

Profile of Ocular Tumors at Nepal Eye Hospital

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ABSTRACT:

INTRODUCTION: Ocular tumors are the commonly encountered neoplasms in ophthalmology practice that encompass a wide variety of benign and malignant tumours. If timely diagnosed and effectively treated, can save vision and even life. The aim of this study is to observe the profile of ocular tumours in ophthalmic practice.

METHOD: This was a retrospective consecutive non-randomized observational study done at oculoplasty clinic, Nepal eye hospital, Tripureshwor over a period of 18 months from February 2013 to September 2014. All the patients in spite of their presentations at any stage were evaluated thoroughly. A standard proforma was filled in all cases including occupation, age of presentation, duration of growth, laterality, any evidence of metastasis clinical findings and geographical distribution and ethnicity.

Treatment was determined by clinical considerations, age, stage of presentation and investigations. Incisional or excisional biopsy was done and specimen was sent to pathology lab of Nepal eye hospital for histopathological examination and confirmation of clinical diagnosis.

RESULT: Out of total 302 patients, 185(57.09%) were males and 139(42.90%) were females. 261 (85.85%) were benign and 43 (14.14%) were malignant. Basal cell carcinoma (6.57%) was the commonest extra ocular tumor and retinoblastoma commonest as intraocular tumor (1.97%).

CONCLUSION: Basal cell carcinoma is the commonest extraocular tumour and retinoblastoma as the commonest intraocular tumor.

KEY WORDS: Extraocular, histopathological, intraocular

INTRODUCTION

The orbit consists of eyeball, bones, nerves, skin, fibrous tissue, muscles, blood vessels. There are many midline fusion lines in the orbit and eyelids, thus, congenital lesions are also frequently associated in this region.

Ocular tumors are commonly encountered neoplasm in ophthalmology practice. Skin cancer commonly affects the ocular and eyelid regions. Orbital invasion is a serious and potentially fatal complication of the cutaneous neoplasia. The most common skin cancers resulting in orbital invasion are basal cell carcinoma, squamous cell carcinoma, sebaceous gland carcinoma

and malignant melanoma. Orbital invasion from eyelid tumors usually result from delayed presentation, incomplete excision with subsequent recurrences and highly aggressive invasive tumours.¹ normally they appear as painless elevation or nodules, often with discoloration of the overlying skin, irregular lid margin and distortion of eyelashes. There may be ulceration of the involved area with bleeding, crusting, redness and/or distortion of the normal appearance. These findings should be evaluated meticulously and biopsy of the excised mass will confirm the diagnosis.

Early and accurate diagnosis of the ocular tumours especially malignant ones, not only helps in reducing the amount of damage and extent of reconstruction of the eye integrity but also reduces considerably the morbidity and even mortality of the patient. A large number of studies have been carried out regarding ocular tumors in developed countries but ironically, There are few studies related to ocular tumors in Nepal especially in the field regarding the fast rising incidence

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and correlation between clinical and histopathological diagnoses.

METHOD

A retrospective study of hospital records of the patients with ocular tumors presenting at oculoplasty department of Nepal eye hospital over a period of 18 months from February 2013 to September 2014 was done. A total of 302 consecutive medical records with histopathological diagnosis of the tumors (extraocular and intraocular) were analyzed.

RESULT

A total of 304 medical records of patients with ocular tumors were analyzed. Of the total, 185 (60.85%) were male and 139 (45.72%) were female, 261 (85.85%) were benign and 43 (14.14%) were malignant.

Table 3 shows the anatomical distribution of tumors according to which the eyelid was the most commonest site for both benign and malignant tumors accounting for 84.76% followed by orbital tumors (n=42, 6.63%)

Table 1: Distribution of patients according to sex

Sex	Frequency	Percentage
Male	185	57.09
Female	139	42.90

Table 2: Distribution of tumors according to the location

Site	Frequency	Percentage
Eyelid	198	84.76
Orbital	42	6.63
Conjunctiva	49	5.15
Intraocular	15	3.43

Table 3: Distribution of ocular tumours according to their nature

Nature of Tumours	Frequency	Percentage
Benign	261	85.85
Malignant	43	14.14

Table 4: Clinical diagnosis of benign tumours

Type of Tumor	Frequency	Percentage
Sebaceous cyst	45	14.80
Dermoid cyst	18	5.92
Squamous papilloma	28	9.21
Intradermal nevus	43	14.14
Compound nevus	41	13.48
Capillary hemangioma	16	5.24

