Dissertation on

A CLINICAL STUDY ON PREVALENCE AND MANAGEMENT OF EYELID TUMOURS

Submitted in partial fulfillment of requirements of

M. S. OPHTHALMOLOGY

BRANCH III

Of

REGIONAL INSTITUTE OF OPHTHALMOLOGY

MADRAS MEDICAL COLLEGE

CHENNAI – 600 003

THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY

CHENNAI-600 003

MAY – 2020

CERTIFICATE

This is to certify that **Dr.A.D.ABINAYA,** Post Graduate student in M.S Ophthalmology, at Regional Institute of Ophthalmology and Government Ophthalmic hospital, Madras Medical College, Chennai, carried out this dissertation on "**A CLINICAL STUDY ON PREVALENCE AND MANAGEMENT OF EYELID TUMOURS"** under our direct guidance and supervision during the academic period from May 2017 to April 2020.

This dissertation is submitted to the Tamil Nadu Dr. MGR Medical University, Chennai for the fulfillment of award of M.S. Degree in Ophthalmology.

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This is to certify that **Dr.A.D.ABINAYA,** Post Graduate student (May 2017 to April 2020) in the Department of Ophthalmology , at Regional Institute of Ophthalmology and Government Ophthalmic hospital attached to Madras Medical College, has done this dissertation work titled **"A CLINICAL STUDY ON PREVALENCE AND MANAGEMENT OF EYELID TUMOURS"** under my guidance and supervision in partial fulfillment of the regulations laid down by The Tamil Nadu Dr.M.G.R. Medical University ,Chennai for **M.S.,Ophthalmology** ,Degree examination to be held in May 2020**.**

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DECLARATION

I, **Dr.A.D.ABINAYA,** solemnly declare that the dissertation titled "**A CLINICAL STUDY ON PREVALENCE AND MANAGEMENT OF EYELID TUMOURS**" has been prepared by me. This is submitted to The Tamil Nadu Dr.M.G.R. Medical University, Chennai, in partial fulfillment of the requirement for the award of M.S. Ophthalmology (Branch - III), degree Examination to be held in May 2020.

Place: Chennai **Signature of the candidate**

Date: **DR. A.D. ABINAYA**

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This is to certify that this dissertation work titled **"A CLINICAL STUDY ON PREVALENCE AND MANAGEMENT OF EYELID TUMOURS"** of the candidate **Dr.A.D.ABINAYA (REGISTRATION NUMBER:221713001)** for the award of **M.S.,DEGREE** BRANCH-III (OPHTHALMOLOGY). I personally verified the urkund.com website for the purpose of plagiarism check. I found that the uploaded thesis file contains from introduction to conclusion pages and result shows **3(three)** percentage of plagiarism in the dissertation.

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I express my sincere thanks to **Prof. Dr. R.JAYANTHI M.D., FRCP(Glasg)** Dean Madras Medical College for giving me permission to conduct the study in this institution.

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INSTITUTIONAL ETHICS COMMITTEE
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Dear Dr.Abinaya.A.D,

The Institutional Ethics Committee has considered your request and approved your study titled **"A CLINICAL STUDY ON PREVALENCE AND MANAGEMENT OF EYELID TUMOURS " - NO.03012018**

The following members of Ethics Committee were present in the meeting hold on **09.01.2018** conducted at Madras Medical College, Chennai 3

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14. Thiru K.Ranjith, Ch- 91 : Lay Person

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

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INTRODUCTION

Eyelid tumours are the most common neoplasms encountered by oculoplastic as well as plastic surgeons . Eyelid tumours may arise from the epidermis, dermis, or eyelid adnexal structures. Most lesions develop from the epidermis which is the rapidly growing superficial layer of the skin. Although many of these lesions may occur on any part of the body skin, their appearance in the eyelids may be unique because of the special characteristics of eyelid skin and the specialized adnexal elements. Sunlight & ultra violet exposure, skin pigmentation are important risk factors for eyelid tumours.

The malignant tumours of the eyelid can be diagnosed clinically based on peculiar features. Proper history taking and thorough ocular examination may reveal certain features of malignancy such as localized loss of lashes, distortion of the eyelid margin, effacement of orifices, ulceration, induration and irregular borders.

Understanding the clinical and histopathologic characteristics of eyelid tumours will help in early diagnosis and management of eyelid tumours.

Most of the benign lesions are managed by observation or by simple excision while malignant neoplasms needs multimodal approach with lid

reconstruction. The challenge of managing these cases lies in adequate tumour clearance with best suitable reconstruction and also ensuring a good cosmetic and functional outcome.

The treatment options available for the management of eyelid tumours vary depending on the clinical picture. Though surgical management has often been primarily described for most tumours, various other modes of treatment like chemoreduction, brachytherapy, radiotherapy are also proved to be of value in the management of these tumours.

The aim of this study is to estimate the incidence of various eyelid tumours that have been encountered in the different age groups and also to analyse the various treatment modalities available and their efficacy in the management of both benign and malignant eyelid tumours.

REVIEW OF LITERATURE

- In a retrospective study of eyelid tumours by Xin Tang et al[24] , 2228 cases with eyelid tumours were analysed and found that of all the cases 292 (13.1%) were malignant lesions and 1910 (85.7%) were benign and 26 (1.1%) were premalignant lesions. In their study the most common Benign tumour was squamous papilloma and most common malignant tumour was basal cell carcinoma.

- In a study conducted in Siriraj Hospital from 2000 to 2004, there was increased incidence of benign tumours, while malignant tumours accounted only 10.8% of all the total eyelid lesions studied[9]

- In a study by Xu et al[25] , 2639 eyelid neoplasms were studied from the Beijing Tongren Eye Center. The authors reported that there was increased incidence of basal cell carcinoma followed by sebaceous cell carcinoma and The mean age of diagnosis was 41 in cases of benign and 60 years for malignant tumours.

- Studies by Cook BE et al[3] and Lee SB et al [4] reported that 90 % of the malignant neoplasms occurring in the lids were basal cell carcinoma. Basal cell carcinoma predominates sebaceous gland carcinoma worldwide.

- However in a study by Ramya et al , sebaceous gland carcinoma ranked first (47.7%) followed by basal cell carcinoma (26.8%) and squamous cell carcinoma (21.9%)[13]

- A study done by Kaliki S et al[8] , 536 Asian Indian population with eyelid tumours were evaluated and reported that in Asian Indians, SGC is two times more as common to BCC.They also observed that prognosis was poor in SGC as compared to other eyelid malignant tumors.

ANATOMY OF EYELID

The surgeon should have a complete understanding about the anatomy of eyelids as it is a complex structure. Eyelids along with the eyelashes form a part of natural defence mechanism of eye. From anterior to posterior , each eyelid consists of following layers

1. Skin
2.Layer of Subcutaneous areolar tissue
3. Layer of striated muscle (Orbicularis Oculi)
4. Submuscular areolar tissue
5. Tarsal plates & fibrous layer
6. Septum Orbitale
7. Layer of non striated muscle
8. Conjunctiva

1. Skin:

The skin covering the eyelids is thinnest in the body and it is lined by stratified squamous epithelium. The epithelium is modified at the lid margin and becomes continuous with that of the conjunctiva. The cilia or eyelashes are arranged in closely set rows and provided with small sebaceous and sweat glands.

2. Sub cutaneous areolar tissue

Beneath the skin lies a loose layer of connective tissue containing no fat. Owing to the absence of fat , it is readily distended by edema or blood.

3. Striated muscle layer:

Orbicularis Oculi (Palpebral sphincter) can be divided into 2 parts.

- The Orbital part and
- The palpebral part

Subdivisions

a) Pretarsal portion

b) Preseptal portion.

The orbital part forms the most peripheral fibres of orbicularis which helps in forced closure of eyelids. The Palpebral part arises from the medial palpebral ligament and posterior lacrimal crest. It is inserted into the lateral canthal tendon and lateral orbital tubercle. The fibres of the pretarsal portion arising from the posterior lacrimal crest help in the drainage of tears by lacrimal sac and are called as Horner's muscle (Pars lacrimalis). Muscle of Riolan (Pars ciliaris) is a part of pretarsal portion which run along the lid margin behind the hair follicles.

Nerve supply:

Both the parts are supplied by temporal and zygomatic branches of facial nerve.

4. Sub muscular areolar tissue:

Lying between the orbicularis muscle and fibrous layer , this layer splits the eyelid into anterior lamina and posterior lamina.

5. Tarsal plates and fibrous layer

Tarsal plate forms the structural framework of the lids giving them shape and firmness. They are composed of firm dense plates of fibrous tissue without cartilage. The upper tarsus is about 10 to 12 mm in height and the lower tarsus is 4mm in height. Both the tarsi are jabout 29 mm long and 1 mm thick. The lateral ends of the tarsi are attached to the whitnall's tubercle and the medial ends are attached to the anterior lacrimal crest.

The medial palpebral ligament (medial canthal tendon) is 4 mm long and arises from anterior and posterior lacrimal crest. At the medial canthus it splits into two bands which are attached to the upper and lower tarsal plate. The lateral canthal tendon is about 7mm in horizontal extent, attached to the Whitnall's tubercle laterally and upper and lower tarsal plates medially.

6. The septum orbitale

This connective tissue layer divides the orbit into 2 compartments – the preseptal and the postseptal compartment.The orbital septum is attached to the

lateral canthal tendon and the lateral orbital rim and it is continuous with the tarsal plates centrally

7.Layer of non striated muscle:

This layer consists of muller muscle fibres arising from the terminal fibres of levator palpebrae superioris muscle in the upper lid and from the inferior rectus muscle in the lower eyelid.

Nerve supply – supplied by the sympathetic nerve fibres

8. Conjunctiva:

Tarsal conjunctiva is lined by non keratinizing squamous epithelium. At the fornix, the palpebral conjunctiva (tarsal conjunctiva) becomes continuous with the bulbar conjunctiva.

