



RESEARCH ARTICLE

MORPHOLOGICAL SPECTRUM OF OPHTHALMIC BIOPSIES FROM A TERTIARY  
CARE HOSPITAL IN KASHMIR

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ABSTRACT

**Background:** The aim of this study was to find the pattern of prevalence of different ophthalmic lesion and relation of lesions with regard to age and gender of patients.

**Materials and Methods:** This study was conducted in department of pathology, Govt Medical College Srinagar for a period of one year.

**Results:** Ophthalmic lesions showed male dominance and the common site affected was eyelid. The most common benign lesion was noted to be Nevus while common malignant lesion reported was Squamous cell carcinoma (SCC).

**Conclusion:** Squamous cell carcinoma was noted as common malignant lesion in eye followed by basal cell carcinoma (BCC). Squamous cell carcinoma was reported exclusively in males and Basal cell carcinoma was noted in females only.

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INTRODUCTION

Ophthalmic biopsies are one of the rare biopsies received in the department of pathology. The ophthalmic pathology includes wide range of tissues and shows wide range of diseases (Pudasaini and Kansakar, 2013; Chauhan et al., 2013). These Ophthalmic lesions include orbital and ocular tumors or tumor like lesions that require surgical treatment. A correct preoperative provisional diagnosis followed by investigations and clinical examination is necessary. However, confirming the same by doing histopathological examination of the excised lesion plays an enormous role in management of both benign and malignant ocular and orbital lesions in patient care (Bastola et al., 2013; Histology of eye, 2012). Eyelids are affected by variety of lesions and they may be epithelial, adnexal, vascular, neural, histiocytic, melanocytic or inflammatory in origin. Moreover, eyelids are also affected by different systemic diseases. Many lesions are identified by clinical appearance and its behaviour, however there are few diagnostic challenging cases which need Histopathological evaluation for diagnosis. The accuracy of clinical diagnosis ranges from

50.87% to 96% (Pudasaini and Kansakar, 2013; Farhat et al., 2010). Among all malignant tumours of the eye and ocular adnexa, eyelid is the most common localisation (about 42.6%). The different types of malignant eyelid tumours which may appear similar grossly, but they have different clinical course and outcome (Ibrar Hussain et al., 2013; Lavaju et al., 2009; Saari et al., 2001). Conjunctival lesions vary in histology from benign lesions like squamous papilloma or nevus to malignant lesions like melanoma or squamous cell carcinoma (Pudasaini and Kansakar, 2013; Mondal et al., 2012). The goal of histopathological study of ophthalmic lesions is to enlighten ophthalmic surgeon with detailed histopathological information that can be correlated with patient's history and other clinical data giving greatest benefit to ongoing patient care. The ophthalmic lesion excision may need multidisciplinary approach and co-ordination from plastic surgeon, ENT surgeon and Neurosurgeon depending upon the site, type and extend of lesion. We aimed to study the spectrum of ocular lesions in our department with respect to type, site, gender and age. This study is direct indicator of prevalence of such lesions in Kashmir valley as it is only tertiary care institute providing ophthalmological care. On review of literature no such study has been performed before in Kashmir.

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**Table 1. Distribution of ophthalmic lesions according to average age and sex**

S. No	Diagnosis	No. of cases	Av. Age	%	M:F
1	SCC	8	63.75	15.09	Only M
2	BCC	5	50.2	9.43	Only F
3	Sebaceous Carcinoma	1	50	1.88	Only M
4	Malignant Melanoma	3	41.66	5.66	2:1
5	Retinoblastoma	1	9	1.88	Only F
6	Nevus	7	15.85	13.20	2:5
7	Papilloma	4	38.5	7.54	3:1
8	Haemangioma	4	28	7.54	3:1
9	Cysts	4	28.25	7.54	3:1
10	Fibroepithelial polyp	1	65	1.88	Only M
11	Seborrheic keratosis	2	45	3.77	Only F
12	Dermatofibroma	1	52	1.88	Only M
13	Angiolymphoid hyperplasia	1	11	1.88	Only M
14	Chalazion	1	28	1.88	Only M
15	Conjunctival IEN	5	62.8	9.43	Only M
16	Suspicious for malignancy	2	51.5	3.77	Only M
17	Descriptive	3	48.33	5.66	2:1
	Total	53	40.52		1.94:1

**Table 2. Comparison of frequency of different malignant ocular lesion in our study with malignant eye lid lesions from other studies**

Tumor	Present study*	NW-PAK (Ibrar Hussain <i>et al.</i> , 2013)	S-PAK (Farhat <i>et al.</i> , 2010)	Nepal (Mushtaq <i>et al.</i> , 2001)	Singapur (Lee <i>et al.</i> , 1995)	India (Jahagirdar <i>et al.</i> , 2007)	Japan (Takamura and Yamashita, 2005)
BCC	27.77	59	56.32	59.4	84	38.8	39.5
SCC	44.44	31.5	20.69	15.6	3.4	22.4	10.5
SGC	5.55	6.8	14.94	0.0	10.2	27.1	28.9
MM	16.66	1.3	-	15.6	1.2	3.5	7.9
Others	5.55	-	18	10	-	-	13.2

BCC: Basal Cell Carcinoma. SCC: Squamous Cell Carcinoma. SGC: Sebaceous gland carcinoma, MM: Malignant Melanoma

\*present study considers all ophthalmic malignant lesions at different sites including eye lid.