Wart	32	10.52
Granuloma	7	2.30
Conjunctival cyst	12	3.94
Pleomorphic adenoma	6	1.97
Epidermoid cyst	13	4.26

The largest number of clinical diagnoses of the patients presenting with suspicious ocular benign tumors were sebaceous cyst (n=45, 14.80%). The patients presented with pigmented lesions were clinically diagnosed to be compound nevi (n=41, 13.48%), intradermal nevi (n=43, 14.14%). Other frequently diagnosed cases were wart (n=32, 10.52%), dermoid cyst (n=18, 5.92%), epidermoid cyst (n=13, 4.26%), capillary hemangioma (16, 5.24%).

Table 5: Clinical diagnosis of malignant tumors

Malignant tumours	Frequency	Percentage
Basal cell carcinoma	20	6.57
Squamous cell carcinoma	8	2.63
Malignant melanoma of eyelid	6	1.97
retinoblastoma	6	1.97%
Choroidal melanoma	3	0.98%

In our study, basal cell carcinoma was the most frequently diagnosed malignant tumor accounting for 15(6.57%), followed by squamous cell carcinoma (n=8, 2.63%).

The most commonly diagnosed intraocular tumor was retinoblastoma (n=6, 2.30%)

Table 6: Distribution of benign ocular tumors according to the histopathological diagnoses

Benign Tumours	Frequency	Percentage
Sebaceous cyst	38	12.5
Epidermoid cyst	12	3.94
Capillary hemangioma	16	5.26
Cavernous hemangioma	3	0.98
Dermoid cyst	18	5.92
Compound nevus	40	13.15
Lipoma	11	3.61
Pyogenic granuloma	8	2.63
Papilloma	24	7.89
Conjunctival cyst	10	3.28
Dysplastic lesion	3	0.98
Keratoacanthoma	4	1.31
Pleomorphic adenoma	5	1.64
Intradermal nevus	40	13.15
Sebaceous gland adenoma	8	2.63

Trichilemmomal cyst	3	0.98
Nonspecific	12	3.94

Histopathologically, the most commonly diagnosed benign tumours were compound nevus and intradermal nevus, each accounting for 40(13.15%), followed by sebaceous cyst (n=38, 12.5%), papilloma (n=24, 7.89%). the other frequently diagnosed were dermoid cyst(n=18, 5.92%), capillary hemangioma(n=16, 5.26%), epidermoid cyst (n=12, 3.94%), lipoma (n=11, 3.61%), conjunctival cyst (n=10, 3.28%), pyogenic granuloma (n=8, 2.63%), pleomorphic adenoma(n=5, 1.64%)

Table 7: Distribution of malignant ocular tumors according to the histopathological diagnoses

Malignant tumours	Frequency	Percentage
Basal cell carcinoma	17	5.59
Squamous cell carcinoma	9	2.96
Malignant melanoma of eyelid	5	1.64
retinoblastoma	6	1.97
Choroidal melanoma	3	0.98
nonspecific	3	0.98

In this study, the most commonest malignant tumor diagnosed histopathologically were basal cell carcinoma accounting for 17 (5.59%), followed by squamous cell carcinoma (n=9, 2.96%), retinoblastoma (n=6, 2.63%), choroidal melanoma (n=3, 0.98%), malignant melanoma(n=5, 1.64%).

Table 8: Distribution of Intraocular tumors

Intraocular tumours	Frequency	Percentage
retinoblastoma	6	1.97
Choroidal melanoma	3	0.98
Non specific	2	0.65

DISCUSSION

Ocular tumors are very common in this part of the world and the malignant tumors require immediate diagnosis and prompt treatment to prevent patients from losing their vision and even life. Lack of awareness and ignorance of ocular tumors by people in developing countries like Nepal, can result in debility, loss of vision and occasionally even jeopardizing life. Thus this study will be taken as a baseline to help further investigation and optimal management of the ocular tumors.

In this study, male patients(n=185, 57.9%) showed slight preponderance over female patients (n=119,

39.14%) which is similar to the study done by Tariq Farooq et al where they found that males were 62.85% and females were 37.14%²

Another study by Vermuganti G K et al³ at Ophthalmology pathology service, L V Eye Institute, Hyderabad, India where they studied the clinicopathological correlation in enucleated eyes. Out of 150 patients 98 (65.33%) were male and 53 (35.33%) were female.

