

Clinical Profile of Periocular Tumors at a Tertiary Care Center in Southern Odisha

Somani Baral¹, Rajesh Kumar Sethy², Debasis Jena³, Rutayani Dash⁴, Sarita Panda⁵

¹Postgraduate Resident, Department of Ophthalmology, MKCG Medical College, Berhampur, Odisha

²Postgraduate Resident, Department of Ophthalmology, MKCG Medical College, Berhampur, Odisha

³Postgraduate Resident, Department of Ophthalmology, MKCG Medical College, Berhampur, Odisha

⁴Assistant Professor, Department of Ophthalmology, MKCG Medical College, Berhampur, Odisha

⁵Professor and HOD, Department of Ophthalmology, MKCG Medical College, Berhampur, Odisha

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Corresponding Author: Dr. Somani Baral

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Abstract:

This prospective observational study at MKCG Medical College, Berhampur, Odisha, was conducted from April 2023 to March 2024 to analyze the clinical presentations, treatment modalities, and outcomes of periocular tumors. The study encompassed 28 patients, differentiating between benign and malignant tumors based on histopathological evaluations. Benign tumors, primarily dermoid cysts, were effectively managed with surgical excision, while malignant tumors, including basal cell carcinoma, required combined surgical and radiotherapeutic approaches. The findings indicate that meticulous surgical management and targeted adjunct therapies can lead to excellent outcomes, with minimal complications and recurrence. This study underscores the critical importance of precise diagnostic and therapeutic strategies in managing periocular tumors.

Keywords: Periocular Tumors, Surgical Excision, Radiotherapy, Histopathological Evaluation.

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Introduction

Periocular tumors encompass diverse lesions that arise around the eyelids, orbit, and lacrimal structures [1]. These tumors can vary significantly in their etiology, ranging from benign growths that cause minimal disruption to malignant tumors that may necessitate aggressive treatment and can threaten both vision and life [2,3]. Given the critical anatomical location surrounding the eye, both benign and malignant periocular tumors can impact ocular function and aesthetics, making their management a pivotal aspect of ophthalmic care [4].

The eyelids and surrounding structures are complex and densely populated with various types of tissue, including skin, muscle, connective tissue, and glands. This anatomical diversity gives rise to a variety of neoplasms, with a prevalence and nature that can vary based on demographic and geographic factors. Common benign periocular tumors include dermoid cysts, hemangiomas, and nevi, while malignant varieties may include basal cell carcinoma, squamous cell carcinoma, and sebaceous gland carcinoma [5,6]. The management of these tumors is challenging due to the delicate nature of the surrounding tissues and the necessity for maintaining both functional and cosmetic integrity post-treatment. Traditional treatments

have ranged from simple excision to more complex surgical reconstructions, often accompanied by adjunct therapies such as radiotherapy or chemotherapy in the case of malignant tumors [7,8]. The primary aim of this study is to differentiate the clinical presentation of benign and malignant periocular tumors in a tertiary care setting. This will involve a detailed examination of the morphological characteristics, growth patterns, and symptomatic presentation of these tumors. The study seeks to identify specific clinical markers that may help in distinguishing between benign and malignant forms efficiently and effectively, thereby facilitating earlier and more accurate diagnoses.

Methodology

Study Design: This research is structured as a prospective observational study to be conducted over one year, from April 2023 to March 2024, at the Department of Ophthalmology, MKCG Medical College, Berhampur, Odisha. The study aims to observe and record the clinical presentations, treatments, and outcomes of patients presenting with periocular tumors.

Study Population: The study population consists of patients presenting to the Ophthalmology Outpatient Department (OPD) at MKCG Medical

College with periocular growths. A total of 28 cases are planned to be included in this study, encompassing a diverse demographic that includes various age groups and both genders.

Inclusion Criteria

- Patients of any age presenting with periocular growths.
- Patients who consent to participate in the study.

Exclusion Criteria

- Patients who do not provide consent for inclusion in the study.
- Patients who are lost to follow-up during the study period.

Data Collection

1. Preoperative Evaluation

- **History Taking:** Detailed medical history focusing on the duration, growth pattern, and any associated symptoms of the periocular tumors.
- **Physical Examination:** General physical examination followed by a specialized local examination of both eyes and the periocular area.
- **Ophthalmic Examination**
 - a) Visual acuity testing using Snellen's chart.
 - b) Intraocular pressure measurement.
 - c) Anterior segment examination via slit lamp.
 - d) Posterior segment examination using direct and indirect ophthalmoscopy.
 - e) Torchlight examination of the periocular region.
 - f) Inspection and palpation of the periocular mass to assess size, consistency, and mobility.

