

Original article ● ● ● ●

Pattern of ocular tumors in the eastern region of Nepal

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Abstract

Background: Ocular tumors are commonly encountered in ophthalmic practice.

Objective: To study the clinical pattern of ocular tumors in the eastern region of Nepal.

Materials and methods: The hospital records of patients with ocular tumors treated at B P Koirala Institute of Health Sciences in the eastern region of Nepal over a period of 5 years (April 2003 - March 2008) were studied retrospectively.

Results: Of 115 consecutive patients with ocular tumors, 40 (34.75%) were below the age of 21 years, 41 (35.65%) were in the age group of 21-50 years and 34 (29.56%) of age above 50 years. There were 48 (41.73%) and 67 (58.26%) patients with benign and malignant tumors respectively. The common benign tumors were conjunctival papilloma, dermoid cysts, nevus, cystic lesions and hemangioma. Among the malignant tumors, basal cell carcinoma was the commonest (22.38%). Retinoblastoma was the most common ocular malignant tumor in the pediatric age group (88.8%). Basal cell carcinoma was the commonest eyelid malignancy 53.57%.

Conclusion: Conjunctival papilloma, dermoid cysts, nevus, cystic lesions and hemangioma are common benign ocular tumors, whereas basal cell carcinoma and retinoblastoma are the commonest ocular malignancies in adults and children respectively.

Key words: ocular malignancy, retinoblastoma, basal cell carcinoma

Introduction

The management of ocular tumors is a great challenge particularly in developing countries because of the fact that most of the ophthalmic surgeons here are engaged in entertaining patients of cataract blindness. Those patients with ocular tumors need a referral to higher centers for diagnosis and management. With the purpose of developing an effective strategy on detection and management of ocular malignancies, it is important to first identify the pattern of the tumors referred to a higher center of the region.

Materials and methods

A retrospective study of hospital records of the patients with ocular tumors subjected to histopathological analysis over a period of 5 years from April 2003 to March 2008 was carried out at the Departments of Ophthalmology and Pathology of B P Koirala Institute of Health Sciences in the eastern region of Nepal. A total of 115 consecutive medical records with histopathological confirmation of the type of tumors of the eye and its adnexa were identified. Those cases without histopathological confirmation were not included in the study. Two cases of clinically and radiologically suspected retinoblastoma were diagnosed as endophthalmitis after histopathological study. They were, therefore, excluded from the study.

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Results

A total of 115 medical records of patients of ocular tumors were studied. Of the total, 64 (55.65%) were male and 51 (44.35%) were female. There were 48 (41.73%) and 67 (58.26%) patients with benign and malignant tumors respectively.

It was seen that in the early age group of less than 5 years, prevalence of malignant tumor was very high, accounting for 19 malignant tumors out of a total of 22 patients. All these malignant tumors were retinoblastomas. The benign ones included capillary hemangioma and epidermal inclusion cyst.

Another peak of malignant tumors was seen in the age group 40+ to 50 years. The majority of malignancy was found to be basal cell carcinoma followed by squamous cell carcinoma.

Table 1 shows the distribution of benign and malignant ocular tumors according to their location. The eyelid was the most common site of ocular tumors accounting for a total of 49 (42.6%) cases, followed by intra-ocular tumors 26 (22.61%) and orbital tumors 18 (15.65%). Eyelid tumors mainly consisted of basal cell carcinoma 15 (30.6%) followed by squamous papilloma 4 (8.16%) and squamous cell carcinoma 5 (10.2%). The other eyelid tumors with or without conjunctival involvement are given in Table 2. Retinoblastoma was the most common intraocular tumor in 24 (92.3%) followed by intraocular melanoma in 2 (7.69%). Among the eyelid malignancies (n=28), basal cell carcinoma was found in 53.57%, squamous cell carcinoma in 17.86% and meibomian gland carcinoma in 14.28%.

Table 1

Distribution of tumors according to their location

Site	Benign	Malignant	Total	% n =115
Intraocular	0	26	26	22.61
Orbital	14	4	18	15.65
Eyelid tumors with or without conjunctival involvement	21	28	49	42.6
Conjunctiva	13	9	22	19.13

Discussion

From Table 4 we can see that in the present study, retinoblastoma was seen in 24 patients, accounting for 35.8% of the total ocular malignancies, followed by basal cell carcinoma 15 (22.3%), squamous cell carcinoma 5 (7.46%) and melanoma 5 (7.46%). In a similar study conducted in BPKIHS, Nepal, between 1995-2000, the most common malignancy was retinoblastoma (45.2%) followed by basal cell carcinoma (22.6%), squamous cell carcinoma (17.9%) and melanoma (9.5%) (Thakur et al 2003).

