



CASE SERIES OF MEIBOMIAN GLAND CARCINOMA OF THE EYELIDS.

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ABSTRACT **Aim:** To study the clinical presentation and treatment outcomes of Meibomian Gland Carcinoma of the eyelids in a teaching hospital.

Methods: Clinical presentation and treatment outcomes of seven cases of histopathologically proven Meibomian Gland Carcinoma that presented to Government Regional Eye Hospital, Andhra Medical College, Visakhapatnam during the time period of September 2016 to September 2017 were studied.

Results: All the seven patients were females. The mean age of the patients was 53 years. Upper eyelid was involved in 6 cases (85.71%) and lower eyelid was involved only in 1 case (14.28%). All the seven cases (100%) presented in the advanced stage. Wide local excision with reconstruction of the eyelid defect was done for all the cases (100%). Tenzel's semicircular flap was done as the reconstructive procedure for 6 cases (85.71%) and Mustarde's Cheek rotation flap was done for one case (14.28%). 2 cases (28.57%) had tumor cell infiltration in margins of the excised specimen of which one case developed recurrence at 8 weeks post operative period. Three cases (42.85%) were lost for follow up indicating the lack of awareness regarding this lethal condition among patients.

Conclusion: High index of suspicion is needed on the part of the Ophthalmologist to not to miss a case of Meibomian Gland Carcinoma. Wide Local Excision with Lid reconstruction is an effective procedure for the treatment. Awareness is needed among the public as well as the patients regarding this trivial looking lethal condition of the Eyelids.

KEYWORDS : Meibomian Gland Carcinoma, Eyelids, Tenzel's Flap, Mustarde's Flap

INTRODUCTION:

Sebaceous gland carcinoma (SGC) is a highly malignant neoplasm that arises from the Meibomian glands, the glands of Zeis, and the sebaceous glands of the aruncle and eyebrow. It is an aggressive tumor with a high recurrence rate, a significant metastatic potential, and a notable mortality rate.¹⁻³

Although it is relatively rare, SGC is the third most common eyelid malignancy, accounting for 1–5.5% of all eyelid cancers. It affects all races, occurs in women more often than men, and usually presents in the sixth to seventh decades, but cases in younger patients have been reported.⁴ The cause of SGC is unclear. However, there are reported associations that link SGC with prior radiation therapy⁵ and with the production of nitrosamines and photosensitization from prior diuretic use.⁶

The upper eyelid is the site of origin in about two-thirds of all cases, but SGC may arise from any of the periocular structures previously mentioned⁷ and may have a variety of clinical appearances. It often presents as a firm, yellow nodule that resembles a chalazion. It may present as a plaque-like thickening of the tarsal plate with destruction of Meibomian gland orifices and tumor invasion of eyelash follicles leading to madarosis, or loss of lashes. Also, SGC may mimic a chronic blepharconjunctivitis, meibomianitis, or chalazion that does not respond to standard therapies, thus the term 'masquerade syndrome.'

Wide surgical excision of the tumor with microscopic monitoring of the margins of the excised specimen is the procedure of choice for treatment of Sebaceous gland carcinoma.⁸ Radiation therapy can be considered as an adjunctive treatment to local surgery, however the primary treatment with radiotherapy alone is inadequate and is associated with recurrence of the tumor within three years of irradiation.⁹

Sebaceous gland carcinoma is an invasive and potentially lethal tumor. It may invade locally into the orbit, the eyeball, the paranasal sinuses or the brain. The tumor related mortality rate in earlier reports was very

high around 30%.¹⁰ Increased clinical suspicion of the tumor and early treatment with histological confirmation of complete excision of the tumor wherein the margins of the excised specimen are free of tumor cell infiltration have reduced the mortality rate and conferred a better prognosis as per the recent reviews.¹¹ The mortality rate of the non-metastatic disease is 0 to 15% whereas the presence of distant metastasis carries a poor prognosis with a 50-67% 5-year mortality rate.^{10,12} Chemotherapy is a treatment modality for systemic metastasis of the malignancy.