2. Diagnostic Imaging and Laboratory Tests

- **Imaging:** X-ray and CT scan of the orbit to evaluate the extent of the tumor and involvement of adjacent structures. MRI may be employed in selected cases to assess complex cases or suspected malignancy.
- **Laboratory Tests:** Complete blood count (CBC), Hepatitis B surface antigen (HbsAg), fasting blood sugar (FBS), postprandial blood sugar (PPBS), and routine urine analysis. These tests help in assessing the general health status and any potential metabolic contributors to tumor growth or challenges in treatment planning.

Interventions

- **Surgical Management:** Depending on the initial assessment, benign tumors will typically be managed with excision under local anesthesia, aiming for complete removal with primary reconstruction of the eyelid if

necessary. For malignant tumors, a more extensive surgical approach may be adopted, including obtaining a margin of healthy tissue around the tumor.

- **Histopathological Examination:** All excised tumors will be sent for histopathological examination to confirm the diagnosis and assess the margins.
- **Adjunct Treatments:** Malignant tumors may require additional treatments such as radiotherapy, depending on the type and extent of the malignancy.

Follow-up and Postoperative Care: Patients will be followed up post-operatively to monitor healing, detect any recurrence of the tumor, and manage complications. The follow-up schedule will be tailored based on the type of tumor and treatment provided, typically ranging from a few weeks for benign conditions to several months or longer for malignant conditions.

Data Analysis: Data will be analyzed to determine the correlation between clinical presentation and histopathological diagnosis. Statistical methods will be used to evaluate treatment outcomes and to identify any significant patterns or trends in the presentation and management of periocular tumors.

Results

The study on periocular tumors conducted at MKCG Medical College, Berhampur, Odisha, from April 2023 to March 2024, yielded significant insights into the clinical profile and management outcomes of these tumors.

A total of 28 patients were enrolled in the study, consisting of both male and female patients across various age groups. The tumors were classified into benign and malignant categories based on histopathological examination. The benign tumors identified included dermoid cysts, hemangiomas, nevi, hamartomas, polyps, and squamous papillomas, with dermoid cysts being the most commonly observed type. These benign tumors were predominantly located on the upper eyelid. On the other hand, malignant tumors included basal cell carcinoma and sebaceous gland carcinoma, with basal cell carcinoma being the more prevalent type among the malignant group.

Treatment approaches varied based on the nature of the tumor. Benign tumors were predominantly managed through surgical excision under local anesthesia, and all excisions aimed at achieving tumor-free margins, which was confirmed via intraoperative frozen sections. Primary reconstruction was successfully performed in cases where significant tissue removal was necessary. Malignant tumors, however, required more comprehensive management; excised tissues were subjected to rigorous histopathological examination

to ensure complete removal, and in cases of basal cell carcinoma, adjunct radiotherapy was administered post-surgically. The follow-up data indicated successful recovery and minimal complications in the majority of the benign cases. Recurrences were rare and were effectively managed with repeat procedures when necessary. Malignant cases showed no early recurrence post-

treatment during the follow-up period, highlighting the effectiveness of the combined surgical and radiotherapeutic approach. These tables collectively provide a detailed view of each aspect of the patient data and study results, making it easier to analyze specific details and conclude the aggregated data.

Table 1: Patient Demographics

| Patient ID | Age | Gender | Tumor Location |
|------------|-----|--------|----------------|
| 001 | 50 | Female | Upper eyelid |
| 002 | 36 | Female | Lower eyelid |
| 003 | 29 | Female | Upper eyelid |
| 004 | 23 | Male | Upper eyelid |
| 005 | 16 | Female | Upper eyelid |
| 006 | 68 | Female | Lower eyelid |
| 007 | 82 | Female | Lower eyelid |
| 008 | 99 | Female | Upper eyelid |
| 009 | 74 | Male | Upper eyelid |
| 010 | 40 | Male | Upper eyelid |

