



HISTOPATHOLOGICAL EVALUATION OF OCULAR AND ADNEXAL TUMOURS IN A TERTIARY CARE HOSPITAL OF ASSAM – A HOSPITAL BASED STUDY

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ABSTRACT **Objective:** The purpose of this study was to evaluate relative frequencies, age & gender distribution and Histopathological typing of ocular and adnexal tumours. **Methods:** It was a hospital based cross sectional study conducted over a period of one year. All clinically diagnosed or suspected tumours of eye and its adnexa were examined histopathologically following standard techniques and help of immunohistochemistry was taken in lymphoid neoplasm cases. **Results:** a total 60 cases of ocular and adnexal tumours were examined and 20 varieties of ocular and adnexal tumours that were diagnosed histopathologically. Age group was ranged from 2 years to 75 years and males (58.33%) were more commonly affected than female (41.67%) except eye lid tumours. The most common benign tumour of the ocular and adnexal tumours was dermoid cyst (20%) followed by naevus (10%) and squamous papilloma (8.33%). Most common intraocular childhood tumour was retinoblastoma. Common adnexal malignant tumours were sebaceous gland carcinoma followed by basal cell carcinoma in case of eye lid tumours and squamous cell carcinoma in conjunctiva. **Conclusions:** It was concluded that the most common ocular and adnexal tumours was the dermoid cyst. Secondly; two peaks noted in the age distribution of malignant ocular and adnexal tumours; one in the first decade due to retinoblastoma and other in the 6th decade due to malignant adnexal neoplasm.

KEYWORDS : ocular & adnexa, tumour, dermoid cyst, retinoblastoma, sebaceous gland carcinoma

INTRODUCTION

Intraocular tumours are rare, but of great importance, as they are usually malignant and endanger the life of the patient. The most common primary malignant intraocular tumour of childhood is retinoblastoma and incidence is 1 in 20,000 live-births¹. The most common primary intraocular malignant tumour in adult is malignant melanoma of choroid^{1,2}. The eyelids may be affected by both benign and malignant lesions. Eyelid lesions are classified according to the anatomic structures from which they arise. These include the epidermis, dermis, and various cells and adnexal structures within these layers. Squamous papilloma is the most common benign eyelid tumour². Basal cell carcinoma is the most common malignant eyelid tumour¹. Sebaceous gland adenomas and adenocarcinomas are relatively common neoplasm of eyelids and arise from the glands of Zeis or the Meibomian glands. Upper eyelid is more commonly affected than lower eyelid due to greater numbers of Meibomian glands. Histopathology remains the mainstay of diagnosis of tumour growths. In addition to determining the malignant potential of the lesions, histopathology reveals its exact nature and structure. Histopathology is also very important for staging of the tumours; which is required for the proper treatment of the patients. In Asian countries, it was found that retinoblastomas are far more common than uveal melanomas and comprise more than half of reported eye cancer cases³. Studies from the Asian region also showed that nonpigmented eyelid tumours, such as basal cell carcinomas (BCC), squamous cell carcinomas (SCC), and sebaceous gland carcinomas (SGC) are much more common than malignant melanomas⁴.

The purpose of this study was to evaluate relative frequencies and Histopathological typing of ocular and adnexal tumours along with age and gender distribution of the cases.

MATERIALS AND METHODS

This present cross sectional study was conducted in the Department of Pathology for a period of one year in a tertiary care hospital of Assam. All clinically diagnosed or suspected tumours of eye and its adnexa were examined histopathologically following standard techniques and procedure irrespective of their age, sex or other associated findings. Histopathological typing were also done following the "International Histopathological Typing of tumours of the eye and its adnexa, WHO."

