

Original Article

A pathologic review of ophthalmic neoplasms at tertiary care hospital

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Abstract:

Introduction: The ophthalmic lesions more precisely; orbital and ocular tumors require surgical treatment mostly, hence a correct preoperative provisional diagnosis followed by series of investigations and clinical examination and confirmation of the same by doing histopathological examination of the specimen plays an enormous role in treating both benign and malignant ocular and orbital lesions in patient care.

Material and methods: The study was carried out in the Department of Pathology of B. J. Government Medical College and Sassoon General Hospital, Pune, India during July 2011 to June 2013 retrospective and prospectively. The total 50 ophthalmic lesions were received during this period out of which 29 were neoplastic.

Results: Total 50 ophthalmic lesions were received during this period out of which 29 were neoplastic. There was slight female (54%) preponderance. The location wise, eyelid (62%) was most commonly involved site followed by conjunctiva, orbit and retina. Among the benign lesions, nevus and hemangioma were common (28% each) followed by dermoid cysts, squamous papilloma and schwannoma. The squamous cell carcinoma was the most prevalent ophthalmic malignancy (47%) followed by basal cell carcinoma, sebaceous carcinoma and retinoblastoma.

Conclusion: The most frequent malignant ophthalmic lesion was squamous cell carcinoma followed by basal cell carcinoma. The frequent benign lesion was nevus and hemangioma. The highest number of lesion were from eyelid followed by conjunctiva.

Keywords: Ophthalmic lesions, squamous cell carcinoma, dermoid cyst

Introduction:

The ophthalmic tumors are quite varied owing to the diversity and complexity of the tissues within the eye and orbit. Accordingly, their biologic behavior also varies, ranging from benign to premalignant and malignant. The ophthalmic lesions more precisely; orbital and ocular tumors or tumor like lesions mostly require surgical treatment, hence a correct preoperative provisional diagnosis followed by series of investigations and clinical examination and confirmation of the same by doing histopathological examination of the specimen plays an enormous role

in treating both benign and malignant ocular and orbital lesions¹.

Recent studies of orbito-ocular lesions in Nigeria suggest that squamous cell carcinoma (SCC) remains the most common ocular malignancy in adulthood². Striking epidemiological difference in the distribution of these ophthalmic tumors has been documented around the world. Ocular melanomas, for instance, are the most frequent ophthalmic malignancy among Caucasians in the Western world but are rare in Black Africa³. Conversely, retinoblastoma is much more prevalent in Africa than in high-income developed world.

Material & methods:

The study was carried out in the Department of Pathology of B. J. Government Medical College & Sassoon General Hospital, Pune, India during July 2011 to June 2013 retrospectively and prospectively. Total 50 ophthalmic lesions were received (0.59%) out of total 8399 surgical specimens during this period. Out of these 50 ophthalmic lesions, 29 were neoplastic lesions. The specimens fixed in 10% formalin were received from the Ophthalmology Department. The processing was done in automatic tissue processor. The sections were stained by hematoxylin & eosin. The special stains were used whenever required.

Results:

The study was performed over a period of two years from July 2011 to June 2013. During this period total 8399 surgical specimens were received for histopathological examination, out of which 50 specimens were ophthalmic lesions (0.59%). Out of this 50 ophthalmic lesions, 29 were neoplastic lesions (58%) and 21 were non neoplastic lesions (42%).

There was slight female (54%) preponderance in these ophthalmic lesions as compared to males ((46%). No statistically significant difference was noted between sex of the patients of neoplastic lesions.

The location wise, eyelid (62%) was the most commonly involved site followed by conjunctiva (27%), orbit (7%) & retina (3%) as shown in table no. 1. Among the lesions of eyelids, benign and malignant lesions were equal. Among the benign lesions, nevus and hemangioma were common (28% each) followed by dermoid cysts (24%), squamous papilloma (14%) and schwannoma (7%) as shown in table no. 2.

The squamous cell carcinoma was the most prevalent ophthalmic malignancy (47%) followed by basal cell carcinoma (20%), sebaceous carcinoma (13%) and retinoblastoma (6%) as shown in table no. 3. A single case of basisquamous carcinoma with sebaceous differentiation and neuroendocrine carcinoma was found.