MATERIALS AND METHODS:

Study Design: Retrospective study

Study Period: All the cases between September 2016 and September 2017 were studied.

Study Setup: A Tertiary Eye Hospital

Inclusion Criteria:

Patients who have presented with complaint of swelling over the eyelids and that were Histopathologically proven to be Meibomian Gland Carcinoma during the study period were included on the study.

Methodology:

Retrospective analysis of the data of the patients satisfying the Inclusion criteria was done.

Statistical Analysis:

Descriptive Statistics were used to analyze the results.

Case Reports:

Case Summary 1: (Figure 1)

A 50-year-old, Housewife, Deaf and Dumb by birth presented to our Hospital with a mass over the left upper eyelid of 1-year duration, which was initially the size of a maize grain and then gradually increased to the size of a peanut. On Examination there was a 2.5x1.5 centimeter sized, hour glass shaped swelling at the middle one-thirds of the left upper eyelid with an ulcerated, lobulated and vascularized

surface on the side of upper palpebral conjunctiva on eversion of the eyelid. There was a palpable post-auricular lymph node on the left side probably indicating metastasis. The swelling as well as the Lymph Node were non-tender. A provisional diagnosis of Meibomian Gland Carcinoma was made based on the clinical features. Wide Local Excision of the lesion with a margin of 5mm of normal tissue was done and the defect in the eyelid was reconstructed with a Tenzel's Semilunar Flap and the wound was sutured in layers and the excised specimen was sent for Histopathological Examination, the report of which came as Meibomian Gland Carcinoma. Follow up of the patient was done at 2 weeks, 4 weeks and 3 months post operatively. The flap was well taken up, the wound was healthy and there was no recurrence.



Figure 1

Case Summary 2: (Figure 2)

A 35-year old female, housewife by occupation presented to our hospital with a swelling over the Right Lower Eyelid of 3-months duration which was initially the size of a rice grain that started on the inner side of the right lower lid and it gradually progressed to the present size of 2 cm x 1 cm over the past 3 months. The patient complained of occasional pain in the swelling.

On Inspection there was a single, 2 cmx 1cm sized mass over the Right Lower Eyelid occupying the entire eyelid except for the medial 1/8th part of the eyelid. The mass was extending from a distance nearly 0.75 centimeter away from the medial canthus upto the lateral canthus. The mass was oval in shape, with a lobulated, ulcerated and vascularized surface on the palpebral conjunctival side. The surface of skin over the swelling was smooth. The margins of the swelling were well defined. Loss of Eyelashes over the Right Lower Eyelid were noted. It was firm in consistency on palpation and there was no regional lymphadenopathy. A provisional diagnosis of Meibomian Gland Carcinoma was made based on the clinical features and an Incisional Biopsy was performed which conformed the diagnosis. Wide Local Excision of the lesion was done which included 5mm of normal tissue margins. Reconstruction of the eyelid defect was done by a Mustarde's Cheek Rotation flap. The patient was lost for follow up after surgery.



Figure 2

Case Summary 3: (Figure 3)

A 51-year old female, house wife by occupation presented to our hospital with chief complaint of a growth over the Right Upper Eyelid of 1-year duration which was initially the size of a rice grain and has now reached the size of a peanut. On Inspection there was 1cmx0.5cm sized oval shaped lobulated mass arising from the lateral one-fourths of the eyelid. On eversion of the eyelid the conjunctival surface was lobulated, ulcerated and vascularized. On palpation the swelling was non-tender and firm in consistency. There was no regional Lymphadenopathy. A provisional diagnosis of Meibomian Gland Carcinoma was made based in the clinical features. Wide Local Excision with 5mm of Normal tissue margins followed by eyelid

reconstruction with Tenzel's Semicircular flap was done. The excised specimen was sent for Histopathological Examination, but unfortunately only the lateral margin was free of tumor infiltration, the rest of the margins had tumor infiltration. The patient developed a recurrence at 8 weeks post-operative period and the case was referred to an Oncologist for further management.



