

## Morphological, Clinico-Pathological correlation and pattern of prevalence of Ocular Tumours

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**Background:** Ocular tumours form an important group of ophthalmic neoplasm which can impair vision. Their presentation, morphological type and management are challenging. Histopathological analysis is essential in making correct diagnosis and helps in deciding the management. Here we determined the clinical presentation and histopathologic type of ocular tumours in tertiary care hospital, Ajmer, Rajasthan, India.

**Aim:** To study the morphological, clinico-pathological correlation and pattern of prevalence of ocular tumour.

**Material and method:** This prospective study was conducted on 50 patients from July 2015 to December 2017. A structured performa was used to record findings, patient's bio data, clinical presentation, type of surgical intervention and histological diagnosis.

**Result:** The patient age ranges from 2 months to 81 years with bimodal presentation. Out of 50 patients 29 were females and 21 were males. The most common clinical presentation was mass on eyelids (66%). Clinical diagnosis was consistent with histopathological diagnosis in most cases. The benign and malignant lesion was 78% and 22% respectively.

**Conclusion:** The most common benign lesion was haemangioma in both age group (adult and paediatric age); while the squamous cell carcinoma and basal cell carcinoma were the most prevalent malignant tumours in adults and retinoblastoma in paediatric age group.

**Keywords:** Ocular tumours, haemangioma, retinoblastoma, squamous cell carcinoma, basal cell carcinoma.

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### I. Introduction

The orbit is an anatomically complex structure with limited bony space, even a small pathological reaction occurring inside orbit can impair vision<sup>1,2</sup>. A wide variety of cell types in and around eye spawn benign and malignant neoplasms and the frequency with which the different cell types become neoplastic varies immensely. Hence the neoplastic lesions of these tissues display much more variation than similar tissues in other parts of the body. Many neoplastic conditions masquerade as or mimic other less aggressive neoplastic or non-neoplastic inflammatory conditions and need differentiation before definitive therapy is planned<sup>3</sup>. Tumours of the eyelids, conjunctiva and lacrimal gland form an important group of ophthalmic neoplasms which can impair vision. The common benign eyelid lesion include dermoid cyst, epidermal inclusion cyst, capillary and cavernous haemangioma, intradermal naevus, neurofibroma, while common malignancies include basal cell carcinoma, squamous cell carcinoma, malignant melanoma and sebaceous carcinoma. The common benign lesion of conjunctiva include dermoid cyst, conjunctival papilloma, haemangioma, naevus. Conjunctival tumors occurred maximally in second decade and commonest benign tumor is squamous papilloma while the commonest tumor is squamous cell carcinoma. Lesions and tumors of lacrimal gland comprise 5-18% of orbital masses studies. The benign tumors like haemangioma, choriostoma, fibroma and lipoma can occur within the orbit and can result in grave consequences for the patient's vision.

The retinoblastoma is the most common malignant intraocular tumor of infancy and early childhood.

Orbito-ocular tumours are rare and there are few composite studies of these tumours. Many of the reports of ocular tumours have dealt mainly with individual tumours like retinoblastoma, lacrimal gland tumour, meibomian gland, conjunctiva and orbital<sup>4</sup>.

Hence, we want study the morphological, clinico-pathological correlation and pattern of prevalence of ocular tumours in Ajmer, Rajasthan, region.

## II. Material And Method

This hospital based prospective study was conducted on 50 patients from July 2015 to December 2017 in Department of Ophthalmology, JLN Medical College, Ajmer, Rajasthan.

After taking informed consent, all the subjects were asked detailed ocular and systemic history and subjected to ophthalmic examination. A structured performa was used to record findings, patient's bio data, clinical presentation, type of surgical intervention and histological diagnosis.

Detailed microscopic examination of the biopsy specimens regarding numerous histological pattern, cellular features, vascularity and secondary changes, was done to arrive at a histopathological diagnosis and lesions were classified as benign and malignant.

For data analysis Microsoft excel and statistical software SPSS was used.

## III. Result

### 1. Age wise distribution

Total 50 patients were studied. Out of 50 patients maximum no.(54.00%) of patients were in age group of >45 years and minimum patients(14.00%) in 0-15 years age group.

Age group (Yrs)	No. of patients	Percentage
0-15	7	14.00
16-30	8	16.00
31-45	8	16.00
>45	27	54.00
Total	50	100.00

### 2. Sex wise distribution

Above table shows that female patients were more affected than male patients with 58.00% females and 42.00% male.