Table No. 1: Distribution of neoplastic lesions according to their locations

Sr. No.	Location	Benign	Malignant	Total
1	Eyelids	09	09	18
2	Conjunctiva	03	05	08
3	Orbit	02	--	02
4	Retina	--	01	01
	Total	14 (48.28%)	15 (51.72%)	29

Table No. 2: Frequency of benign lesions

Sr. No.	Type of benign lesion	No. of cases (n=14)	Percentage out of 14 benign lesions (n=14)
1	Nevus	04	28.57%
2	Hemangioma	04	28.57%
3	Dermoid cyst	03	24.42%
4	Squamous papilloma	02	14.28%
5	Schwannoma	01	7.14%
	Total	14	100%

Table No. 3: Frequency of malignant lesions

Sr. No.	Type of malignant lesion	No. of cases (n=15)	Percentage out of 15 malignant lesions (n=15)
1	Squamous cell carcinoma	07	46.66%
2	Basal cell carcinoma	03	20%
3	Sebaceous carcinoma	02	13.13%
4	Basisquamous carcinoma with sebaceous differentiation	01	6.66%
5	Retinoblastoma	01	6.66%
6	Neuroendocrine carcinoma	01	6.66%
	Total	15	100%

Discussion:

Results of the present study were compared with various other similar studies. The sex wise there was not much difference between males (48%) and females (52%) with slight female preponderance which is similar to the study of Bastola P et al ⁴. In our study malignant cases (51.72%) predominated over benign cases (48.27%) which is comparable with the study done by Ali B U et al ⁵ which also shows more malignant cases as compared to benign. But other studies like Bastola P et al ⁴ and Ud-Din N et al ⁶ found more number of benign cases as compared to malignant. The highest number of cases were from eyelid (62%) which was the most commonly involved site followed by conjunctiva

(27%), orbit and retina which is similar to the study of Bastola P et al ⁴ which also shows highest number of cases of eyelid (57%) followed by conjunctiva (22%).

Among the benign lesions, nevus & hemangioma were common (28% each) followed by dermoid cyst (24%), squamous papilloma (14%). This is similar to the study of Abdi U et al ⁷ where most common benign lesion was vascular tumor, where as dermoid cyst (21%) was most common benign lesion followed by nevus (12.2%) in the study of Chauhan S C et al ⁸. The most common malignancy seen in ophthalmic specimens was squamous cell carcinoma (46%) followed by basal cell carcinoma (20%), sebaceous cell carcinoma (13%) and retinoblastoma (7%) in our

study. This was comparable with the study of Benedicta A A et al⁹ which also shows squamous cell carcinoma as most common malignant lesion. This finding is in contrast to several other studies from Nigeria where retinoblastoma was reported as the most common ophthalmic malignancy. All reports from Nigeria are in agreement that retinoblastoma is the most common malignant tumor in children, while squamous cell carcinoma is the most common malignancy in adults.

Among malignant eyelid lesions, present study found three cases of basal cell carcinoma (33%) & sebaceous cell carcinoma (33%) each which are most common lesions of eyelid followed by squamous cell carcinoma (22%). While study done by Bastola P et al⁴ found 41.7% of sebaceous carcinoma & 33.3% of basal cell carcinoma while study done by Jahagirdar S et al¹⁰ observed 37% of sebaceous cell carcinoma and 44% of basal cell carcinoma.

Present study found 5 cases of malignant lesions arising from conjunctiva (62.5%) where as 3 cases were benign (37.5%) among total neoplastic lesions which is comparable with the study done by Chauhan S et al⁸ in which they found 79% of malignant lesions of conjunctiva and 21% of benign lesions of conjunctiva. The same was observed in the study

done by Obata H et al¹¹. They found 78% and 21.5% malignant and benign lesions of conjunctiva respectively. Most common malignant lesion of conjunctiva in our study was squamous cell carcinoma of conjunctiva which is similar to the study done by Chauhan S et al⁸ while Obata H et al¹¹ found malignant lymphoma as the most common malignant lesion of conjunctiva. Among the lesions of retina, we found only one case of retinoblastoma.

Overall squamous cell carcinoma was the most common lesion followed by basal cell carcinoma which is comparable with the study done by Benedicta AA et al⁹ in which they also found squamous cell carcinoma as the most common malignant lesion followed by retinoblastoma.

Conclusion:

The study concluded that a histopathological examination of excised or incised ocular or orbital lesions is absolutely mandatory for each case for definitive diagnosis and further management. The most frequent malignant ophthalmic lesion was squamous cell carcinoma followed by basal cell carcinoma. The most frequent benign lesion was nevus and hemangioma. The highest number of lesions were from eyelid may be because it is exposed area followed by conjunctiva.

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