Figure 3

Case Summary 4: (Figure 4)

A 65-year old female, Housewife by occupation presented to our hospital with a chief complaint of swelling over the Right Upper Eyelid of 1-year duration. On examination, there was a single, oval shaped, 1.5cmx 1cm sized swelling over the middle one-fifths of the eyelid with ulceration over the inferior surface of the swelling. It was non-tender and firm in consistency. There were no regional lymph nodes. A provisional diagnosis of Nodulo-ulcerative form of Basal Cell Carcinoma was made. Wide local excision including 5mm of normal tissue margins followed by lid reconstruction with Tenzel's Semicircular flap was done. The excised specimen was sent for Histopathological examination which diagnosed it as Meibomian Gland Carcinoma. The patient was followed up till 6 months, there was no recurrence or sign of distant spread.



Figure 4

Case Summary 5: (Figure 5)

A 65-year old female, cook by occupation presented to us with a swelling over the Right Upper Eyelid of 5 months duration. The patient gave a history of recurrent chalazion at the same site and She underwent an Excision Biopsy for the same 1 year back and the Histopathological diagnosis came to be Meibomian Gland carcinoma. So, this was diagnosed as a recurrence of Meibomian Gland Carcinoma. There was no regional Lymphadenopathy. Wide Local Excision with inclusion of 5mm of normal tissue margins with reconstruction of the eyelid defect with Tenzel's Semicircular flap was done. The patient again developed a recurrence 3 months after the excision but was reluctant to take further treatment inspite of persuasion and was lost for follow up.

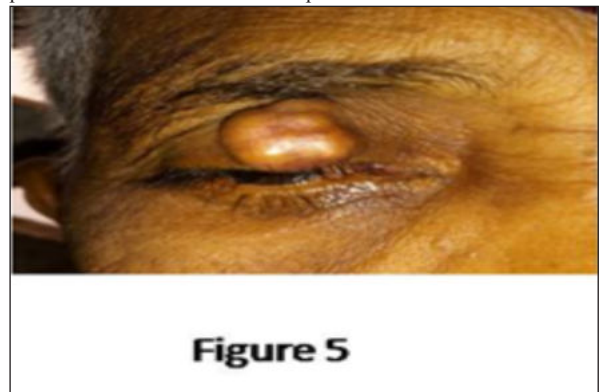


Figure 5

Case Summary 6: (Figure 6)

A 52-year old female, labourer by occupation presented with a swelling over the Right Upper Eyelid of 7 months duration, which rapidly increased in size over the past 2 months, associated with pain and bleeding on touch. On examination there was a 1cmx0.5cm sized elliptical shaped mass arising from the anterior surface of the eyelid as well as the eyelid margin at the junction of medial three-fifths and lateral two-fifths of the eyelid. The inferior surface of the swelling was ulcerated and vascularized. The conjunctival surface of the eyelid was normal on eversion of the eyelid. On palpation it was tender and firm to hard in consistency but was not bleeding on touch though the patient has complained of it. There was no regional Lymphadenopathy. A provisional diagnosis of Squamous cell carcinoma was made based on the clinical features. Wide Local Excision with 5mm of Normal Tissue margins followed by reconstruction of the eyelid defect with Tenzel's Semilunar Flap was done. The excised tissue was sent for Histopathological Examination and the diagnosis came out to be Meibomian Gland Carcinoma. This patient was lost for follow up despite adequate counseling.



Figure 6

Case Summary 7: (Figure 7)

A 60 year old female patient, labourer by occupation came to hospital with chief complaint of growth over Right Upper Eyelid since 3 months, which rapidly increased in size over the past 1 month. The swelling is not associated with any pain, bleeding, discharge or itching. On examination there was a 0.5cm * 0.5 cm sized swelling over the right upper eyelid arising from the lid margin and anterior surface of eyelid just above the eyelash line at the junction of medial 2/3rds and lateral 1/3rds of the upper eyelid. The surface of the swelling was lobulated. There was no loss of eyelashes. Skin over the swelling was normal. On eversion of the eyelid, the conjunctival surface was vascularized and lobulated. The swelling was non-tender and hard in consistency on palpation. There was no regional lymphadenopathy. The swelling was subjected to excision biopsy with closure of the eyelid defect with Tenzel's semi-circular flap technique. Histopathological diagnosis was reported to be Meibomian Gland Carcinoma with tumor cells infiltrating the lateral and inferior margins of the excised specimen. The patient was later on referred to Medical Oncologist for further management. Picture of the Histopathology slide of this patient is given below in **Figure 8A and 8B**.