Glands of the eyelids

Meibomian glands:

These are vertically arranged glands found within the tarsal plate . There are approximately 25 in upper lid and 20 in lower lid. The ducts of the glands opens into the lid margin and they are seen as small orifices just behind the mucocutaneous junction. The ducts of the glands are lined with stratified

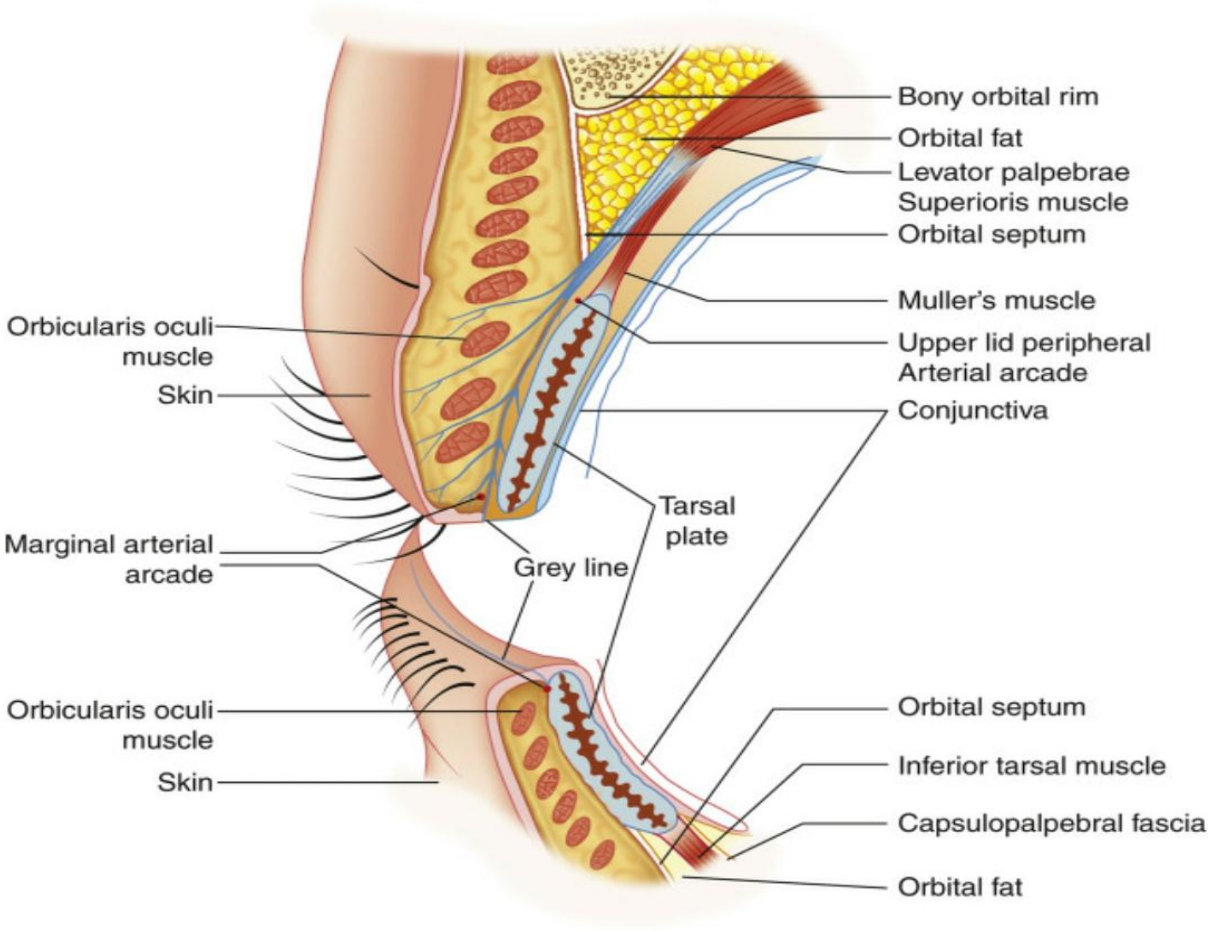
squamous epithelium. Secretions from meibomian gland are thick oily in consistency and yellow in colour

Glands of Zeis

These are modified sebaceous glands which opens into the hair follicles. The sebum which is formed by the glands exudes into hair follicles.

Glands of moll

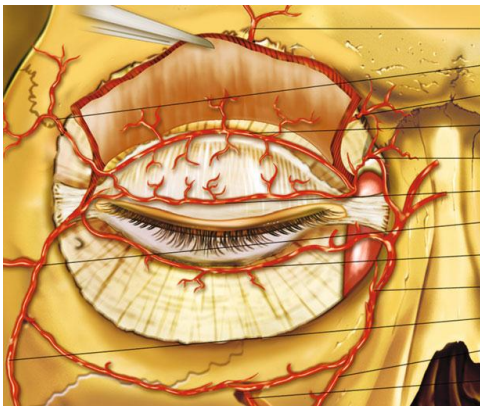
These are modified apocrine sweat glands that are located on the lid margin and they are closely related to the zeis gland. Accessory lacrimal glands include glands of Krause and Wolfring and they are 2 to 3 in each lid.



Arterial supply

In the upper eyelid along the medial aspect , 2 medial palpebral arteries arise from the dorsal nasal artery , a branch of ophthalmic artery—one supplies the upper lid and another supplies the lower lid. Laterally, the lacrimal artery after piercing the orbital septum give rise to two lateral palpebral arteries each supplying the upper and lower eyelids

In the upper eyelid there are two peripheral arcades and in the lower lid, there is no peripheral arcade or only a rudimentary arcade exist .



Venous drainage :

Veins of the eyelids drain into the ophthalmic and angular veins medially and into the superficial temporal vein laterally.

Lymphatic drainage:

Most portion of the upper lid and lateral half of lower lid drains into the **preauricular lymph nodes** . Drainage of medial portion of the upper lid and the medial half of the lower lid is into the **submandibular nodes .**

Nerve supply:

Sensory innervation

Sensory innervation of the eyelids is from the branches of trigeminal nerve – ophthalmic and maxillary divisions

Motor innervation :

The frontal and zygomatic branches of facial nerve innervates the orbicularis oculi muscle. The levator palpebrae superioris receives its innervation from the superior branch of the oculomotor nerve. Muller muscle receives sympathetic innervation.

TUMORS OF THE EYELIDS :

According to Duke Elder , eyelid tumours can be classified into following types

1. EPITHELIAL TUMORS

a. Cutaneous

Benign cutaneous lesions which are epithelial in origin includes

- Senile keratosis
- Papilloma
- Keratoacanthoma
- Seborrheic keratosis
- Inverted follicular keratosis

Malignant cutaneous lesions include

- Squamous cell carcinoma,
- Basal cell carcinoma,

- Intraepithelial carcinoma (carcinoma in situ)

b. Glandular

a) Tumours of sebaceous glands-

1. Sebaceous adenoma
    - Meibomian gland adenoma
    - Zeis gland adenoma
2. Sebaceous adenocarcinoma of
    - Meibomian gland
    - Zeis gland

b) Tumours of sweat glands-

- Hidradenoma of skin , syringoma,
- Pleomorphic adenoma
- Moll's gland adenoma
- Hidradenocarcinoma of skin, Moll's glands

c) Papillary cystadenoma lymphomatosum

d) Oncocytoma

e) Tumours arising from hair follicles

1. Pilomatricoma

2. Trichoepithelioma

3. Trichilemoma

2. MESENCHYMAL TUMORS

Benign mesenchymal tumours include

- Fibroma
- Tuberous sclerosis
- Lipoma
- Rhabdomyoma
- Leiomyoma
- Myxoma.

Sarcoma is the malignant mesenchymal tumour

3. TUMORS OF THE LYMPHORETICULAR TISSUE

- Benign lymphoma,
- Lymphosarcoma,
- Reticulum sarcoma,
- Giant follicular sarcoma,
- Burkitt lymphoma,
- Mycosis fungoides,
- Plasmacytoma.

4. VASCULAR TUMORS

- Hemangioma-
  - Capillary
  - Cavernous

    - Hemangioendothelioma
    - Plexiform
    - Hemangiopericytoma
    - Spiderangioma,
    - Senile angioma
- Telangiectatic granuloma
- Angioteratoma of Mibelli
- Multiple hemorrhagic sarcoma of Kaposi
- Glomus tumour
- Lymphangioma
- Lymphangioendothelioma

5. NERVOUS TISSUE TUMORS

- Neurofibromatosis-
    - Plexiform,
    - Diffuse,
    - Molluscum fibrosum,
    - Multiple mucosal neuroma syndrome
- Neurilemmoma
- Ganglioneuroma
- Granular cell Schwannoma of Abrikossoff

6. METASTATIC CARCINOMA

7. PIGMENTED TUMOURS

1) Naevus

2) Malignant melanoma

8. DEVOLOPMENTAL TUMORS

Dermoids

Teratoma

Phakomatos choristoma

BENIGN TUMOURS OF THE EYELID

Squamous papilloma (Acrochordon) :

A papilloma is the proliferation of skin occuring as a sessile lesion on the lid margin, or a pedunculated lesion (skin tag). The epithelium may be acanthotic,keratotic, and hyperkeratotic. They may be solitary or multiple, pigmented or non pigmented. Surface of the tumour is usually rough and irregular with keratinized crust formation.

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Histology: The tumour comprises of finger like processes of a vascularized debris that is covered with a hyperplastic squamous epithelium.

Lesions such as actinic keratosis, verruca vulgaris, and seborrheic keratosis are some of the differential diagnosis .

Treatment:

- Simple excision.
- Other options include ablative carbon dioxide or argon laser application to the base of the tumor

Seborrheic Keratosis (Basal cell papilloma)

Seborrheic keratosis (basal cell papilloma) are found on the lids of aging individuals. They are well circumscribed lesions that appear to stuck onto the skin surface. They are usually soft and greasy in consistency. The lesion does not extend into the dermis, and there is usually no surrounding inflammation.

Treatment:

Treatment involves surgical excision or laser ablation.

Inverted follicular keratosis

Inverted follicular keratosis is a benign cutaneous lesion which resembles seborrheic keratosis. They may present as nodular lesion, papilloma or pigmented lesions. It differs from seborrheic keratosis by its rapid growth pattern. Surgical excision is the treatment of choice.

Kerato acanthoma

- They are elevated dome shaped lesion and it is often considered to be low grade form of squamous papilloma.
- Usually seen in middle aged individual
- They are solitary lesion and most commonly seen in lower lid
- Rapid growth is seen over a period of 2–6 months.

Treatment:

Treatment options includes

- Observation
- Cryoapplication
- Surgical excision
- Spontaneous regression have been reported in some cases.

Pilomatricoma

They are derived from germinal matrix of hair bulb. Commonly affects young females. Histology shows basophilic cells at periphery with irregular epithelial Islands. In the centre calcification is seen. Excision of lesion is the treatment of choice.

Pseudo epithelomatous hyperplasia:

They usually occur in areas treated with cryosurgery and also in patients with chronic ulcers. It is a benign condition arising from epidermis showing active proliferation of squamous cells. Clinically seen as a hyperkeratotic nodule.

Cystic lesions:

Eccrine hidrocystoma:

- They usually occur as a solitary lesion
- commonly affects middle aged women.
- Lid skin has number of sweat (eccrine) glands and modified sweat (apocrine) glands like Moll glands.
- Eccrine hidrocystoma are ductal retention cyst resulting from blockage of these glands.
- These cysts are translucent and shiny.
- Treatment includes surgical excision.

Epidermal inclusion cyst:

- Small white-yellow cystic lesions commonly seen on the lid skin or conjunctiva.
- They may develop spontaneously or following trauma or may be seen along an incision line after surgery.
- They arise from pilosebaceous follicles or by surface epidermis invagination
- Rupture of cyst with secondary granulomatous reaction may occur

Treatment: Surgical excision.

