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A HISTOMORPHOLOGICAL STUDY OF SEBACEOUS CARCINOMA OF EYELIDS: A 3-YEAR RETROSPECTIVE STUDY

Histopathology

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ABSTRACT

Background: Sebaceous Carcinoma (SC) is a rare and aggressive malignancy that develops from the sebaceous glands. SC is most common in the periocular region, head and neck, but can occur anywhere in the body. **Purpose:** To study and analyse demographic characteristics and outcomes of cases of Sebaceous carcinoma. **Materials and Method:** Retrospective Study of 24 patients with Sebaceous Carcinoma conducted at Department of pathology, Sarojini Devi Eye Hospital, Hyderabad, Telangana, India, for a period of 3 years. The data collected was subjected to statistical tabulations and analysis was done. **Results:** A total of 24 biopsies of histopathologically diagnosed Sebaceous Carcinoma (SC) cases were reviewed during the 3year retrospective study period. All the patients were above 25 years old being in the age group of 25-90 years of age. Mean age of presentation of SC is 56 years. Most common age group of presentation is 50-60 years (n=7, 29.16%). The distribution of SC in males=6 (25%) and females=18 (75%) with a ratio of male to female 0.33:1. The incidence of SC is found to be more in periocular region (n=24, 100%). The earliest age of presentation of SC is 25 years while 90 years being the late age of presentation. **Conclusions:** The current results support that the Sebaceous carcinoma is most commonly located in periocular region compared to extraocular region with right eye and upper lid more frequently involved. Incidence of SC is more in females compared to males with high female preponderance.

KEYWORDS

Sebaceous carcinoma, Meibomian gland carcinoma, Periocular.

INRODUCTION:

Sebaceous carcinoma (SC), also known as Sebaceous gland carcinoma (SGC), Sebaceous cell carcinoma, and Meibomian gland carcinoma is an uncommon malignant cutaneous tumor[1]. SC is most common in the periocular region, head and neck, but can occur anywhere in the body [2]. The tumor mimics various benign and malignant conditions, aggressive in nature and have potential for distant metastasis.

SC has its origin in sebaceous cells, it arises from meibomian glands, sebaceous glands of Zeis, and sebaceous glands in the ocular caruncle [3].

Most of these carcinomas arise due to de novo mutations. Sebaceous carcinomas associated with Muir-Torre syndrome have a loss of mismatch repair gene [4] whereas sporadically occurring SC do not show loss of mismatch repair [5].

Incidence of SC is approximately 1-2 cases per 1,000,000 person-years[6,7]. It is more common in upper lids as the meibomian glands are more there [8,9,10]. There are also reports of SC developing at extracutaneous sites, such as the parotid gland, breast, ovary, and prostate[11].

Histopathological sections shows irregular, asymmetric sebaceous lobules within the dermis. Individual cells show significant amounts of pleomorphism, hyperchromatism, mitotic activity, and nuclear atypia. Lesions may be classified as poorly, moderately, or well-differentiated. SC fall into four histopathologic categories: papillary, lobular, comedocarcinoma, and mixed [12].

Incisional and excisional biopsy with routine Hematoxylin and Eosin staining are useful tools for diagnosis of SC. Immunohistochemistry may also be useful to confirm the diagnosis and also to differentiate SC from other differentials. Sebaceous carcinomas exhibit nearly 100% EMA, ADP, and AR positivity [13,14,15].

Differentials include chalazion, inclusion cyst, papilloma, dermoid cyst[16]. Sebaceous adenoma[17] Basal cell carcinoma, Squamous cell carcinoma, Merkel cell carcinoma.

MATERIALS AND METHODS:

A Retrospective study reviewed over past 3 years of all the biopsies of Sebaceous Carcinoma in the Department of Pathology, Sarojini Devi Eye Hospital, Hyderabad, India. A search was conducted in our medical records and ophthalmic pathology data base for Sebaceous Carcinoma diagnosed cases during the period of 2020 to 2022 and were included in this analysis.

Sample collection and sampling method:

A total of 24 excision biopsies of Sebaceous Carcinoma were obtained from patients attending the department of ophthalmology of our institute.

Inclusion criteria:

All the biopsies submitted of Sebaceous carcinoma cases with ancillary investigations done.

The demographics (age, sex) indications for biopsies, clinical diagnosis and histopathological diagnosis were noted. The original slides were retrieved and reviewed, fresh sections were cut from tissue paraffin blocks wherever necessary and stained by routine hema toxylin and eosin stains.

Exclusion criteria:

Patients of sebaceous cyst, adenoma. Patients with insufficient data.

Statistical Methods:

The data collected was subjected to descriptive statistical tabulation.

RESULTS:

A total of 24 biopsies of histopathologically diagnosed Sebaceous Carcinoma (SC) cases were reviewed during the 3year retrospective study period. All the patients were above 25 years old being in the age group of 25-90. Mean age of presentation of SC is 56 years. Most common age group of presentation is 50-60 years (n=7, 29.16%). The distribution of Sebaceous Carcinoma is males=6, (25%) and females=18 (75%) with a ratio of male to female at 0.33:1, with female preponderance. The incidence of SC is found to be more in periocular region (n=25, 100%) with laterality of right eye (n=17, 70.83%) left eye (n=07, 29.16%) with involvement of upper lid (n=19, 79.1%) lower lid (n=5, 20.8%).