RESULTS AND OBSERVATION

A total 60 cases of ocular and adnexal tumours were examined and 20 varieties of ocular and adnexal tumours that were diagnosed

histopathologically (Table-2). Among ocular & adnexa; the most common site involved by tumour was the eye-lid (43.33%) followed by the conjunctiva (21.67%) and orbit (20%) (Table-1). Help of immunohistochemistry was taken in two cases of B cell type Non Hodgkin lymphoma; one was found in conjunctiva and other was found in orbit. Age group was ranged from 2 years to 75 years. Two peaks in the age distribution of malignant ocular and adnexal tumours were found; one in the first decade due to retinoblastoma and other in the 6th decade due to malignant adnexal neoplasm. Males (58.33%) were more commonly affected than female (41.67%) with male: female ratio was 1.4:1 except sebaceous gland carcinoma of eyelid; where all 04 cases were female.

Retina was the most common site for intraocular tumours and as a whole most common site involved was the eye-lid (43.33%) followed by the conjunctiva (21.67%) and orbit (20%). Among the eye-lids, upper lid (57.69%) was more commonly affected than lower lid (42.31%). The most common benign tumour of the ocular and adnexal tumours was dermoid cyst (20%) followed by naevus (10%) and squamous papilloma (8.33%). Dermoid cyst was occasionally associated with granulomatous reaction in 50% cases. Most common malignant tumour of the eye-lid was sebaceous gland carcinoma followed by basal cell carcinoma. All four sebaceous gland carcinoma cases were found in upper eye-lid and all three basal cell carcinoma cases were found in lower eye-lid. Most common naevus was compound naevus (50%) followed by intradermal naevus (33.33%) & junctional naevus (16.67%). It was found in both eyelid and conjunctiva. Single case of melanoma was found in conjunctiva.

Table -1: Showing site distribution of Ocular and adnexal tumours

| Sites involved | No of cases | Percentage % |
|----------------|-------------|--------------|
| Eye-lid | 26 | 43.33 |
| Conjunctiva | 13 | 21.68 |
| Orbit | 12 | 20.00 |
| Eye ball | 04 | 06.68 |
| Limbus | 04 | 06.68 |
| Lacrimal gland | 01 | 01.33 |
| Total | 60 | 100% |

Table -2: Showing Histopathological typing of ocular and adnexal specimens

| Histopathological diagnosis | No of cases | Percentage % |
|-----------------------------|-------------|--------------|
| Dermoid cyst | 12 | 20.00 |

| | | |
|--|----|-------|
| Epidermal cyst | 05 | 08.33 |
| Cavernous haemangioma | 02 | 03.33 |
| Capillary haemangioma | 03 | 05.00 |
| Pyogenic granuloma | 01 | 01.68 |
| Naevus | 06 | 10.00 |
| Non-Hodgkin's lymphoma | 02 | 03.33 |
| Squamous papilloma | 05 | 08.33 |
| Ectopic lacrimal gland | 01 | 01.68 |
| Complex choristoma | 01 | 01.68 |
| Conjunctival intraepithelial neoplasia III | 01 | 01.68 |
| Schwannoma | 01 | 01.68 |
| Neurofibroma | 01 | 01.68 |
| Pleomorphic adenoma | 01 | 01.68 |
| Basal cell carcinoma | 03 | 05.00 |
| Squamous cell carcinoma | 04 | 06.68 |
| Sebaceous gland carcinoma | 04 | 06.68 |
| Conjunctival melanoma | 01 | 01.68 |
| Retinoblastoma | 04 | 06.68 |
| Inadequate biopsy | 02 | 03.33 |
| Total | 60 | ~100% |

DISCUSSION

In the present study; the most common benign tumour of the ocular and adnexal tumours was dermoid cyst (20%) followed by naevus (10%) and squamous papilloma (8.33%). These observations were comparable to other studies: Gogi et al⁵ observed that the commonest tumour of ocular and adnexa was the pseudotumour (21.47%) followed by dermoids (20.80%). Das et al⁸ had observed that dermoid cyst was the most common tumour-like lesion (16%). Krishnamurthy et al⁷ had observed that the most common benign eye-lid tumours included epidermal cyst (30.5%), nevi (17.5%), dermoid cyst (13.8%) and papilloma (6.5%).