Figure 7

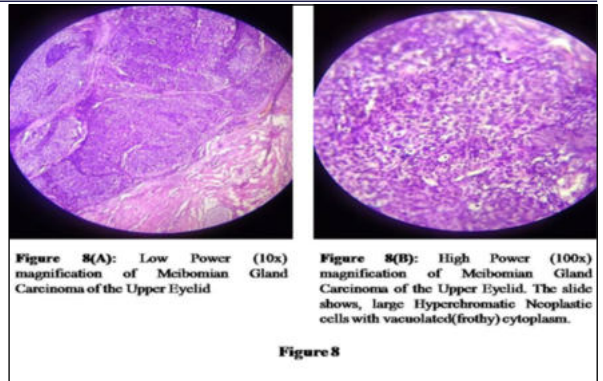


Figure 8(A): Low Power (10x) magnification of Meibomian Gland Carcinoma of the Upper Eyelid
Figure 8(B): High Power (100x) magnification of Meibomian Gland Carcinoma of the Upper Eyelid. The slide shows, large Hyperchromatic Neoplastic cells with vacuolated (frothy) cytoplasm.
Figure 8

RESULTS:

All the seven cases (100%) in our study were females (**Figure 9**). The mean age of the patients was 53 years. The youngest patient was of 35 years of age and the oldest patient in our study was of 65 years of age. The Upper eyelid was more commonly involved than the lower eyelid. Six patients (85.71 %) had involvement of the upper eyelid whereas only one (14.28%) patient had involvement of the lower eyelid (**Figure 10**). The clinical diagnosis corresponded with the Histopathological diagnosis in all the seven cases (100%). All the seven cases (100%) presented in the advanced stage of the disease. Wide Local Excision with Lid reconstruction was done in all the seven cases (100%). Tenzel's semicircular flap was done as the reconstructive procedure for 6 cases (85.71%) and Mustarde's Cheek rotation flap was done for one case (14.28%). Two cases (28.57%) had tumor cell infiltration in margins of the excised specimen of which one case developed recurrence at 8 weeks post operative period (**Figure 11**). Three cases (42.85%) were lost for follow up indicating the lack of awareness regarding this lethal condition among patients (**Figure 12**).

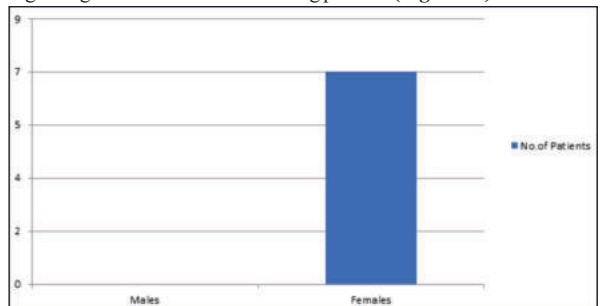


Figure 9: Gender Distribution Of The Patients.

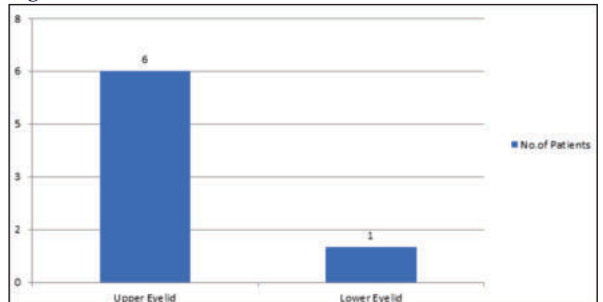


Figure 10: Upper And Lower Eyelid Distribution Of The Patients.