Sex	No. of patients	Percentage
Male	21	42.00
Female	29	58.00
Total	50	100.00

### 3. Clinical presentation

Maximum no. of patients present with growth on upper lid (52%) followed by growth on ocular coats (34%).

Clinical presentation	No. of patients	Percentage
Growth on ocular coats	17	34.00
Growth on lower lid	7	14.00
Growth on upper lid	26	52.00
Total	50	100.00

### 4. Types of tumour

According to histopathology report, benign tumor was present in 39 (78%) patients and malignant tumour were present in 11(22%) patients.

Type of tumors	No. of patients	Percentage
Benign tumor	39	78.00
Malignant tumors	11	22.00
Total	50	100.00

### 5. Types of Benign Tumour

Haemangioma was the most common and present in 25.64%% of cases, sebaceous cyst was present in 20.51% cases, dermoid was present in 15.38%% cases ,both epidermoid cyst and squamous papilloma was present in 12.82% cases, conjunctival cyst in 7.69% cases and sebaceous adenoma and naevus was present in 2.56% cases.

Benign tumors	No. of patients	Percentage
Lipodermoid	6	15.38
Haemangioma	10	25.64
Squamous papilloma	5	12.82
Sebaceous cyst	8	20.51
Naevus	1	2.56

Conjunctival cyst	3	7.69
Epidermoid cyst	5	12.82
Sebaceous adenoma	1	2.56
Total	39	100.00

### 6. Types of Malignant Tumour

In distribution of malignant tumor 27.27% cases were of Basal Cell Carcinoma and Squamous Cell Carcinoma, 18.18% cases of malignant melanoma and retinoblastoma and 9.09% cases of meibomian cell carcinoma.

Malignant tumors	No. of patients	Percentage
Basal cell carcinoma	03	27.27
Squamous cell carcinoma	03	27.27
Meibomian cell carcinoma	01	9.09
Malignant melanoma	02	18.18
Retinoblastoma	02	18.18
Total	11	100.00

### Pictures of cases

**Squamous cell carcinoma**



**Basal cell carcinoma**



**Limbal Dermoid**



**Naevus**



### IV. Discussion

In the present study it was found that ophthalmic lesions were the highest in adult age group (>45years). Our results are in line with observation by Marshall EC et al<sup>5</sup>.

Females were more commonly affected than males in our study but most of the tumors were found in males in the study of Palaniswamy Sunderraj et al<sup>6</sup> and Pombejara et al<sup>7</sup>.

Location wise, eyelid was the most commonly involved site, similar findings have been observed by Chauhan SC et al<sup>8</sup>.

In our study benign tumors(78%)were more commonly encountered. This was similar to that observed by P Bastola et al<sup>9</sup> and Imran Y. Shaikh et al<sup>10</sup>.

Among the benign ophthalmic lesions, haemangioma(25.6%) followed by sebaceous cyst(20.5%) were the most common. In series by Imran Y Shaikh<sup>10</sup> haemangioma was the most common benign tumor. However, N Ud-Din et al<sup>11</sup> shows Naevus was the most common benign tumor while Arya S K et al<sup>12</sup> shows conjunctival papilloma, dermoid cyst, naevus, cystic lesion and haemangioma were the most common benign lesions.

Among the malignant lesions, Squamous Cell Carcinoma and Basal Cell Carcinoma(27.3%) were the most common tumor followed by Malignant Melanoma and Retinoblastoma(18.2%). In series by Chang-jun Wang et al<sup>13</sup> shows Basal Cell Carcinoma was the most common Malignant tumor followed by Sebaceous gland carcinoma, Squamous Cell Carcinoma and Malignant Melanoma.

Retinoblastoma was the most common malignant tumour in children. This result is in line with observation by Marshall et al<sup>5</sup>.

### V. Conclusion

Vast spectrum and presentation of benign and malignant lesions as encountered in our study.

- Adults (>45 years) were more affected by benign tumours, which was presented as growth on eyelids.
- Among benign tumours haemangioma was the most common followed by sebaceous cyst.
- In malignant tumours, basal cell carcinoma and squamous cell carcinoma were the most common followed by malignant melanoma and retinoblastoma.
- Retinoblastoma being the most common tumor in pediatric age group.

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