Sebaceous cyst:

- They are generally found in locations with many hair follicles – the brow area and medial canthus.
- Clinically simulate epidermal inclusion cyst but they differ from it in that sebaceous cyst contains keratin, epithelial cells , fats, and cholesterol crystals.
- Occur as a result of obstruction of zeis gland or meibomian gland
- Histology shows pallisading nuclei in the periphery.

Treatment involves

Total excision

Recurrence is common.

Stabbing the cyst with needle is not recommended.

Benign Melanocytic lesions

Melanocytic lesions arises mainly from three types of cells

- Nevus cells,
- Dermal melanocytes and
- Epidermal melanocytes.

Eyelid nevi may be

- Junctional,
- Compound, or
- Intradermal.

They form the stages in the life cycle of a nevus. “Kissing nevus,” a variant of congenital nevus, presents with pigmentation of upper and lower eyelids as the nevus had developed before embryologic separation of the eyelids.

Junctional Nevi

It has well-defined nests of cells at the level of dermal epidermal junction.

Compound Nevi

Has characteristics of both junctional and dermal nevus.

Dermal Nevi

In dermal nevus cells are seen entirely in the dermis. Excision is the treatment of choice if they are cosmetically unacceptable or if they cause irritation.

Premalignant lesions:

Actinic keratosis :

Actinic keratosis, also known as solar keratosis, is seen in patients with chronic sun exposure. Diagnosing a case actinic keratosis earlier is significant because they are considered as precursors of squamous cell carcinoma.

More common in fair skinned individuals and in elderly above 50 years of age. It is reported 25% of these lesions may regress spontaneously , and in 12% to 20% of cases malignant transformation occurs, most commonly into squamous carcinoma.[1,2] Usually seen as reddish-brown scaly lesions in sun exposed areas of the lids.

Treatment :

- Cryotherapy or curettage
- As they are precancerous, excision with biopsy of larger lesions is recommended.

Bowen's Disease (Carcinoma in situ)

- It is an intraepidermal form of squamous cell neoplasia
- Elevated nonhealing erythematous lesions
- Histologically epithelium shows hyperkeratosis, parakeratosis, dyskeratosis, and acanthosis.
  - Bowen's disease differs from actinic keratosis in that the epithelium is completely replaced by full thickness atypia in the former.
  - Unlike in SCC , there is no basement membrane invasion in bowen's disease.
- Progression to invasive squamous cell carcinoma is seen in 5% of cases.

Treatment

- Complete surgical excision
- Other treatment option includes cryoapplication.

Merkel cell tumour

The Merkel cell is of neural crest origin found within the epidermis and dermis. They function as touch receptors. These tumours are seen in older individuals most commonly. Histopathologically tightly packed round or oval cells showing plenty of nucleoli arranged in sheets or clusters are seen. This picture resembles that of lymphoma.

Vascular Tumours of eyelids include

- Capillary hemangioma
- Cavernous hemangioma,
- Miscellaneous (varices and lymphangiomas**)**

1) Capillary Hemangioma:

- Also known as strawberry nevus or strawberry hemangioma.
- Most common benign vascular tumour of the eyelid.
- Noticed during the first few weeks of life.
- Clinically they may appear as a bluish mass under the skin or a reddish mass in the conjunctiva.
- Microscopically consists of lobules of capillaries and each lobule separated by fibrous septa.
- Spontaneous involution is seen within first decade.

Treatment options include

- Use of sclerosing agents
- Radiotherapy
- Local steroids injection
- Systemic steroids
- Systemic and topical beta blockers
- Surgical excision.

2) Cavernous hemangioma

- Usually acquired
- Unlike capillary hemangioma they don't involute spontaneously and are located in deeper layers.
- Histologically they display large endothelium lined vascular channels with thick fibrous walls.

Treatment

As they tend to involve surrounding skin , surgical excision may be indicated.

3)Varices and lymphangioma

They comprises of abnormally distended vein, artery, or lymphatic vessel. Orbital varices and lymphangiomas are much more common than isolated eyelid orbital and lid varices may be associated with additional venous malformations elsewhere in the body may be associated with orbital and lid varices.Clinically, lid varices and lymphangiomas may resemble each other.

Lymphangiomas tend to enlarge on Valsalva maneuver and on staining. If associated with orbital varices , the patient may present with proptosis. On palpation, varices may feel like a bag of worms.They may rupture on trivial trauma and bleed heavily.

Treatment :

Ligation of small sections of the varix or lymphangioma may achieve the desired cosmetic effect and improve patient comfort.

Neurofibromatosis :

Also known as Von Recklinghausen's Disease ,is a systemic condition characterized by Schwann cells proliferation of the peripheral nerves.

Most common mode of inheritance - autosomal dominant trait. The eyelids hang in baggy folds because of diffuse thickening and hypertrophy of

eyelid skin. This may result in an ‘S’-shaped configuration or severe ptosis of the upper lid.

Treatment is limited. Response to radiation therapy is poor. If the lesion is large and cosmetically unacceptable surgical debulking can be done.

Pyogenic granuloma

- They occur in response to trivial trauma or following rupture of chalazion or after surgery in the wound site.
- Pyogenic granuloma presents as a painless polypoid reddish mass which are granulation tissue mass with acute inflammation.
- **Treatment** – Shave excision of the lesion is the treatment of choice.

Dermoid cyst:

Dermoid cysts are choristomas (tumour like mass containing normal cells in abnormal location). They are believed to be caused by sequestration of surface epidermis during development.As this sequestration occurs adjacent to suture lines, dermoid cyst are common seen along the bony suture lines.

They clinically present as a smooth painless subcutaneous nodules beneath the lateral eyebrow or near the medial canthus. X-ray orbit is usually normal in cases with subcutaneous dermoids. If an associated orbital component is present, there may be defects in the orbital bones adjacent to the lesion.

Treatment :

Superficial dermoids are excised through a skin incision. The incision is made slightly larger than the long axis of the cyst and should be parallel to the brow and in a lid crease.

Molluscum Contagiosum

Molluscum contagiosum is a viral infection caused by the poxvirus (molluscum contagiosum virus). Clinically,they are seen as a pearly umblicated nodule.

Histopathology examination reveals lobules of acanthotic and degenerative epithelial cells with characteristic intracytoplasmic inclusion bodies – "Henderson-Patterson bodies".

Treatment - Excision by cryotherapy.

Verruca Vulgaris: (Wart)

Verruca vulgaris and verruca plana are caused by identical or closely related human papilloma viruses. Verruca vulgaris - characterized by a solid growth with a irregular papillomatous surface. Verruca plana is a flatter and smoother lesion that may be pigmented/non pigmented.

Complete excision of the wart is the best method of treating these lesions. In some cases, cryotherapy at the base of the lesion may prevent recurrence[26].

MALIGNANT TUMOURS OF THE EYELID

Most common eyelid malignant tumours include :

1. Basal cell carcinoma

2.Sebaceous gland carcinoma

3. Squamous cell carcinoma

Other tumours like lymphoma , malignant melanoma and secondaries occur with much less frequency.

Features suggestive of malignancy :

- Distortion of normal architecture of eyelid margin.
- Loss of cilia
- Elevated pearly telangiectatic margins
- Enlarging pigmented irregular lesion
- Indurated area

Basal cell carcinoma

Most common site - Lower eyelid and the medial canthus.

The tumor most often occur in the sixth, seventh, and eighth decades of life and there is no sex predilection.

The major predisposing factor include chronic sun exposure in a fair-skinned person**.** Other risk factors include ionizing radiation, local trauma. Early onset is seen in certain heritable diseases like Xeroderma pigmentosum, basal cell nevus syndrome and albinism.

Varied clinical presentations such as nodular, ulcerative, nodulo ulcerative growth and multicentric pattern may be seen**.** The most common type is an firm,indurated, nodular lesion, often with fine telangiectasia. The nodular type tends to be least aggressive.

In the ulcerative pattern, there is a true ulcer crater within a raised, pearly margin. This type of ulcerative clinical presentation is termed as rodent ulcer. This type usually shows a deeper more infiltrative dermal component. Morpheaform or sclerosing basal cell carcinoma is the other subtype of BCC. Clinically,they appear as a indurated flat plaque. The morpheaform type is usually the most aggressive form of BCC.

Histologically nest of basophilic tumour cells with peripheral palisading is seen. BCC are locally destructive and distant metastasis is seen very rarely.

Treatment

Three important treatment options include

- Surgical excision with microscopic evaluation of the margins.
- Cryotherapy - For lesions less than 10 mm (0.4 in) in diameter
- Radiation therapy.

Chemotherapy - Doxorubicin , cisplatin used in cases of recurrence.

Sebaceous carcinoma:

Sebaceous gland carcinoma may arise from the Zeis gland,the meibomian glands, the sebaceous glands associated with hair follicles or those located in the caruncle, or the sebaceous glands of the eyebrow. The mean age of presentation is 61 years, but the tumour can present as early as the second decade. There is no sex or race predilection. Upper lid is more commonly involved than lower lid because of the large number of meibomian glands in the upper lid.

The sebaceous carcinoma may be aggressive with orbital invasion or systemic metastasis. The most commonly involved lymph nodes are the preauricular and the submandibular nodes.

It may present as a lesion similar to a chalazion or as a diffuse lesion mimicking blepharoconjunctivitis. A recurrent chalazion in an elderly at the

same site of incision curettage should raise suspicion of sebaceous gland carcinoma.

Histology reveals poorly differentiate cells with foamy basophilic cytoplasm and prominent nucleoli. The oil-red-O stain can be used to demonstrate the lipid production in frozen sections.Pagetoid spread is seen in 30% of sebaceous gland carcinoma.

Treatment:

` Wide surgical excision with 5-6 mm of margin clearance followed by frozen section evaluation of the margin is indicated. If pagetoid spread occurs on the bulbar conjunctiva, then the treatment of choice is exenteration. Metastatic work-up should be done once the diagnosis is made. If there is any lymph node involvement, neck dissection is then performed.

Radiotherapy of >55 Gy dose when given appropriately is a curative treatment for eyelid sebaceous carcinoma. It is suggested as an alternative for patients not willing for surgery[27].

Squamous cell carcinoma:

Squamous carcinoma may arise *de novo* or from a pre-existing intra epithelial neoplasia or actinic keratosis. Early diagnosis and treatment is important since there is increased tendency to metastasize. Local lymph node involvement is common in recurrent cases.

Age of presentation :

The invasive type mainly affects fair-skinned elderly individuals with history of chronic sun exposure. Presentation is earlier in patients with albinism and those in immunocompromised state.

Clinical presentation:

SCC may present as papillomatous, nodular, cystic, or ulcerated. A patch of actinic keratosis nearby can clinch the diagnosis clinically.

Precancerous lesions :

- Bowen's Disease
- Actinic keratosis
- Radiation dermatoses
- Xeroderma pigmentosum.