The earliest age of presentation of SC is 25 years while 90 being the late age of presentation. Of all the 24 cases, one case (n=1, 4.1%) showed pagetoid spread to conjunctiva (figure 1). Histo pathology showed tumor tissue (figure 2,3). To differentiate from other carcinomas Immunohistochemistry was done and it showed nuclear positivity for Androgen Receptor (figure 4).

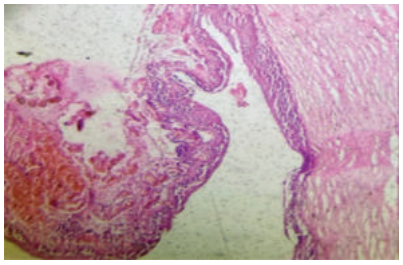

Figure 1. H&E, 4x showing pagetoid spread to conjunctiva

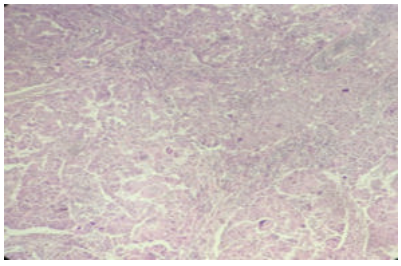

Figure 2. H&E, 10x showing tumor tissue

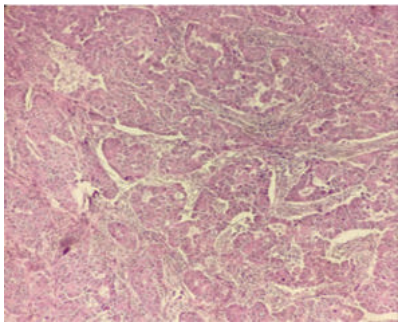

Figure 3. H&E, 40x showing well differentiated tumor

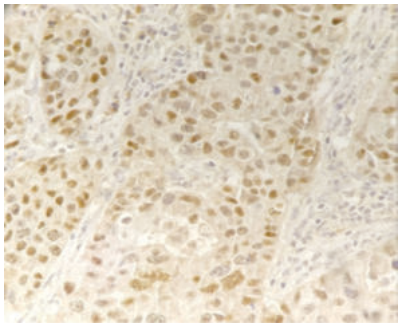

Figure 4. IHC, Androgen Receptor, 40x, showing nuclear positivity

Table-1 Age wise distribution of Sebaceous Carcinoma

Age (in years)	Number of cases (Total=24)	Case distribution in Males(M) and Females(F)	Percentage %
21-30	1	M-1 F-nil	M-4.16% F-0%
31-40	3	M-3 F-nil	M-12.5% F-0%
41-50	5	M-1 F-4	M-4.16% F-16.6%
51-60	7	M-nil F-7	M-0% F-29.16%
61-70	5	M-1 F-4	M-4.16% F-16.66%
71-80	2	M-nil F-2	M-0% F-8.33%
81-90	1	M-nil F-1	M-0% F-4.16%
	24	M-6 F-18	M-25% F-75%

Table-2 Laterality of Lesions (periocular)

Laterality	No. of cases (Total=24)	Percentage %
Right Eye	17	70.83%
Left Eye	07	29.16%

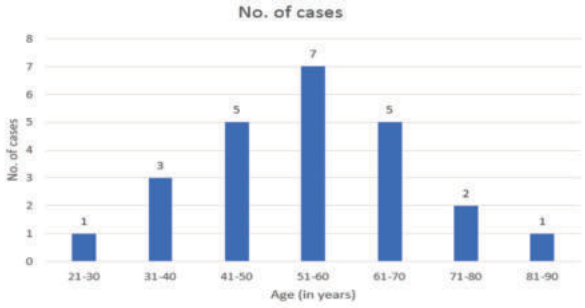

Chart-1 Pattern of distribution of Sebaceous Carcinoma

Table-3 Gender wise distribution

Gender	No. of cases (Total=24)	Percentage %
Male	6	25%
Female	18	75%

Table-4 Location of lesion

Location	No. of cases (Total=24)	Percentage %
Upper eyelid	19	79.16%
Lower eyelid	05	20.83%

DISCUSSION:

Sebaceous Carcinoma is more common in periocular region as compared to extraocular [18]. In our study all the cases are located in periocular region(n=24, 100%). SC is commonly seen in older individuals ranging from 57 to 72 years [19,20] In our series mean age of presentation of SC is 56 years which correlates with S Kaliki, A Ayyar et al study conducted in L V Prasad Eye Institute, Hyderabad, India, in which mean age of SC was mentioned as 57 years.

SC is more common in females compared to male population, In our study there was female preponderance with male to female ratio at 0.33:1 which correlates with the above study and is in disagreement with Tina Dasgupta et al where they did not detect a predominance of incidence in women instead showed slight predominance among men.

Our study also correlates with S Kaliki, A Ayyar et al study in intraepithelial spread of SC to conjunctiva, In our series 4.1% cases showed intraepithelial spread where as their study states 3% of their cases had intraepithelial spread of conjunctiva. SC more commonly involves upper eyelid, In our study in 19 cases (79.1%), lesion was located on upper eyelid.

CONCLUSIONS:

Our study concludes that Sebaceous carcinoma is most commonly located in periocular region compared to extraocular region with right eye and upper lid more frequently involved than left eye and lower lid. Incidence of SC is more in females compared to males with female preponderance. SC is more common in elderly age group. In conclusion histopathology and immunohistochemistry serves as a better tool for definitive diagnosis of Sebaceous Carcinoma.

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