However Kumar R et al⁴ reported female preponderance(54.24% vs 45.76%).

In this study benign cases were 261 (85.85%) and malignant were 43(14.14%) which is similar to the result as shown by Shrestha K et al⁵, benign cases were 71% and malignant were 23%. similarly the study done by Abdi U et al⁶ showed out of 207 cases, 122(59%) were benign

However, Lavaju P et al⁷ showed benign tumours were 41.73% and malignant were 58.26%.

Clinically the most commonest benign tumor was sebaceous cyst clinically comprising (n=45, 14.80%). the patients presented with pigmented lesions were clinically diagnosed to be compound nevi (n=41, 13.48%), intradermal nevi(n=43, 14.14%). other frequently diagnosed cases were wart (n=32, 10.52%), dermoid cyst (n=18, 5.92%), epidermoid cyst(n=13, 4.26%), capillary hemangioma (16, 5.24%). In a study done by Hsu H C et al⁸ with 78 cases of the ocular tumours, the most common benign tumors were epidermal cysts(23.1%), dermoid cyst (17.9%), squamous cell papilloma (11.5%) and compound nevi(9%). Abdi U et al⁶ found vascular tumours as the most common benign tumours (21.3%), neural tumours(18%), dermoid cysts (16.4%), squamous cell papilloma(13.1%) and nevi (12.3%). Xu X L et al⁹ found inflammatory lesion to be the most common followed by melanocytic nevus, papilloma, dermoid cyst, epidermoid cyst and epithelial cyst. Among the malignant tumours, basal cell carcinoma was found to be the most common clinically as well as histopathologically comprising 20(6.5%) and 17(5.59%) respectively followed by squamous cell carcinoma (n=8, 2.63%) clinically and (n=9, 2.96%) histopathologically, malignant melanoma clinically (n=6, 1.97%) and histopathologically (n=5, 1.64%), retinoblastoma clinically(n=7, 2.30%) and histopathologically (n=6, 1.97%), choroidal melanoma was found to be clinically(n=2, 0.65%)

and histopathologically (n=5, 1.64%).this is similar to the study conducted by Banait P P et al¹⁰ which showed basal cell carcinoma as predominant accounting for 33.3% followed by squamous cell carcinoma (22.2%).In a Singapore study by, (Lee et al)reported basal cell carcinoma as the most common eyelid cancer(84%), followed by sebaceous gland carcinoma(10.2%), squamous cell carcinoma(3.4%) and malignant melanoma(1.2%)¹¹. Similarly in a study from Taiwan, the most common eyelid tumour was basal cell carcinoma(65.1%) followed by squamous cell carcinoma(12.6%)and sebaceous cell carcinoma (7.9%)¹². However, in a study done by Sunderraj P et al¹³in India, squamous cell carcinoma was the predominant malignant ocular tumour (34%) followed by sebaceous gland carcinoma(33%). Another similar study done by Kumar R et al⁴ observed that out of 59 ocular malignancies, squamous cell carcinoma was the most frequently found (66.1%) followed by basal cell carcinoma (10.2%) .In this study retinoblastoma was found to be the commonest intraocular tumour (n=6, 1.97%) followed by choroidal melanoma(n=5, 1.64%). Similarly Kumar R et al⁴ resulted retinoblastoma to be the most common intraocular tumours (6.78%). One of the Nigerian study¹⁴ also found the similar result with 55% retinoblastoma of all the ocular tumours. However, in a New York study, melanoma was the commonest malignancy (70.4%) followed by retinoblastoma (9.8%) and squamous cell carcinoma (9.2%)¹⁵. Similarly, in Alabama, melanoma was the commonest ocular malignancy (59%).¹⁶

In this study the most common site of tumor was eyelid accounting for 198(65.13%) followed by orbital tumours. This is similar to the study done by Lavaju P et al⁷ which showed eyelid tumor comprised 42.6%.

Among benign tumours most commonly diagnosed clinically were sebaceous cyst accounting for 14.80% which came out to be 12.5% after histopathology report. Clinically and histopathologically 100% correlated was dermoid cyst 5.92% and capillary hemangioma (5.26%). Among conjunctival cyst diagnosed clinically, 2 came out to be dysplastic lesion histopathologically.

Among malignant tumours, mostly diagnosed clinically was basal cell carcinoma (6.57%) and retinoblastoma (1.97%) extraocular and intraocular respectively. Retinoblastoma was correlated 100%

histopathologically. 2 cases diagnosed clinically as basal cell carcinoma turned out to be nonspecific and 1 as sebaceous cell carcinoma histopathologically.

