

Distribution and Histopathological Evaluation of Eyelid, Conjunctival and Orbital Tumours

¹A.V.Subba Rao, ²M. L. Karthika, ³R V Manasa

¹(Associate Professor, Dept. of Ophthalmology, Dr PSIMS & RF, India)

²(Senior Resident, Rangaraya Medical College, Kakinada, India)

³(Statistician, Dept. of Community Medicine, GIMSAR, Vishakapatnam, India)

Abstract:

Introduction: Ocular neoplasm being the most important cause of morbidity and mortality, early diagnosis and detection of the pathology is crucial for proper treatment and better prognosis. In clinical practice, eye Tumours and Tumour-like lesions can be classified into extra- and intra-ocular. Benign growth of eyelid includes xanthelasma, molluscum, warts, naevus, angioma and other tumours common to skin and cutaneous glands. Present study conducted with following Objectives: 1. To highlight the benign and malignant Tumours of eyelid, conjunctiva and orbit for early diagnosis and management. 2. Histopathological analysis to establish the type and subtype of benign and malignant Tumours.

Methodology: This present study was a hospital based, longitudinal study conducted between August 2012 to August 2014. Patients with benign and malignant Tumours of eyelid, conjunctiva and orbit were included in the study and those who had Infective, inflammatory and traumatic lesions of eyelids, conjunctiva and orbit were excluded from study.

Results: The study comprised 36 cases, out of them 19 subject had Eyelid, 9 Conjunctival and 8 Orbital Tumours. Among 19 eyelid Tumours, we found 17 Benign Tumours and 2 Malignant Tumours. Most common benign Tumour of eyelid seen in our study was Nevus (7 cases) followed by epidermoid cyst (5 cases), Papilloma(3 cases), xanthelasma(1 case), keratin cyst(1 case). Most common benign Tumour of conjunctiva seen in our study was Nevus (4 cases), followed by dermolipoma (2 cases), papilloma (1 case) and dermoid cyst (1 case). All 4 Nevus cases were melanocytic nevus type. Most common Tumour of orbit in our study was Hemangioma(3 cases), followed by neurofibroma(2 cases) and Dermoid cyst(2 cases).

Conclusion: The clinical evaluation and histopathological examination of the ocular Tumours has immense role in classifying the Tumours, establishing the final diagnosis and also in planning the most effective treatment modalities to reduce the morbidity and mortality to the possible extent.

Keywords: Benign tumour of eyelid, conjunctiva and orbit. Malignant tumour of eyelid, conjunctiva and orbit.

I. Introduction

Ocular neoplasm being the most important cause of morbidity and mortality, early diagnosis and detection of the pathology is crucial for proper treatment and better prognosis. These Tumours arise as primaries from orbital and ocular tissues or spread from contiguous anatomic structures like the paranasal sinuses, nasopharynx, brain, and as secondaries from distant structures. The histopathological characteristics of these Tumours are critical to their biologic behaviour, line of management, outcome, and prognosis. Peri-ocular area is a common site for benign and malignant lesions in all age groups. Peri-ocular structures that include the eyelids, eyebrows, lacrimal sac, and conjunctiva are derived from the surface ectoderm and congenital anomalies can present as Tumour or Tumour-like lesion at birth or soon after birth. In clinical practice, eye Tumours and Tumour-like lesions can be classified into extra- and intra-ocular. Benign growth of eyelid include xanthelasma, molluscum, warts, naevus, angioma and other tumours common to skin and cutaneous glands. Xanthelasma are slightly raised yellow plaques most commonly found in upper and lower lids and oftenly seen in elderly women having diabetes and hypercholesterolaemia. Orbital tumors are rare and can occur at all stages in life. Benign growths include dermoid cyst, dermolipoma, angioma, osteoma, plexiform neuroma, meningioma and meningoencephalocele¹. Basal cell carcinoma is the most common malignant eyelid tumour predominantly effecting lower lid and medial canthal area². Orbital tumours are not very common. These includes primary, secondary and meta static tumours. Orbit is mainly (90%) involved by malignant non- Hodgkin B-cell lymphomas in case of malignant orbital Lymphomas³. In our study, only extra- ocular Tumours that is eyelid, conjunctiva and orbital Tumours were investigated. So the present study conducted with following Objectives: 1. To highlight the benign and malignant Tumours of eyelid, conjunctiva and orbit for early diagnosis and management. 2. Histopathological analysis to establish the type and subtype of benign and malignant Tumours.

II. Materials and Methods

A Total number of 36 patients coming to Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation fulfilling the study criteria were included in the study.

Inclusion Criteria: Patients with benign and malignant Tumours of eyelid, conjunctiva and orbit who have given informed consent.

Exclusion criteria: Infective, inflammatory and traumatic lesions of eyelids, conjunctiva and orbit.