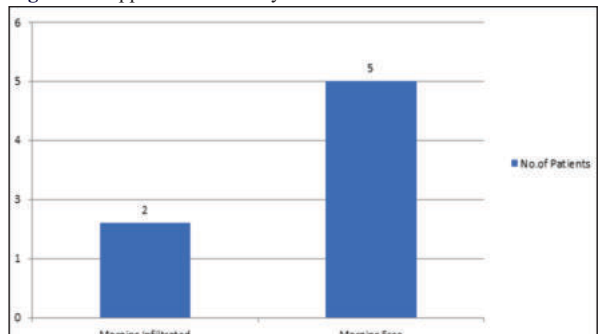


Figure 11: Margins Of The Excised Specimen Free Of Tumor Cells Or Infiltrated With Tumor Cells On Histopathology In The Patients.

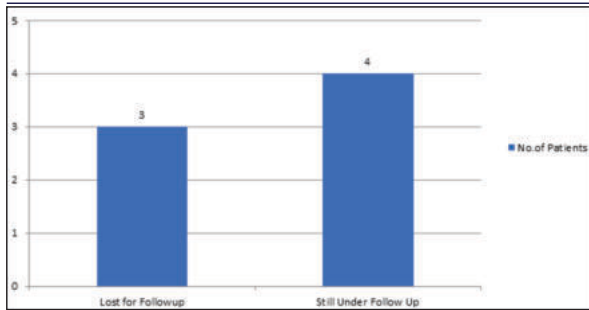


Figure 12: No. of Patients Lost For Follow Up And Still Under Follow Up.

DISCUSSION:

Seven cases of Meibomian Gland Carcinoma of the eyelids over a time period of 1 year were retrospectively analyzed in our study. All the seven cases (100%) in our study were females (Figure 9). The mean age of the patients was 53 years. The youngest patient was of 35 years of age and the oldest patient in our study was of 65 years of age. The Upper eyelid was more commonly involved than the lower eyelid. Six patients (85.71 %) had involvement of the upper eyelid whereas only one (14.28%) patient had involvement of the lower eyelid (Figure 10). The clinical diagnosis corresponded with the Histopathological diagnosis in all the seven cases (100%). All the seven cases (100%) presented in the advanced stage of the disease. Wide Local Excision with Lid reconstruction was done in all the seven cases (100%). Tenzel's semicircular flap was done as the reconstructive procedure for 6 cases (85.71%) and Mustarde's Cheek rotation flap was done for one case (14.28%). Tenzel's semicircular flap and Mustarde's cheek rotation flap are good options for repairing full thickness eyelid defects as they are more comfortable to the patient in aspects of being single staged procedures and avoiding the need of closure of the palpebral aperture for 6 to 8 weeks thereby compromising the vision of the eye as in case of Cutler Beard procedure. Two cases (28.57%) had tumor cell infiltration in margins of the excised specimen of which one case developed recurrence at 8 weeks post operative period which shows that wide local excision followed by Histopathological examination of the excised specimen is still a good option for treating the condition in centers where facilities for Frozen Section Biopsy is not available and in situations where the patient cannot be referred to a higher centre due to economic or logistic constraints. The patients with infiltration of the margins of the specimen with tumor cells can be managed by re-excision of the margins or other modalities of treatment like radiotherapy or chemotherapy for distant metastasis (Figure 11). Three cases (42.85%) were lost for follow up indicating the lack of awareness regarding this lethal condition among patients (Figure 12).

In a study conducted by Shield's JA et al¹³, titled "Sebaceous carcinoma of the eyelids: personal experience with 60 cases", the median age of the patients was 72 years and 73% if the patients were females. The mean age group in our study was also towards the elderly population and females were more commonly involved in our study also which is similar to their study. Upper eyelid was involved in 75% of the cases in their study which is similar to our study. Orbital exenteration was needed in 13% of the cases in their study. They concluded that, with more recently employed treatment methods, there is a tendency to avoid exenteration and to use more conservative methods of treatment like posterior lamellar resection of the eyelids with reconstruction, which was done in our study.