Again, among the all ocular and adnexal tumours, benign tumours (66.67%) were more common than malignant tumours (30%). This data is comparable to the following studies: Das et al⁸ had observed that out of their 89 cases; twenty lesions were malignant and 69 were benign. Das et al⁸ had observed that malignant tumours were 134 (32.36%) and benign were 280 (67.63%). Shimizu et al⁹ had observed that the proportion of benign tumors to all tumors was 59.4% (221/372) and that for malignant tumors was 40.6% (151/372). Paul et al¹⁰ had observed that benign (64.28%) cases were more common than malignant (35.71%) cases. Das et al⁸ had also observed that out of total 1003 cases; 622 (62.01%) cases were benign tumours and 381 (37.98%) cases were malignant tumours.

In this study; males (58.33%) were more commonly affected than female (41.67%) and male: female ratio was 1.4:1; which are comparable to the following studies: Gogi et al⁵ had observed that males (60.24%) were affected more commonly than females. Das et al⁸ had observed that out of 414 tumours of which 216 were male and 198 were female. Again, retina was the most common site for intraocular tumours and as a whole most common site involved was the eye-lid (43.33%) followed by the conjunctiva (21.67%) and orbit (20%). Again, malignant tumours were more commonly found in eyelid (7cases) followed by conjunctiva (6 cases) and eyeball (4 cases). These observations are comparable to other studies: Gogi et al⁵ had observed that among ocular and adnexal tumours, orbital tumours were the commonest (183 cases) followed by lid (138 cases), conjunctiva (98 cases), eyeball (68 cases) and limbus (16 cases). Das et al⁸ had observed that among the tumours and tumour-like lesions of the eye; eyelid (51%) was the most frequent location, followed by the conjunctiva (32%). Dipankar Das et al⁸ had observed that among the 414 ocular & adnexal tumours, Lid tumours (n=149) were highest followed by conjunctival tumours (n=109), Orbital tumours (n=103) and intraocular tumours (n=34).

Most common intraocular childhood tumour was retinoblastoma observed in the present study. All cases were diagnosed in the first decade and optic nerve infiltration by the tumour cells were relatively common finding (75%). Male: female ratio was 3:1. These observations are comparable to other studies: Gogi et al⁵ had observed that the commonest eyeball tumour was retinoblastoma (88.24%) and was responsible for the increased incidence of eyeball tumours during

the first decade of life. Males (57.35%) were affected more than females (42.65%). Das et al⁸ had observed that Retinoblastoma (RB) (81.5%) was the most common intraocular malignancy, followed by melanoma (18.4%).

In the present study, all sebaceous gland carcinomas were found in the upper lid and all basal cell carcinomas were found in the lower lid. These observations are comparable to the following studies: Abe et al¹¹ had observed that out of 17 basal cell carcinoma; 10 cases were in the lower eyelid, and all with sebaceous adenocarcinomas in the upper eyelid. Shukla et al¹² had observed that the upper lid was affected in most of the cases of Meibomian gland carcinoma (90%). Wolfe JT 3rd et al¹³ had observed that the sebaceous carcinoma of the eyelid tumors manifested most frequently on the upper eyelid. Spraul CW et al¹⁴ had observed basal cell carcinoma in lower lid in 63.1% cases.

CONCLUSION

It was concluded that the most common ocular and adnexal tumours was the dermoid cyst followed by naevus and squamous papilloma. Secondly; majority of tumours from the conjunctiva, eyelids, and orbit were benign, while most intraocular tumours were malignant. Lastly; two peaks noted in the age distribution of malignant ocular and adnexal tumours; one in the first decade due to retinoblastoma and other in the 6th decade due to malignant adnexal neoplasm.

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