This present study was a hospital based, longitudinal study conducted between August 2012 to August 2014. In each case clinical diagnosis was confirmed by histopathology. Each case was analyzed based on Sex and age distribution of lesions, site of lesions, clinical diagnosis of Tumours and Histopathological result of Tumours. If the lesion had clinical features of benign Tumour, lesion was excised and sent in specimen bottle soaked in formalin for histopathological examination. If the eyelid lesion had clinical features of malignancy, wide surgical excision along with atleast 4mm normal tissue around it. Specimen excised was labelled and placed in a bottle containing formalin and sent for histopathology. In case of histopathologically confirmed malignant lesion, margin clearance was noted.

All samples were sent to Department of Pathology, for histopathological examination. In pathology department macroscopic examination of tissues was done. Resected margins of received biopsy was fixed in 10% formalin and processed conventionally by embedding in paraffin blocks with later sectioning. Sections were stained with Haematoxylin and Eosin and special stains as and when required. Section was studied for histopathological type and subtype of Tumour.

III. Results

The study comprised 36 cases in which we found 19 Eyelid, 9 Conjunctival and 8 Orbital Tumours.

1) Eyelid Tumours:

A) Distribution of types of Eyelid Tumours: Among 19 eyelid Tumours we found 17 Benign Tumours and 2 Malignant Tumours.

B) Age, Sex and Site Distribution of Eyelid Tumours: Mean age of patients was 52yrs with range between 0-90yrs. Benign Tumours were more frequent in middle aged patients seen most commonly in 4th and 5th decade. Malignant Tumours were seen in elderly patients in 6th and 9th decade. Related to gender, 11 cases were male with 10 benign and 1 malignant Tumour and 7 cases were female with 6 benign Tumours and 1 malignant Tumour. In our study eyelid Tumours were seen more predominantly in male patients and equal sex predilection of malignant Tumours. The topographical analysis of lesions showed the frequency of locations: 11 cases at upper lid and 8 cases at lower lid. Benign Tumours most commonly in upperlid and malignant Tumours equal distribution.

C) Types of Benign Tumours of Eyelid: Most common benign Tumour of eyelid seen in our study was Nevus (7 cases) followed by epidermoid cyst (5 cases), Papilloma(3 cases), xanthelasma(1 case), keratin cyst(1 case). Among Nevus cases 4 were compound nevus type and 3 were junctional nevus type.

D) Types of Malignant Tumours of Eyelid: Only malignant Tumour of eyelid seen in our study was sebaceous gland carcinoma.

2) Conjunctival Tumours:

A) Distribution of Different Types of Conjunctival Tumours: Among 9 conjunctival Tumours we found 8 benign and 1 malignant Tumour.

B) Age, Sex and Site Distribution of Conjunctival Tumours: Mean age of patients with Conjunctival tumours was 27yrs with range between 0-70yrs. Benign and malignant Tumours were most commonly seen in 1st and 2nd decades. Related to gender, overall 7cases were male with 6 benign and 1 malignant Tumour and 2 cases were female and 2 were benign. In our study Conjunctival tumours were predominantly seen in male patients.

C) Types of Benign Tumours of Conjunctiva: Most common benign tumour of conjunctiva seen in our study was Nevus (4 cases), followed by dermolipoma (2 cases), papilloma (1 case) and dermoid cyst (1 case).All 4 Nevus cases were melanocytic nevus type.

D) Types of Malignant Tumours of Conjunctiva: Only malignant tumour of Conjunctiva seen in our study was Squamous Intraepithelial Neoplasia.

3) Orbital Tumours:

A) Distribution of different types of Orbital Tumours: Among 8 Orbital Tumours, we found 7 benign and 1 malignant tumour.

B) Age, Sex and Site distribution of Conjunctival Tumours: Mean age of patients with orbital Tumours was 24yrs with range between 0-70yrs. Benign Tumours were more frequent in 1st and 2nd decades and malignant Tumour in 6th decade. Related to gender, overall 5cases were female with 4 benign and 1 malignant Tumour

and 3 cases were male with 3 cases benign. In our study orbital Tumours were seen more predominantly in female patients.

C) Types of Orbital Benign Tumours: Most common benign Tumour of orbit in our study was Hemangioma (3 cases), followed by neurofibroma (2 cases) and Dermoid cyst (2 cases). Among Hemangioma cases 2 were capillary Hemangioma and 1 was intramuscular Hemangioma.

D) Types of Orbital Malignant Tumours: Only malignant Tumour of orbit seen in our study was Non-Hodgkins Lymphoma.

IV. Discussion

This was the hospital based longitudinal study which included 36 patients of Eyelid, Conjunctiva and Orbit Tumours attending our hospital. Among 36 Tumours Eyelid Tumours are 19, Conjunctival Tumours are 9 and Orbital Tumours are 8 in number. Eyelid Tumours represented 53%, Conjunctival Tumours 25% and Orbital Tumours 22% of all Tumours.