Histology:

Eosinophilic (pink-staining) cluster of atypical hyperchromatic squamous cells with abundant mitotic figures,acanthosis, parakeratosis, and dyskeratosis may be seen. The hallmark of invasive squamous cell carcinoma is that it invades the dermis and does not respect the basement membrane. In more differentiated tumours ,high degree of keratinization with numerous keratin pearls are seen.

Treatment:

Treatment of choice is surgical excision followed by lid reconstruction. Extensive nonresectable lesions can be managed by radiotherapy or cryotherapy. Chemotherapy has a role in cases with multiple lesions. Orbital exenteration is preferred in cases of orbital invasion.

Malignant Melanoma

Malignant melanoma accounts for about 5% of all skin cancers. Malignant melanoma arises on the lid rarely, constituting only 1% of all eyelid malignancies. Eyelid melanoma also may occur as a distant metastasis or extension of a conjunctival melanoma. Lower lid is most commonly affected.

They arise from epidermal melanocytes and is histologically classified into four different types of tumours:

- Lentigo maligna melanoma
- Superficial spreading melanoma
- Nodular malignant melanoma and
- Acral lentiginous melanoma.

The first three types can occur on the eyelid, the acral lentiginous type occurs only on distal extremities.

Histology :

Histology displays atypical melanocytes showing many dysplastic features, such as nuclear atypia, pleomorphism, and mitotic figures.

Treatment :

Surgical excision is the treatment of choice. Prognosis can be predicted based on tumour thickness. Tumors <0.76 mm thick have a 100% five-year survival rate, whereas tumors >1.5 mm (0.06 in) thick have less than a 50% five year survival rate.

Kaposi Sarcoma:

Kaposi sarcoma , a tumour of vascular origin ,is generally seen in elderly individuals. In people with AIDS and other immunosuppressive conditions, it may present at an younger age.

Histology

Kaposi sarcoma consists of proliferating endothelial cells that form slit-like, blood-filled spaces. Positivity for factor VIII is seen in immunohistochemistry.

Lymphoma:

Lymphomas which affect the eye and ocular adnexa usually appear in the orbit or in the subconjunctival area. However, occasionally lymphomas affect the eyelid tissues. B-cell lymphoma of the eyelid presents as a thickened, necrotic ulceration involving the external surface of the lid with loss of lashes. Lymphomas may also present as ptosis or upper/lower lid thickening

Treatment

Available treatment options include

Radiation therapy

Chemotherapy or

Combination of radiation and chemotherapy.

MANAGEMENT OF EYELID TUMORS:

The successful management of lid malignancy depends on correct histological diagnosis, assessment of tumour margins and the extent of systemic spread.

Both excision and incision biopsy can be done to obtain specimen for histopathological examination. Though surgery is the mainstay of treatment in most cases of lid malignancy , non surgical treatment also plays a role.

Non surgical treatment options include

- Cryotherapy (cryosurgery)
- Radiotherapy
- Use of local or systemic corticosteroid
- Laser therapy
- Interferons
- Chemotherapy

Cryotherapy

Used for

Malignant tumours – Basal cell carcinoma and squamous cell carcinoma.

Benign lesions- Verruca, papillomas and molluscum.

Method of cryoapplication include direct liquid nitrogen spray or circulating liquid nitrogen applied with the help of applicator tip.Tumor is frozen to -30°c using freeze thaw freeze technique (double freeze or triple freeze).

The complications are depigmentation, loss of lashes, notching or malposition of lid margin .

Radiotherapy and Electron beam therapy:

Radiotherapy are effective in treating squamous cell carcinoma, basal cell carcinoma, lymphoma as they are radiosensitive. Benign lesions such as larger solitary sessile papilloma, multiple papilloma of lid , capillary haemangiomas also respond well to radiotherapy. RT is used in cases where surgery is contraindicated.

Methods include

- Contact therapy,
- Brachytherapy
- External beam radiation

For Basal Cell Carcinoma, a total dose of 45-65 Gy in fractionated doses is given after shielding of the eye and 1 mm of normal lid is included in the field of radiation.

Complications of radiotherapy are lid atrophy , necrotic skin changes, dry eyes secondary to lacrimal drainage obstruction ,corneal ulcer and scarring.

Intra lesional corticosteroids

Kushner's regimen is used for treating capillary hemangiomas .This regimen recommends injections of 40mg triamcinolone and 6mg betamethasone acetate and betamethasone phosphate usually 1-2 ml. 2 or more injections are usually required for better response.Involution begins several days after injection and considerable response is seen within 2-4 weeks.

Laser therapy

Carbon dioxide laser is used for

Benign lesions - Capillary hemangioma, actinic keratosis & seborrheic keratosis,Papilloma.

Malignant tumour – Basal cell carcinoma.

With the application of CO2 laser, tissue vapourization occurs and it also prevents lymphatic spread by sealing the lymphatics.

Other lasers:

Argon laser,

Nd YAG laser and

Dye laser are also used in the management of capillary hemangioma.

Chemotherapy:

Indications

- basal cell carcinoma which are not resectable and
- squamous cell carcinoma in situ .

Topical 5-Fluorouracil is used for squamous cell carcinoma in situ and systemic cisplatin , bleomycin ,doxorubicin are used in the management of non resectable BCC.

Interferons:

Used in treating capillary hemangioma and basal cell carcinoma.

Intralesional injection of human recombinant ά- interferon inhibits endothelial and fibroblast proliferation.

Complications include neurotoxicity, retinal vasculopathy, vomiting, leukopenia.

SURGICAL MANAGEMENT

Currently two techniques are accepted for surgical treatment of tumours.

1. Standard surgical resection with frozen section control using microscopic evaluation of margins.

2. Mohs micrographic surgery.

Mohs Micrographic Surgery (MMS)

This technique was first described in 1930 by Fredrick Mohs. The advantage of this method is that it provides a three dimensional view of the lesion. Fresh tissue technique –Mohs chemosurgery. In this technique. After injecting local anaesthetic agent ,lesion is excised by thin layers and the sections are stained and numbered. Tumour can be followed and any extentions beyond the clinically apparent tumour can be removed.

Better results are seen in cases of morphea form of BCC, recurrent BCC , smaller tumours > 2cm and tumours that have subclinical spread.

Advantages

- Avoids inadequate tumor margin resection.
- Cure rate – 95%
- Low tumor recurrence rate

Standard resection with frozen section control

Complete excision of the tumour with 3-5mm of normal tissue around the tumour should be removed. All the margins of the specimen must be evaluated by taking thin slices of the excised tumour borders. If extension to any of the tumour margin is identified then further excision is done in that area to ensure complete removal.

Advantages:

- Ensures complete removal of tumours,
- Cure rate is high and
- Reduced rate of recurrence,
- Better cosmetic outcome

General principles in eyelid reconstruction:

The main aim of eyelid reconstruction is the reconstitution of structural and functional property of the eye mainly the adequate lid closure. Proper assessment of the size of the defect and closure of the resulting defect with appropriate flap techniques are the key to successful eyelid reconstruction.

Assessment of the amount of inner and outer lamellar defects is also important in planning the surgery. Either the anterior or the posterior eyelid lamella is reconstructed with a graft but not both. Blood supply must be provided by one of the layers.

Anterior Lamellar Defects

1. Direct skin closure
2. In cases with medial canthal defects , Laisser- Faire is indicated.
3. Skin flaps

Flaps can be classified as

• Sliding flap – here undermining is done to obtain skin relaxation.

• Rotation flap — In this the flap is rotated around the axis so that the remaining defect is closed directly or with the skin graft.

• Advancement flap(Tenzel, U, H, O-T, O-Z) –to obtain greater mobilization relaxing incisions are made on either side of the flap.

• Transposition flaps-this includes skin muscle flap from forehead to lower eyelid, from upper eyelid to lower eyelid and the nasolabial flap.

The advantages of flaps over a skin graft is that flap carries its own blood supply and causes less contracture. Cosmetically results are good because of better colour and texture match.

Skin grafts-

Most common sites from which grafts can be obtained include

- Preseptal upper lid,
- Post auricular,
- Supraclavicular regions.

Posterior Lamellar Defects

Posterior lamellar flap for lower lid defect can be taken from upper lid tarsal plate. Upper lip & lower lip mucosa, cheek hard palate can be used as a posterior lamellar grafts.

Full thickness Defects

When there is full thickness defect involving both the anterior and posterior lamella combination of flap and graft are used.

<25% defect in its horizontal extent- Direct closure

<33% defect- Direct closure with cantholysis

<50% defect- Lateral rotation flap

>50% defect- Pedicle flap, Kollner for lower eyelid, Cutler- Beard for upper eyelid.

Transmarginal Pentagonal Wedge Resection

- Can be done for lid margin involving lesions or lesions involving full thickness of the eyelid .
- Pentagonal wedge excision of the lesion is done to avoid wrinkling of skin while closure.

Eyelid defects with margin involvement

Upper eyelid defects

1) Small defects:

For small upper eyelid defect with margin involvement , direct closure is indicated. If smaller area (< 33%) of eyelid is involved and in cases in which the two cut edges can be brought together without creating tension, direct closure of the defect is appropriate .

Lateral canthotomy/cantholysis : Indicated for small to moderate upper eyelid defects in which direct closure seems to produce undue stress on the apposition line. Here the lateral canthal tendon is cut to increase the mobility of lid. If increased tension still exists on the lid margin, the skin must be mobilized by a rotational flap from the inferolateral aspect.

2)Moderate defects:

For moderate defects involving 33% - 50% , Tenzel semicircular skin flap procedure can be done and canthotomy is done to allow increased mobilization of the eyelid. Alternate switch flap taken from lower eyelid can also be used. If the upper lid defect is large, Switch flap technique may be combined with a lateral canthal rotational flap to mobilize more tissue.

4) Large defects;

Cutler Beard procedure is employed if the upper eyelid defects are very large (involving >70% of upper eyelid).In this technique , a full thickness lower lid flap is taken and mobilized under the bridge of the lower lid margin . The lower lid flap is divided into 2 layers: the deeper conjunctivo-capsular layer and the superficial skin orbicularis layer. The deeper layer is sutured to the residual conjunctiva of the upper lid and the superficial layer is sutured to the margin of the lid. The flap is left for 3 months so that it stretches. After three months the flap is divided and new lid margin is reformed with conjunctiva.

Other eyelid flaps from remote area includes

- Median forehead flap
- Temporal forehead flap- Fricke flap

Lower eyelid reconstruction :

Small defects:

Small defects involving <33% can be repaired by primary closure. Lateral canthotomy can be done additionally to increase the eyelid mobility.

Moderate defects:

For moderate defects involving 33-50% of lower lid , advancement flap (Tenzel advancement flap) or a tarso conjunctival flap from upper eyelid with full thickness skin graft for anterior lamella(Modified Hughes procedure) can be used.