Table 2

Eyelid tumors with or without conjunctival involvement

Types of tumors	No	% n = 49
Basal cell carcinoma	15	30.6
Squamous cell carcinoma	5	10.2
Squamous papilloma	4	8.1
Sebaceous/Meibomian gland carcinoma	4	8.1
Sebaceous cyst	2	4
Basosquamous carcinoma	1	2
Eosinophilic cystadenoma	4	8.1
Capillary hemangioma	2	4
Apocrine hygrocystoma	1	2
Malignant melanoma	3	6.1
Compound naevus	4	8.1
Intradermal naevus	2	4
Solid dermoid	2	4

Table 3

Various orbital tumors

	No	% n = 18
Schwannoma	2	11.1
Cavernous hemangioma	2	11.1
Dermoid cyst	6	33.3
Leukemia	1	5.5
Lymphangioma	2	11.1
Pleomorphic adenoma	2	11.1
Rhabdomyosarcoma	1	5.5
Fibrous hystiocytoma	2	11.1



Similarly, in a study from Singapore, the common malignancies were retinoblastoma (53.6%), melanoma (19.2%) and squamous cell carcinoma (11.2%); (Lee et al 2000). In another study from India, retinoblastoma was seen in 32% and squamous cell carcinoma in 25%, (Sunderraj, 1991). In Nigeria, retinoblastoma accounted for 55% of ocular tumors (Ajaiyeoba et al 1992). In the developed countries, the findings were quite different. In a New York study, melanoma was the commonest malignancy (70.4%), followed by retinoblastoma (9.8%) and squamous cell carcinoma (9.2%), (Mahoney et al 1990). In Alabama, melanoma was the commonest ocular malignancy (59%), (Swanson and Cloud, 1991).

Table 4

Pattern of primary malignant tumors

Study	Retinoblastoma %	BCC %	SCC %	Melanoma %
BPKIHS (2003-2008)	35.8	22.3	7.46	7.46
BPKIHS (1995-2000)	45.2	22.6	17.9	9.5
Singapore	53.6	5	11.2	19.2
Nigeria	55	10	13.5	10
India	32	18	25	12
New York	9.8	5.3	9.2	70.4
Alabama	7.8	13.2	9.4	59

Table 5 shows the distribution of retinoblastoma in various age groups. In the present study, retinoblastoma was seen in 91.66% in the 5 year olds or younger. In the previous study at BPKIHS, 88.2% of patients with retinoblastoma were 5 years old or younger (Thakur et al 2003). Similar reports were obtained from a Singapore study (95.5%), (Lee et al 2000), an American study (95%), (Tamboli et al 1990), and an Indonesian study (76%), (Nasution and Sutjipo, 1991). This shows that retinoblastoma is the most common ocular malignancy in the pediatric age-group worldwide.

Table 6 shows the distribution of various eyelid malignancies in 3 different studies. In the present study, 15 patients had basal cell carcinoma of the eyelid, accounting for 53.57% of the total eyelid cancers, followed by squamous cell carcinoma (17.86%) meibomian/sebaceous gland carcinoma (14.28%). In a Singapore study, (Lee et al 1999) reported basal cell carcinoma as the most common eyelid cancer (84%),

Table 5

Distribution of retinoblastoma in various age groups

Study %	<5 years %	>5-10 years %
BPKIHS 2003-2008	91.66	8.33
BPKIHS 1995-2000	88.2	11.8
Singapore	95.5	4.5
USA	95	5
Indonesia	76	24

followed by sebaceous gland carcinoma (10.2%), squamous cell carcinoma (3.4%) and malignant melanoma (1.2%). In a study from Taiwan, the most common eyelid malignancy was basal cell carcinoma (65.1%), followed by squamous cell carcinoma (12.6%), and sebaceous cell carcinoma (7.9%), (Hsin-Yi et al 2006). Similarly, in India, basal cell carcinoma was found in 38.8% of eyelid cancers, followed by sebaceous gland carcinoma (27%) and squamous cell carcinoma (22.4%), (Abdi et al 1996).

Table 6

Malignant tumors of eyelids

Various studies	BCC %	Sebaceous gland carcinoma %	Squamous cell carcinoma %
BPKIHS 2003-2008	53.57	14.28	17.86
Singapore	84	10.2	3.4
India	38.8	27	22.4

Conclusion

Basal cell carcinoma is the commonest ocular malignancy in the older population. Retinoblastoma is the most common ocular malignant tumor in the pediatric age group.

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