Among the eyelid Tumours we studied benign Tumours are identified in 17 cases and malignant Tumours in 2 cases. Benign lesions represented 89% and malignant 11% of all eyelid Tumours. Deprez M et al found that benign Tumours largely predominated over malignant Tumours representing 84% cases¹. Another study conducted by Paul S et al also found that benign lesions were more common which were seen in 75.9% of all cases among 855 cases studied and malignant lesions were seen in 24.1%³. Topographical analysis of eyelid lesions showed that most common location of eyelid Tumour is upper eyelid representing 57.8% followed by lower eyelid representing 42.1%. Coroi M C et al found that Tumours developed mostly in lower eyelid than upper eyelid². In this study, among benign Tumours of eyelid common location is upper eyelid in 10 cases representing 59% followed by lower eyelid in 7 cases representing 41%. Study conducted by Asadi Amoli F et al studied 1103 eyelid Tumours showed that most common benign Tumour was Nevus (37.7%) followed by Hamartoma (19.6%) and papilloma (15.9%)⁸. Another recent study also showed that most common benign Tumour was Melanocytic Nevi (35%) among 182 patients studied in a 10 yr survey from a tertiary hospital in Tehran⁵. The most prevalent benign masses in the studies by Coroi² et al and Deprez¹ et al were papilloma. Some of these disparities are interesting due to demographic differences. In our study most common benign Tumour was Nevus representing 41% of all benign cases. Different studies have reported various frequencies of benign Tumours some of which are similar to our study Apart from Nevus, we found 5 cases of Epidermoid cyst, 3 cases of papilloma and 1 each case of xanthelasma and keratin cyst was seen. In our study most common malignant lesions seen were SGC (100%). Studies from other countries have reported difference in types and frequencies of malignant eyelid Tumours. In most of studies from other countries BCC is the most frequent malignant Tumour of the eyelid^{1,7,11}. However, frequency of SGC is higher in Asian countries^{3,6}. In our study SGC was most common malignant Tumour consistent with studies from Asian countries. Studies from Singapore reported incidence of 10-40% of SGC⁶. A study from central India by Jahagirdar SS et al concluded that SGC is almost as common as BCC in India⁴.

For the Conjunctival Tumours, we identified Benign Tumours in 8 cases and Malignant Tumour in 1 case. Benign lesions represented 89% and malignant 11%. Zaidi N et al found that benign Tumours were more frequent which were seen in 74.50% of all cases studied and malignant Tumours were seen in 25.50%¹⁴. Another study conducted by Bastola et al also found that benign lesions were more common which were seen in 79% of all cases studied and malignant lesions were seen in 21%¹³. In our study Benign lesions were represented by Nevus (4 cases), followed by dermolipoma (2 cases), papilloma (1 case) and dermoid cyst (1 case). Bastola et al found that most common benign lesions were granuloma pyogenicum (22.5%) followed by intradermal nevus (4.5%). In our study most common malignant lesion seen was squamous intraepithelial neoplasia consistent with other studies^{12, 13, 14}.

For the Orbital Tumours we studied we identified benign Tumours in 7 cases and malignant Tumour in 1 case. Benign lesions represented 88% and malignant 12%. Radha. J. et al found that benign lesions were more frequent which were seen in 70.8% and malignant lesions were seen in 29.2%¹⁵. Another study conducted by Nath K et al found benign lesions were most frequent which were seen in 85.81% and malignant lesions were seen in 14.17%¹⁶. In our study Benign lesions were represented by Hemangioma (3 cases), followed by neurofibroma (2 cases) and Dermoid cyst (2 cases). Radha. J. et al also found that among benign lesions hemangiomas were most common (23.5%)¹⁵. In our study, the mean age of patients with benign orbital Tumours was 18 yrs and they were more prevalent in females representing 57%. Nath K et al found that age of the patients having primary orbital tumours varied from 1 to 69 years although they were more common during the first two decades (69 cases)¹⁶. Our study also showed more prevalence in first two decades. In our study malignant lesion seen was Non-Hodgkin Lymphoma consistent with other studies. Study conducted by J H Koopman et al found that most common tumour type was lymphoma representing 67% of all malignant Tumours¹⁷.

V. Conclusion

Ocular Tumours though rare in clinical practice, should be evaluated and the diagnosis must be confirmed by doing histopathological examination. This study revealed that Benign ocular Tumours are the commonest involving the eyelid, conjunctiva and orbit. The histopathological evaluation helped in the final diagnosis of the Tumours. Hence our study enlightened the diagnosis of malignant and benign Tumours. This helped immensely in carrying out effective treatment modalities, which in turn enabling to explain mortality and morbidity to the patients. To conclude the clinical evaluation and histopathological examination of the ocular Tumours has immense role in classifying the Tumours, establishing the final diagnosis and also in planning the most effective treatment modalities to reduce the morbidity and mortality to the possible extent.

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