Large defects:

Mustarde's rotational cheek flap procedure:

In this one staged procedure , a large myocutaneous cheek flap is mobilized and undermining are done in segments. Buccal mucous membrane graft can be used for posterior lamella. Choncal cartilage or a chondromucosal cartilage can also be used to form posterior lamella.

Glabellar V-Y rotation flap :

This is indicated for moderate-sized medial canthal defects involving the medial canthal margin. An inverted *V* shaped incision is marked over the glabellar area and the flap is created. This flap is mobilized and undermined leaving a wide pedicle at the bridge of the nose. The flap is then sutured to its margin in such a way that an inverted Y shaped line is formed.

EXENTERATION:

- Indicated in cases of advanced malignant tumours with globe and orbital infiltration.
- Destructive procedure that involves removal of all the contents of orbit along with periosteum.
- Following surgery granulation tissue proliferates and it is allowed to cover the orbital walls.
- Split skin graft or mucus membrane graft can also be used to cover the walls .
- To overcome the cosmetic defect, patients are provided with spectacle mounted prosthesis after surgery.

AIM OF THE STUDY

To study the incidence of eyelid tumours and to analyse the treatment modalities available for eyelid tumours.

OBJECTIVES

- To estimate the incidence of eyelid tumours with respect to age, sex,lids,orbital / globe involvement.

- To analyse the various treatment modalities and their functional and cosmetic outcome.

INCLUSION CRITERIA:

Patients presenting with benign and malignant eyelid tumours

EXCLUSION CRITERIA:

Patients presenting with other inflammatory lesions like chalazion, hordeolum internum and externum.

MATERIALS & METHODS

This is a prospective study conducted at orbit & oculoplasty department, Regional institute of ophthalmology, Egmore, Chennai for a period of 1 year.

Methodology:

Detailed history including the onset , duration ,progression, associated features such as pain, discharge or bleeding from the lesion, site of involvement, history of co morbidities, past history of medical and surgical treatment were noted .

Ocular examination including size ,shape, location, extent ,margins of the ulcer/swelling and lymph node examination was done.

Routine investigations like blood pressure, blood sugar ,complete blood count, X-ray chest and X-ray orbit was performed in patients eyelid tumours. For larger lesions or if globe/orbital infiltration is suspected, CT scan brain and orbit was done. Biopsy either excision or incision was done for all the tumours and sent for histopathological examination. After HPE confirmation of malignant tumours wide local excision with 4-5 mm margin clearance was done. Defect in the eyelid was reconstructed using appropriate reconstruction procedure.

Patients with globe and orbital invasion were referred to tumour board and destructive procedure like exenteration was done after getting clearance. Patients who required adjuvant radiotherapy or chemotherapy were referred to the department of oncology. All patients were followed up at regular intervals to look for tumour recurrence for 1 year.

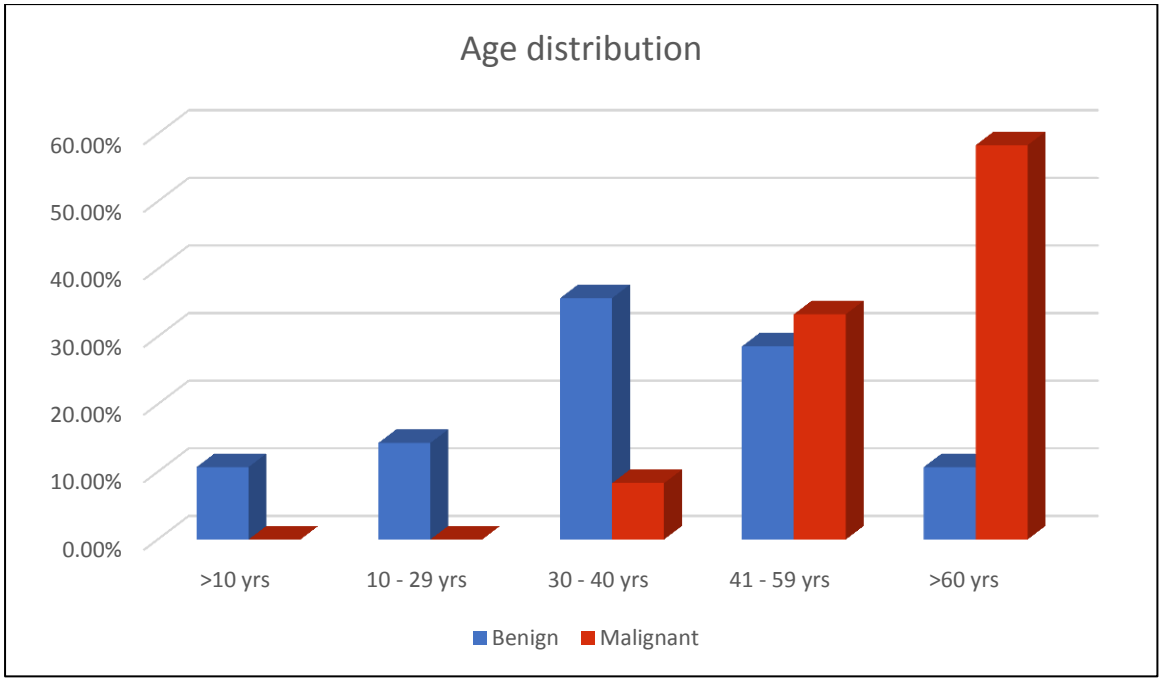
RESULTS AND ANALYSIS

1. Age distribution

Table 1 : Age Distribution of Patients

Age group	Benign	Malignant
< 10 yrs	3 (10.71%)	-
10 – 29 yrs	4 (14.28%)	-
30 -40 yrs	10 (35.71%)	1 (8.33%)
41 – 59 yrs	8 (28.57%)	4 (33.33%)
>60 yrs	3 (10.71%)	7 (58.33%)

Chart 1 : Age Distribution of Patients



In this study, malignant tumours were commonly in the age group between 60-85 years and benign tumours were common in the age group of 30-45 years.

2 . Age distribution of malignant tumours

Table 2 : Age Distribution of malignant tumours

	Range	No
Basal cell carcinoma	55 - 85	3
Sebaceous gland carcinoma	35-85	7
Squamous cell carcinoma	40-50	2

3. Sex distribution

Table 3 : Sex Distribution of Patients

	Male	Female
Benign	16 (57.14%)	12(42.85%)
Malignant	5 (41.66%)	7 (58.33%)

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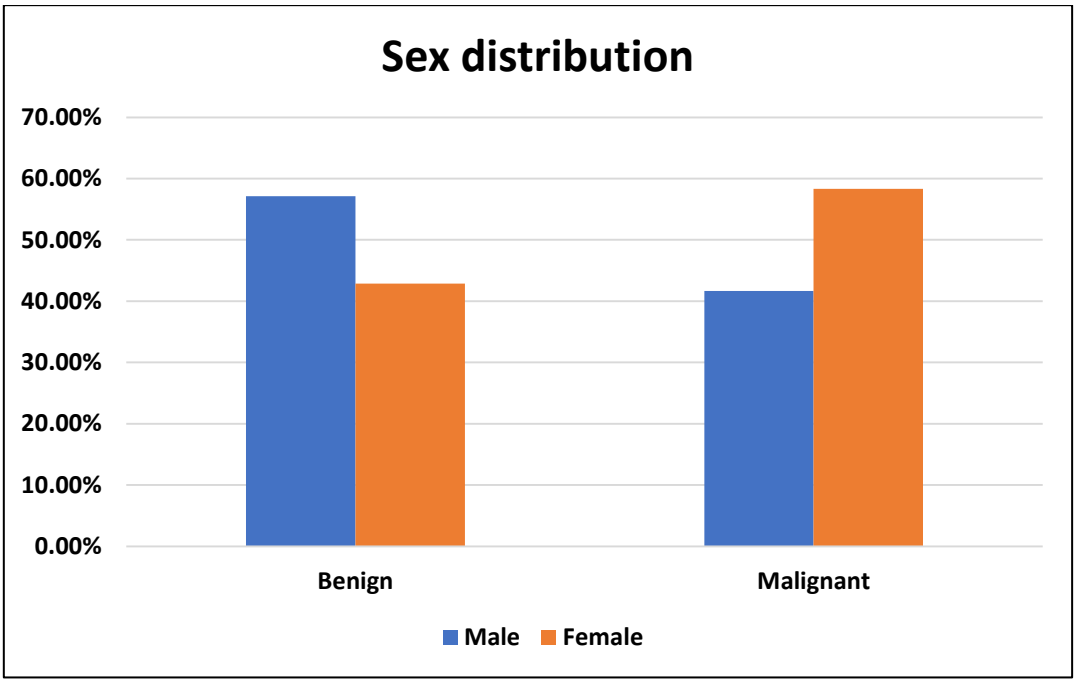
Chart 2 : Sex Distribution of Patients



In this study male patients were affected more with benign tumors and female patients were affected more with malignant tumors

4. Sex distribution in malignant tumours

Table 4 : Sex Distribution in malignant tumours

Tumour	Male	Female
Sebaceous gland carcinoma	3	4
Basal cell carcinoma	1	2
Squamous cell carcinoma	1	1

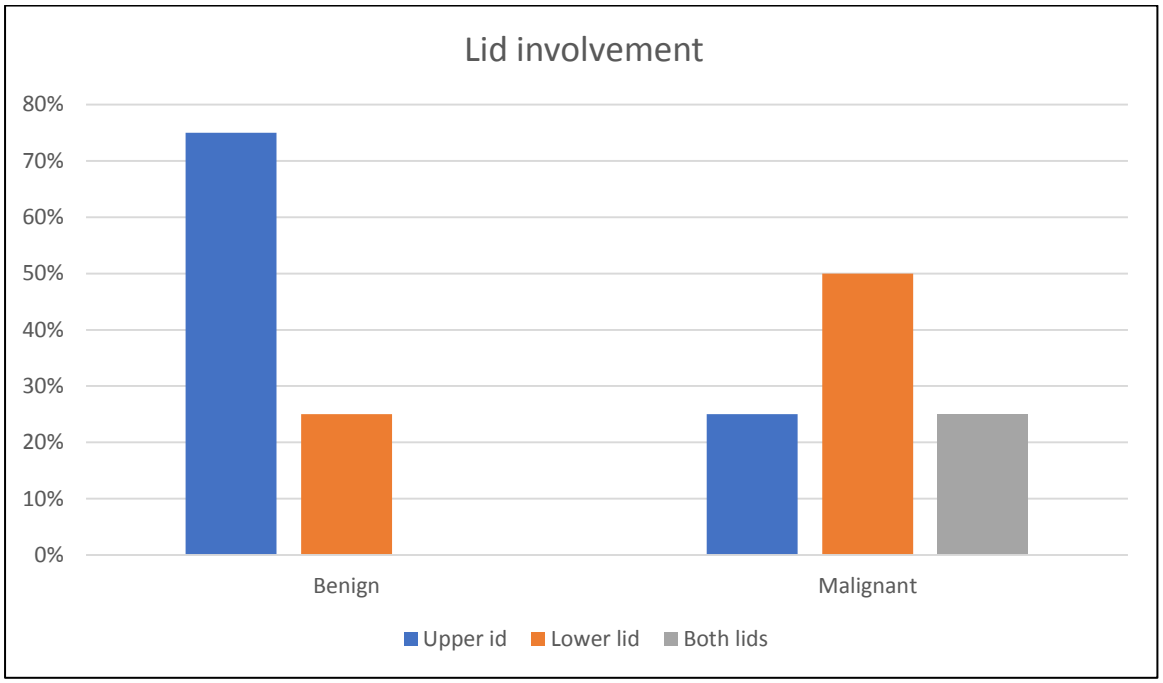
The incidence of sebaceous gland is common among female as compared to male. Our finding corroborates with the finding of a study conducted by Dr Raza Rizvi [5] at Al Nahdha Hospital, Muscat.