CONCLUSION

Ocular tumors are frequently encountered in ophthalmology practice. If identified early, we can prevent visual, functional, aesthetics aspects and even save life of the patients. Patients usually present as eyelid or orbital mass, non healing wound in periocular area and rarely present with visual defects.

Sebaceous cysts, papilloma, dermoid cysts, capillary hemangioma, pleomorphic adenoma were the most frequently diagnosed benign tumours. Basal cell carcinoma, sebaceous cell carcinoma, malignant melanoma were the commonest extraocular malignant tumours whereas retinoblastoma was the commonest intraocular malignant tumors followed by choroidal melanoma.

Most of the ocular tumours were seen in eyelids followed by eyeball and the orbit.

Although there is clinic-histopathological correlation in more than 50% of cases, there is still some sort of misdiagnosis of the malignant tumours leading to unnecessary delay in the management. Any ophthalmologist should be alert in diagnosing any suspicious lesions in the eyelids and periocular regions by meticulous clinical examinations and prompt biopsy. As early diagnosis and prompt treatment of any malignancy(intraocular or extraocular) can prevent visual loss, disfigurement and even life threatening consequences.

REFERENCES

1. Yanoff M & Duker J S. Clinical anatomy of the orbit, ophthalmology 3rd edition; 2009:p-1383.
2. Tariq Farooq Babar et al. Clinicopathological correlation of enucleated eyes in pediatric population. Journal of Pakistan medical association, Hyatabad, 2009; 59:p612.
3. Vermuganti G K.Enucleation in a Tertiary Eye Care Centre in India.Prevalence, current indications and clinicopathological correlation.Indian Journal of Ophthalmology 2001 Dec; 15:760-5.
4. R Kumar, Adhikari R K, Sharma MK.pattern of ocular malignant tumours in Lumbini Eye Institutr, Bhairahawa, Nepal.The internet Journal of Ophthalmology and visual science, 2009, vol 7, no 1.

5. Shrestha K, Adhikari R K, Sharma B R. Clinicopathological Correlation of Eyelid Tumors in Lumbini Eye Institute, Bhairahawa, Nepal 2010;2(4):p55-56.
6. Abdi U, Tyagi N, Maheswori V, Gogo R, Tyagi SP. Tumours of eyelid: a clinicopathological study. J Indian Med Association 1996, Nov;94(11):405-9.
7. Lavaju P, Arya S K, Sinha A, Pandey S, Adhikari S, Shrestha B G, Chetan S, T Agarwal L. Pattern of ocular tumors in the eastern region of Nepal. Nepalese Journal of Ophthalmology (jan-june 2009). Vol 1, no 1.
8. Hsu, H C, Lin HF. Eyelid tumors in children. A clinicopathological study of a 10 year review in southern Taiwan. Ophthalmologica. 2004;218(4):274-7.
9. Xu XL, Li B, Sun XL. Clinical and pathological analysis of 2639 cases of eyelid tumors, Zhonghua Yan K E Za Zhi 2008 jan;44(1); p38-41.
10. Banait P P, Patorial N K, Sharma KD. primary tumours of eyelid. Indian Journal of Ophthalmology 1973;21(2)p200-3.
11. Lee SB, Saw S M, Eong KGA (1999). Incidence of eyelid cancers in Singapore from 1968 to 1995. Br J Ophthalmol 83:595-97.
12. Hsin-Yi Lin, Ching-Yu Cheng, Wen-Ming Hsu, Linda Kao W H (2006). Incidence of eyelid cancers in Taiwan: A 21-year review. Ophthalmology 113:2101-2107.
13. Sunderraj P. Malignant tumours of the eye and adnexa. Indian J Ophthalmology .1991;39(4):6-8.
14. Ajaiyeoba IA, Pindiga HU, Akang EE (1992). Tumors of eye and orbit in Ibadan. East Afr Med J 69:487-9.
15. Mahoney M C, Burnett WS, Majerovics A et al (1990). The epidemiology of ophthalmic malignancies in New York states. Ophthalmology 97:1143-7.
16. Swanson SW, Cloud G (1991). A retrospective analysis of primary eye cancer at the University of Alabama at Birmingham 1958-88. Part I. Eye and orbital cancer. J Am Optom Assoc 62:815-819.