## MATERIALS AND METHODS

The retrospective observational study was performed in the department of pathology, Govt Medical College, Srinagar, which is a tertiary care centre. All the ophthalmic biopsies received in the department of pathology over a period of one year from Dec 2014 to Nov 2015 were reviewed. The specimens received included edge biopsy, excision biopsy and enucleated eye ball. The biopsies were received in 10% formalin and fixed overnight. Thorough grossing and representative section cutting was done. This was followed by standard tissue processing in an automated tissue processor. Blocks were prepared by the help of leuckhart's piece. After trimming the blocks, 4-5µm sections were cut by rotary microtome which was then stained with haematoxylin and eosin. The final diagnosis was established after examination of H&E stained slides. The age, sex and site of the lesion were noted from Histopathological requisition forms. We analysed the age and gender distribution of lesions, location and Histopathological type of lesions.

## RESULTS

During one year period, a total of 53 ophthalmic biopsies were received in the department of pathology, Govt Medical College, Srinagar, J&K, India. The received specimen included 43 excision biopsies, 8 incision biopsies and two enucleation biopsies. Among them 28 were reported as benign, 18 malignant, 2 as suspicious for malignancy, 2 as inflammatory and the three biopsies were given descriptive reports of nonspecific inflammation and repeat representative biopsy was recommended in case of clinical suspicion. Among the malignant lesions most common lesion was squamous cell carcinoma followed by basal cell carcinoma while as among benign lesion the commonest lesion reported was Nevus. The

male to female ratio was noted as 1.94:1 and mean age was reported 40.52 years. The laterality was mentioned in 33 out of 53 requisition forms and right sided lesions (22) were noted more common than left sided lesions (12). The commonest site of lesion was noted to be eye lid (23/53) followed by conjunctiva (19/53), limbal area (5/53), lacrimal (3/53), orbit (2/53) and retina (1/53). The diagnosis of lesions along with parameters like male female ratio, number of cases and average age are briefed in table 1. Among the 18 malignant lesions, 44.44%(8) were SCC, 27.77%(5) were BCC, 16.66%(3) had malignant melanoma and 5.55%(1) had sebaceous gland carcinoma (SGC). The common site for basal cell carcinoma was eye lid and was exclusively reported in females. The lacrimal gland swelling, eye lid followed by limbal region were noted as sites of squamous cell carcinoma. The squamous cell carcinoma was exclusively reported in males. Out of the 19 conjunctival biopsies, the common lesion reported were nevus and conjunctival intraepithelial neoplasia. The relationship of different lesions with number of cases and male to female ratio are briefed in Table 1.

## DISCUSSION

Our study included 53 cases with 35 (66.03%) male patients and 18(33.96%) female patients. In a study by Pudasaini *et al.* (2013), the lesions were more common in male (63.6%) than female (36.4%) which correlates well with other studies (Farhat *et al.*, 2010; Ceylan *et al.*, 2010). However Chauhan *et al.* (2012) showed not much difference in male (51%) and female (49%). Among 53 cases, 52.83%(28) were reported as benign, 33.96%(18) malignant, 3.77%(2) as suspicious for malignancy, 3.77%(2) as inflammatory and 5.66%(3) biopsies were given descriptive reports of nonspecific inflammation. In a study by Chauhan *et al.* (2013), benign lesions were 70% while malignant lesions were 30%, while other study found it 61.5%

and 38.5% respectively (Abdi *et al.*, 1996). Our study reported commonest site of lesion to be eye lid (43.39%) (23/53) followed by conjunctiva (35.84%) (19/53), limbal area (9.43%) (5/53), lacrimal (5.66%) (3/53), orbit (3.77%) (2/53) and retina (1.88%) (1/53). In a study by Chauhan *et al.* (2013), they location wise; eyelid (57%) was the most commonly involved site followed by conjunctiva (22%) and orbit (8%), while lacrimal sac (2%) was the least commonly involved site. In our study most common benign lesion reported was nevus followed by papilloma and cysts. In the study of Obata *et al.* (2005) most common benign lesion was intradermal nevus (21.3%) and in study by Chauhan *et al.* (2013) most common benign lesion was dermoid cyst (21%). In the study of Abdi *et al.* (1996) most common benign lesion was vascular tumour (21.3%) while in a study by Bastola *et al.* (2013), the most common lesion noted was papilloma. In our study most common malignant lesion was squamous cell carcinoma followed by basal cell carcinoma. The malignant melanoma preceded sebaceous cell carcinoma. In the study of Obata *et al.* (2005), most common malignant lesion of eye lid was sebaceous (meibomian) carcinoma (15%) similar to what was noted by Chauhan *et al.* (2013) with incidence of 8.7%. our study noted BCC as common lesion in eyelid which was comparable with study done by Abdi *et al.* (1996). The striking point noted in our study was absolute female dominance in case of BCC and absolute male in squamous cell carcinoma. Comparison of frequency of different malignant ocular lesion in our study with malignant eye lid lesions from other studies are reported in Table 2.

## Conclusion

The ophthalmic lesions are common in males with benign lesions outnumbering malignant ones. The eyelid is the common site of lesion. In our study most common benign lesion noted was nevus. Among malignant lesions squamous cell carcinoma with exclusive male predominance is more common followed by basal cell carcinoma with exclusive female dominance. This is contrary to the observation from other studies which report BCC to be more common. The gender distribution has not been studied in other studies.

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