5. Lid involved

Table 5 : Lid involvement

	Upper lid	Lower lid	Both
Benign	21 (75 %)	7 (25%)	-
Malignant	3 (25%)	6 (50%)	3(25%)

Chart 3 : Lid involvement

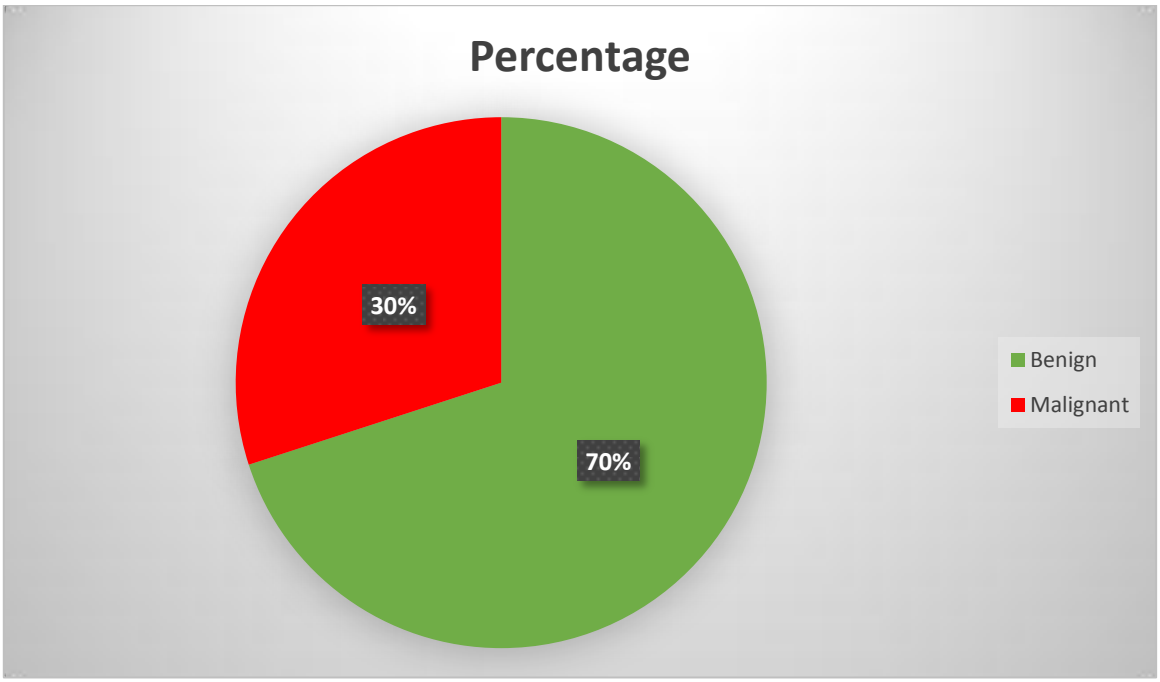


In this study, benign tumours were found to occur more commonly in the upper lid and malignant tumours in lower lid. This is similar to the study conducted by Gosai et al in which there was higher incidence of lower lid involvement in malignant tumours[7].

6.Benign Vs malignant

Out of 40 cases , 28 (70 %) eyelid lesions were benign and 12 (30%) cases were malignant.

Chart 4 : Benign vs malignant



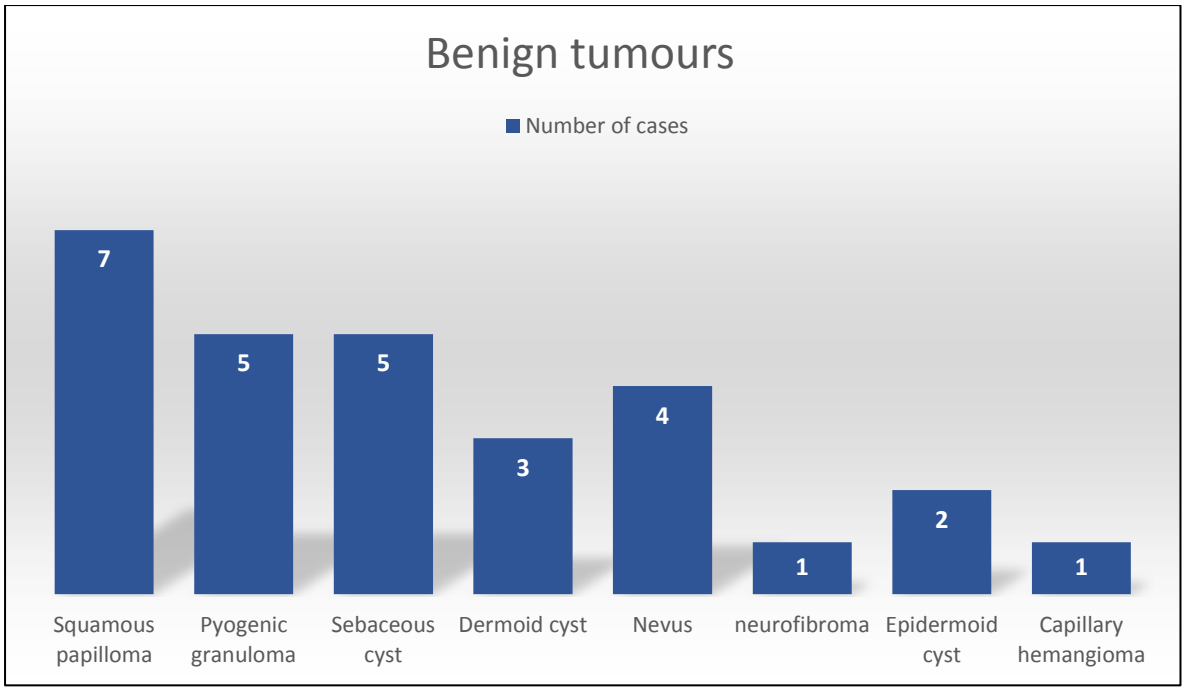
In a retrospective study by Sha Sha Yu & Xin Tang [24], they concluded that benign tumours are significantly more common than malignant tumours .This correlates with our study where benign tumours outnumbers the malignant tumours of eyelids

7. Incidence of individual tumours :

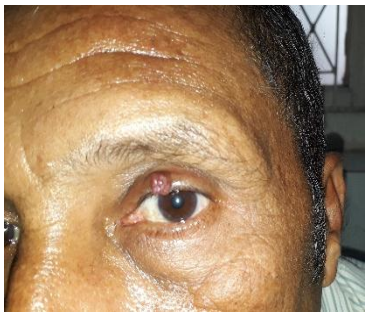
Table 6: Incidence of benign tumours

Tumour	No	%
Squamous papilloma	7	25%
Pyogenic granuloma	5	17.85%
Sebaceous cyst	5	17.85%
Dermoid cyst	3	10.71%
Intradermal nevus	4	14.28%
Wart	1	3.57%
Epidermoid cyst	2	7.14%
Capillary hemangioma	1	3.57%

Chart 5 : Incidence of benign tumours



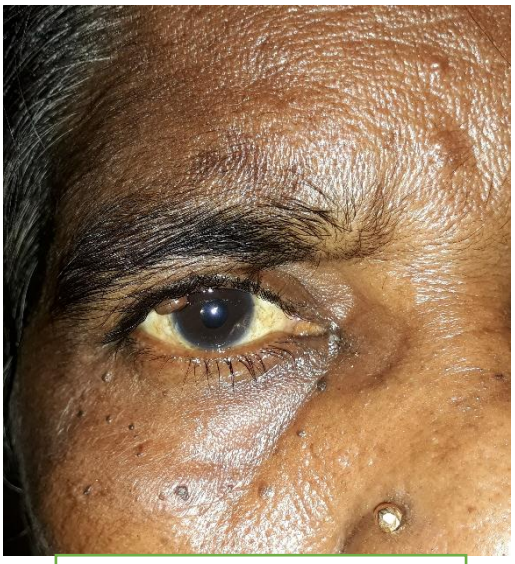
Squamous papilloma was found to be the most common benign tumour in this study and this is followed by pyogenic granuloma.



Squamous papilloma

Pyogenic granuloma

Sebaceous cyst



Intradermal nevus

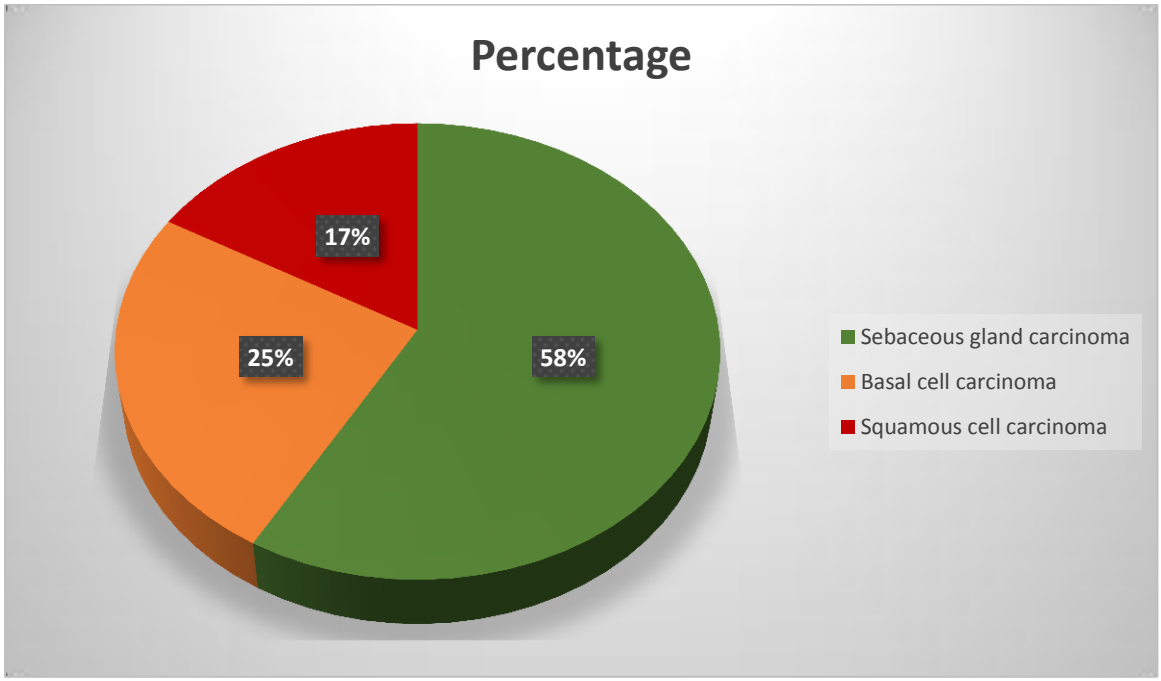
Epidermoid cyst

Incidence of Malignant tumours

Table 7 : Incidence of malignant tumours

Tumours	No	Percentage
Sebaceous gland carcinoma	7	58.33%
Basal cell carcinoma	3	25 %
Squamous cell carcinoma	2	16.66%

