. ***(Snell and Lemp ., 1998)***