In a retrospective study of 191 cases of Sebaceous Gland Carcinoma of the eyelids conducted by S Kaliki et al¹⁴, titled "Sebaceous gland carcinoma of the eyelid: Clinicopathological features and outcome in Asian Indians", the mean age at presentation of the tumor was 57 years which was similar to our study. Upper eyelid was involved in 65% of the cases which was similar to our study. Wide excision biopsy was the most common treatment modality employed in their study (78% cases) which was similar to our study.

CONCLUSION:

Elderly females presenting with a swelling over the eyelids are to be carefully examined with a high index of suspicion so as to not to miss this lethal malignancy which usually masquerades as other benign conditions of the eyelids. Wide Local Excision with appropriate lid reconstruction procedure followed by Histopathological examination of the specimen is a good option for treating Meibomian Gland

Carcinoma of the eyelids where the facility for frozen section biopsy are not available or in situations where the patient cannot be referred to a higher centre due to various economic or logistic constraints. Tenzel's Semicircular Flap and Mustarde's Cheek rotation flap are good options for repairing full thickness eyelid defects which are more comfortable to the patient over Cutler Beard technique. Awareness regarding the lethal consequences of this trivial looking lid nodule is needed in the current rural Indian scenario as three cases (42.85%) out of seven were lost for follow up despite proper counseling.

REFERENCES:

- Shields JA, Demirci H, Marr BP, et al. Sebaceous carcinoma of the ocular region: a review. *Surv Ophthalmol* 2005;50:103-22.
- Hornblass A, Lauer SA. Sebaceous carcinoma of the eyelids. *Ophthalmology* 2005;111:1641.
- Song A, Carter KD, Syed NA, et al. Sebaceous cell carcinoma of the ocular adnexa: clinical presentations, histopathology, and outcomes. *Ophthal Plast Reconstr Surg* 2008; 24:194-200.
- Rao NA, Hidayat AA, McLean IW, et al. Sebaceous gland carcinomas of the ocular adnexa: a clinicopathologic study of 104 cases, with five-year follow-up data. *Hum Pathol* 1982;13:113-22.
- Boniuk M, Zimmerman LE. Sebaceous carcinoma of the eyelid, eyebrow, caruncle, and orbit. *Trans Am Acad Ophthalmol Otolaryngol* 1968;72:619-41.
- Khan JA, Grove AS, Joseph MP, et al. Sebaceous gland carcinoma: diuretic use, lacrimal system spread, and surgical margins. *Ophthal Plast Reconstr Surg* 1989; 5:227-34.
- Font RL. Eyelids and lacrimal drainage system. In: Spencer WH, editor. *Ophthalmic pathology: an atlas and textbook*. 4th ed. Vol. 4. Philadelphia, PA: WB Saunders; 1996. p. 2218-433.
- Hamada S, Kersey T, Thaller VT. Eyelid basal cell carcinoma: non-Mohs excision, repair, and outcome. *Br J Ophthalmol* 2005;89:992-4.
- Nunery WR, Welsh MG, McCord CD Jr. Recurrence of sebaceous carcinoma of the eyelid after radiation therapy. *Am J Ophthalmol* 1983;96:10-15.
- Boniuk M, Zimmerman LE. Sebaceous carcinoma of the eyelid, eyebrow, caruncle, and orbit. *Trans Am Acad Ophthalmol Otolaryngol* 1968;72:619-41.
- Burns SJ, Foss AJ, Butler TK. Outcome of periorcular sebaceous gland carcinoma. *Ophthal Plast Reconstr Surg* 2005;21:353-5.
- Rao NA, Hidayat AA, McLean IW, et al. Sebaceous gland carcinomas of the ocular adnexa: a clinicopathologic study of 104 cases, with five-year follow-up data. *Hum Pathol* 1982;13:113-22.
- Shields JA¹, Demirci H, Marr BP, Eagle RC Jr, Shields CL., Sebaceous carcinoma of the eyelids: personal experience with 60 cases. *Ophthalmology*. 2004 Dec;111(12):2151-7.
- S Kaliki, A Ayyar, T V Dave, M J Ali, D K Mishra, and M N Naik¹, Sebaceous gland carcinoma of the eyelid: Clinicopathological features and outcome in Asian Indians. *Eye (Lond)*. 2015 Jul; 29(7): 958-963.