Chart 6 : Incidence of malignant tumours



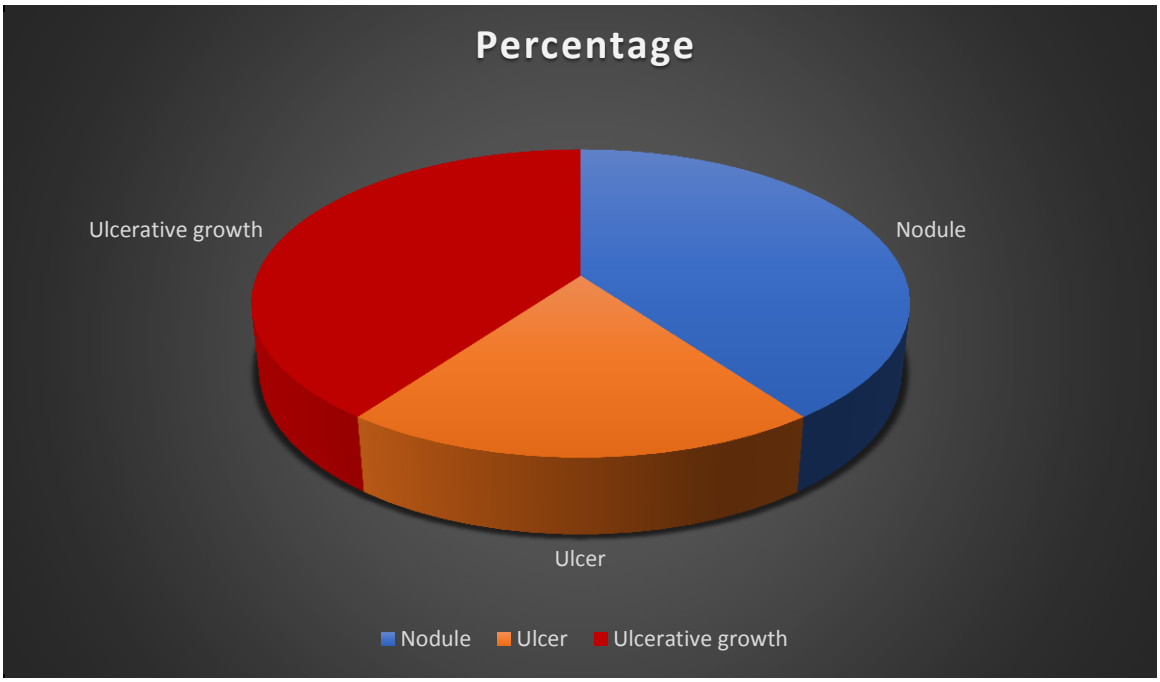
The study by Deprez and Uffer[14] reported that basal cell carcinoma accounted for 86% of all malignant tumors. In this study however we found that sebaceous carcinoma is the most common malignant tumour.

8. Clinical presentation of malignant tumours

Table 8 : Clinical presentation of malignant tumours

	SGC	BCC	SCC	%
Nodule	3	-	1	33.33%
Ulcer	-	1	1	16.66%
Ulcerative growth	4	2	-	50%

Chart 7: Clinical presentation of malignant tumours



The most common presentation of malignant eyelid tumours was in the

form of ulcerative growth pattern.In our study both ulcer and nodular pattern is seen in case of BCC. Sebaceous adeno carcinoma of meibomian gland presented in the form of nodule and ulcerative growth pattern.

9.Tumour Infiltration

Table 9 : Tumour infiltration

Tumour infiltration	Globe	Eyelid skin & orbit
Sebaceous gland carcinoma	1	2
Basal cell carcinoma	-	1
Squamous cell carcinoma	-	-

In our study tumour infiltration of the eyeball was most common in case of sebaceous adenocarcinoma of meibomian gland. Although basal cell carcinoma may invade the eyelids and orbit, intra ocular invasion was rare. The lesion seldom metastasizes and rarely causes death.

10.Lymph node involvement

Table 10 : Lymph node involvement in malignant tumours

Tumours	No	Percentage
Sebaceous gland carcinoma	4	57.14%
Basal cell carcinoma	1	33.33%
Squamous cell carcinoma	1	50%

Lymph node metastasis is most commonly found in sebaceous gland carcinoma in our study.

11.Management of benign tumours

The treatment for most of the benign tumour was simple excision and the excised tissue was sent for histopathalogical examination. The cosmetic outcome was good postoperatively for most of the benign tumours.

In our study one case of capillary hemangioma was managed with systemic and topical beta blockers. The Child was started on oral propranolol 1 mg/kg body weight and 0.5% timolol eye drops twice a day after obtaining paediatrician and cardialogist. Baby was reviewed once in three months by ophthalmologist and paediatrician.The lesion started regressing after 4 months of treatment and the treatment was continued with periodic review.

At 4 months of age

At 6 months of age

At 9 months of age

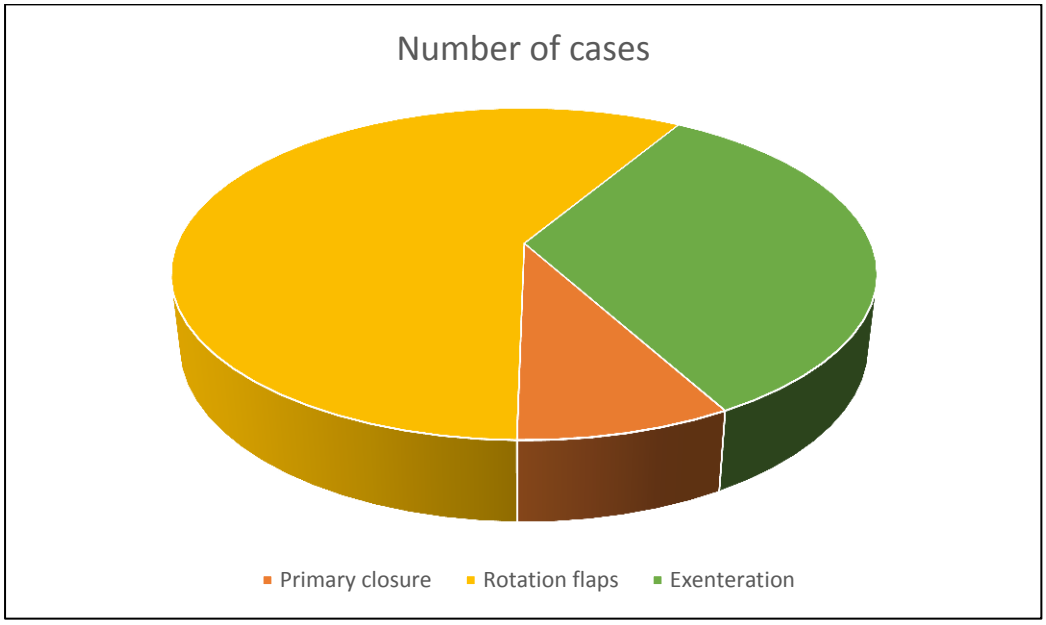
- Marginal shave excision was done in 5 cases of pyogenic granuloma.

Management of malignant tumours

Table 11 : Management of malignant tumours

Tumours	Excision with primary closure	Rotation flaps				Exent-eration	Radio-therapy
		TAF	CuB	HTCF	Gl F		-
Sebaceous gland carcinoma	1	1	1	-	1	2	-
Basal cell carcinoma	-		-	1	-	1	1
Squamous cell carcinoma		1	-	1	-	-	

Chart 8 : Management of malignant tumours



- In all the cases of malignant tumours wide local excision with 4-5 mm margin clearance was done and the specimen sent for histopathological examination .
- In one case with sebaceous gland carcinoma involving up to one fourth of the lid, tumor was excised and the resulting defect was closed in three layers i.e. conjunctiva and tarsus,orbicualris muscle and skin.
- One case of sebaceous carcinoma and squamous cell carcinoma involving the lateral aspect of lower lid was repaired after excision, with Tenzel lateral advancement flap.
- In one case of sebaceous gland carcinoma with diffuse thickening of whole of the upper lid the tumor was excised and the defect closed with cutler beard technique. After 2 months secondary reconstruction was done.
- In one case of meibomian carcinoma involving the medial aspect of lower lid, excision of the tumour was done and the defect repaired with Glabellar rotation flap.
- In one case of Squamous cell carcinoma and basal cell carcinoma, Hughes tarsoconjunctival flap was performed after tumour excision as the defect involved more than 75% of the

lower lid without involvement of canthus.

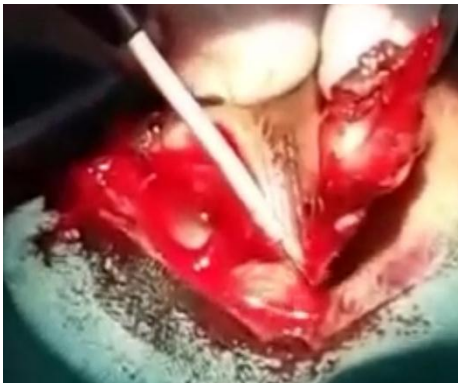
- One case of basal cell carcinoma managed with tumour excision and Fricke's flap with chondromucosal graft came to us with recurrence of tumour.She was advised exenteration as she presented with orbital infiltration of the tumour. As the patient was not willing for surgery radiotherapy was given as advised by oncologist.
- 2 cases of sebaceous cell carcinoma and one case of basal cell carcinoma with orbital infiltration underwent orbital exentration.
- One case of advanced sebaceous gland carcinoma who presented to us with infiltration of globe and orbit was advised exentration as the primary procedure.The patient was not willing for surgery and lost follow up after that.

Squamous cell carcinoma of upper lid

Squamous cell carcinoma of lower lid before lid reconstruction

Immediate post operative picture after lid reconstruction with Hughes flap

Preoperative picture of Sebaceous carcinoma of lower lid

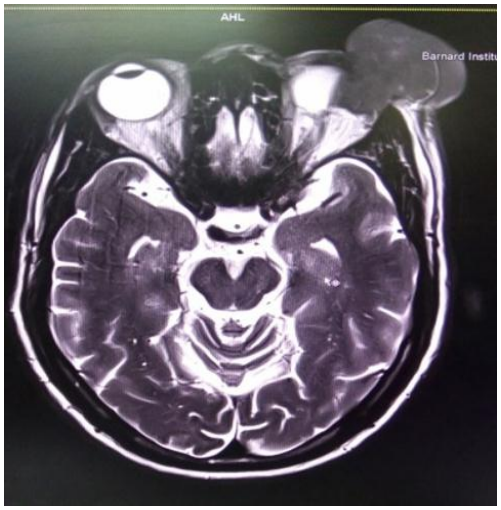


Intraoperative pictures of lid reconstruction with glabellar flap

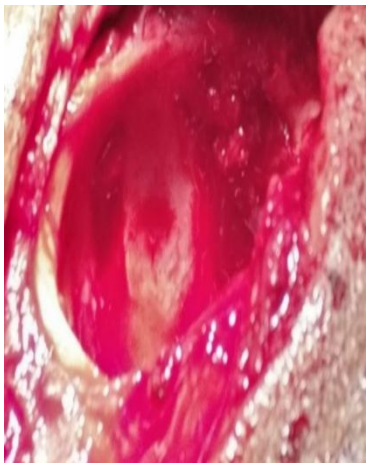
Late postoperative picture

Pre operative and post operative picture of sebaceous cell carcinoma of lower lid managed with tenzel lateral advancement flap

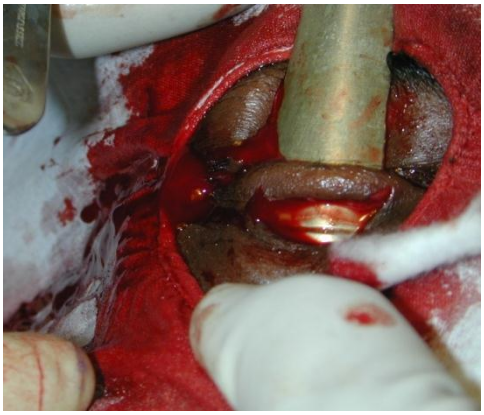
Invasive sebaceous gland carcinoma



T1 imaging shows hypointense lesion with cystic areas present in the lateral aspect involving skin and subcutaneous tissue



Following total orbital exenteration



Intraoperative pictures of Cutler beard technique

DISCUSSION

- In our study 40 patients with eyelid lesions were analyzed. Out of which 28 patients(70%) had benign eyelid tumours and 12 patients (30%) had malignant eyelid tumours . This is comparable with a study by Rathod et al where among 100 cases of eyelid tumours 61 were found to be benign and 39 were malignant[7].

- Age of the patients with benign eyelid tumours ranged 30-60yrs and malignant eyelid tumours were between 35-80yrs . A case of sebaceous gland carcinoma presented to us at younger age of 36 years and highest age of (84 years) was for basal cell carcinoma. A study by Kale (2012) et al[13] from India observed that the mean age of presentation of malignant eye tumours was 59 years which is in accordance with our study.

- In our study ,the malignant tumour incidence was more in female patients and benign tumours are most commonly found in male patients. In a study by Gosai et al , 120 cases with eyelid lesions were studied and found that the male to female ratio was 1.4:1 for benign tumours whereas females outnumbered males with ratio of 1.16:1 for malignant tumours which correlated with our study[6]

- Out of 30% of malignant eyelid tumours, Sebaceous gland carcinoma is the most common tumour accounting for 58.33%. Basal cell carcinoma is the second most common accounted for 25%.This is similar to the studies done by Krishnamurthy et al[10] and Jahagirdar et al[11] which found higher incidence(30-40%) of sebaceous gland carcinoma in India.

- Among Benign eyelid tumours squamous papilloma is the most common tumour in our study and this is comparable to the studies by Ni et al[18] from China observed that squamous papilloma is the most common benign eyelid tumour. Increased incidence of papilloma was also observed in studies conducted by Gundogan *et al*'s[12] and Deprez and Uffer's[14]

- The most common presentation of malignant tumours of the upper eyelid was in the form of ulcerative growth. Majority of sebaceous gland carcinoma presented in the form of ulcerative growth and nodule. A study by Syed Ali Raza Rizvi et al[5] found that that most common clinical presentation of SGC was a nodular mass lesion.

- In this study,the most common location of malignant tumour was the lower lid. This corroborates with the studies by A Bagheri et al[17] and Mary Ho et al[19] where they found lower lid to be the most common site of malignant tumours.

- Studies by Kale et al[13] , Suresh Saquil et al[16] and various other studies have reported greater occurrence of sebaceous cell carcinoma in the upper eyelid. However in our study lower lid is most commonly involved in cases of sebaceous carcinoma.

- In Basal cell carcinoma, intraocular invasion is rare but eyelids and orbit involvement may occur. Metastasis is rare in BCC and mortality is also less.In our study there is one case of basal cell carcinoma with eyelid and orbital involvement without globe infiltration .

- Most of the malignant tumours in our study was managed by tumour excision with 5 mm surgical clearance and the full thickness defect after removal of large tumour promptly treated with appropriate flap techniques. Standard Surgical Excision (SSE) of tumour free margin of 4 mm recommended for Basal cell carcinoma and for squamous cell carcinoma it is 4 mm to 6 mm [20 , 21] .

¤ In our study , procedures like Hughes tarsoconjunctival flap for lower eyelid defect, Cutler-Beard two stage procedure for upper eyelid defect were used when the defect is very large (>50% lid involvement). In a study by Gündüz et al ,lid sharing procedure was preferred for defects more than 50% and Tenzel flaps for defects between 25 – 50% [23]

SUMMARY

A total of 40 patients with eyelid lesions were studied.

- Benign tumours were more commonly seen than malignant tumours.
- Benign tumours were common in the age group between 30-50yrs and malignant tumours were common between 60-80yrs.
- Female patients were more commonly affected by malignant tumours and male patients were affected more commonly by benign tumours.
- Benign tumours were commonly found on upper lid and malignant tumours were commonly found on lower lid.
- Among Benign tumours squamous papilloma is the commonest tumour. Among malignant eyelid tumours sebaceous gland carcinoma is the commonest tumour and basal cell carcinoma is the second most common tumour.
- Sebaceous gland carcinoma involved mainly the lower lid which is in contrast to the previous studies .

- Most common type of presentation of basal cell carcinoma was ulcer and sebaceous gland carcinoma presented in the form of ulcerative growth and nodules.

- Infiltration of tumour to globe and orbit were increasingly seen in sebaceous gland carcinoma.

- Excision of the tumour was the common treatment modality used for benign tumours and reconstruction of lid followed by excision was used for malignant tumours.

- In advanced cases of malignant tumours with globe and orbital infiltration, exenteration was done as a primary procedure to prevent mortality.

CONCLUSION

Histopathologic examination of all excised lesion must be done as an innocuous looking lesion might be malignant. Early clinical diagnosis of malignant tumours with confirmation by incision biopsy , will aid in complete wide excision of tumour. After wide excision of malignant tumour appropriate lid reconstruction technique is done as a primary procedure to obtain good functional and cosmetic outcome. Advanced tumours with orbital involvement and recurrent tumours will need adjuvant chemotherapy and radiotherapy. Extensive procedures like exenteration are done for locally infiltrating tumours involving the globe.

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PROFORMA

Name of the patient :

Date of Admission :

Age/Sex :

Date of surgery:

Hospital number :

Date of Discharge:

Occupation :

History:

Onset

Progress

Pain

Discharge/bleeding

Similar lesions elsewhere

Trauma

Treatment - Medical / Surgical

Personal History

Diabetes

Hypertension

Loss of weight / appetite

Bowel / Bladder habits

On examination:

Vision

Extraocular movement

Bony orbits

Lids

Tumor/ulcer

Upperlid, lowerlid

Medial / lateral canthus

Margin involvement

Size, shape margin, measurement

Base/floor of ulcer

Discharge / Blood

Tenderness, consistency

Skin around the tumor

Mechanical ptosis / ectropion

Madarosis, Trichiasis

Extension to adjacent structures

Adherence to bone / globe

Conjunctiva

Extension of tumor

Bulbar / Palpebral

Congestion, discharge

Cornea

Ant chamber

Iris

Pupil - reaction to light

Direct

Consensual

Lens

Fundus

Duct patency

Intraocular pressure

Lymph Nodes:

Pre auricular, submandibular, submental, cervical nodes size, consistency,

mobility tenderness

General examination

Abdominal examination

Respiratory system

Cardiovascular system

Central Nervous system.

Clinical impression:

Investigations:

Blood : Hb, Tc, Dc, ESR, peripheral smear, Fasting Blood Sugar, Post

Prandial Blood sugar, urea, creatinine ,serum electrolytes, liver function test , Grouping, cross matching

Urine: Routine / microscopy

X-ray : Chest PA view

X ray orbit AP, Lateral

CT scan brain and Orbit

Histopathology Gross

Microscopy

Impression

Treatment:

1. Medical

2. Surgical - excision of tumour

Reconstructive procedure

Primary closure

Flap / Graft or

Exenteration

3. Adjuvant therapy - Radiotherapy / Chemotherapy

Follow up
1st month
3rd month
6th month

Late
Examination of surgical site / flap/graft
Recurrence:

KEY TO MASTER CHART

- ✓ Sw – Swelling
- ✓ Gr - Growth
- ✓ Ul - Ulcer
- ✓ Rt - Right
- ✓ Lt - Left
- ✓ SCC- Squamous cell carcinoma
- ✓ SGC – Sebaceous gland carcinoma
- ✓ BCC- Basal cell carcinoma
- ✓ SC - Sebaceous cyst
- ✓ Cap H - Capillary hemangioma
- ✓ PG - Pyogenic granuloma
- ✓ DC - Dermoid
- ✓ Pap - Papilloma
- ✓ EC - Epidermoid cyst
- ✓ Nev- Nevus
- ✓ UL - Upper lid
- ✓ LL - Lower lid
- ✓ MC - Medial Canthus
- ✓ LC- Lateral canthus
- ✓ M - Margin
- ✓ Pt - Ptosis

- ✓ Ent - Entropion
- ✓ MSE- Marginal shave excision
- ✓ TAF- Tenzel advancement flap
- ✓ CuB- Cutler Beard technique
- ✓ Gl.f- Glabellar flap
- ✓ HTFC- Hughes tarso conjunctival flap
- ✓ PC- Primary closure
- ✓ RT- Radiotherapy
- ✓ PA - Preauricular
- ✓ SM – Submandibular
- ✓ Ex- Excision
- ✓ EX- Exenteration
- ✓ MM- Medical management