Table 2: Tumor Characteristics

| Patient ID | Tumor Type | Nature | Diagnosis |
|------------|------------|-----------|-------------|
| 001 | Cyst | Benign | Dermoid |
| 002 | Hamartoma | Benign | Vascular |
| 003 | Nevus | Benign | Intradermal |
| 004 | Cyst | Benign | Dermoid |
| 005 | Cyst | Benign | Dermoid |
| 006 | Carcinoma | Malignant | Basal cell |
| 007 | Carcinoma | Malignant | Basal cell |
| 008 | Lymphoma | Malignant | Lymphoma |
| 009 | Carcinoma | Malignant | Sabaceous |
| 010 | Adenoma | Benign | Pleomorphic |

Table 3: Treatments and outcomes

| Patient ID | Treatment Method | Follow up results | Complications |
|------------|------------------------|-------------------|---------------|
| 001 | Excision | No-recurrence | None |
| 002 | Excision | No-recurrence | None |
| 003 | Excision | No-recurrence | None |
| 004 | Excision | No-recurrence | None |
| 005 | Excision | No-recurrence | None |
| 006 | Excision+ Radiotherapy | No-recurrence | None |
| 007 | Excision+ Radiotherapy | No-recurrence | None |
| 008 | Radiotherapy | No-recurrence | None |
| 009 | Excision+ Radiotherapy | No-recurrence | Recurrence |
| 010 | Excision | No-recurrence | None |

Notes

- **Patient ID:** Unique identifier for each patient.
- **Age:** Age of the patient at the time of diagnosis.
- **Gender:** Gender of the patient (F: Female, M: Male).
- **Tumor Location:** Specific location of the tumor (e.g., upper eyelid, lower eyelid).

- **Tumor Type:** Basic classification of the tumor (e.g., cyst, carcinoma, adenoma).
- **Nature:** Whether the tumor is benign or malignant.
- **Diagnosis:** Specific diagnosis of the tumor type based on histopathological examination.
- **Treatment Method:** Treatment methods used, including surgical excision, radiotherapy, or a combination.

- **Follow-up Results:** Outcome of the treatment during the follow-up period, including recurrence status.
- **Complications:** Any complications observed during or after treatment.



Figure 1:

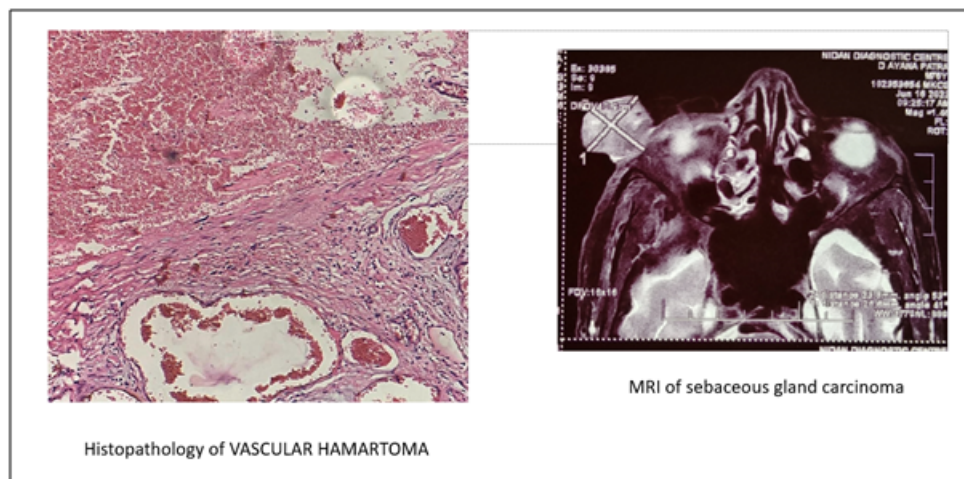


Figure 2:

Discussion

The results of this prospective observational study at MKCG Medical College underscore several important aspects of periocular tumors, offering insights into their clinical presentation, treatment strategies, and outcomes [9]. The diversity in tumor types, ranging from benign dermoid cysts to malignant basal cell carcinomas, reflects the complexity of periocular conditions and the necessity for precise diagnostic and therapeutic approaches [10]. One notable finding was the prevalence of benign tumors, particularly dermoid cysts, which were effectively managed with surgical excision. The success of excision in achieving tumor-free margins without significant complications highlights the efficacy of surgical intervention when appropriately applied. This aligns with current ophthalmological practices that prioritize tissue conservation to maintain both functional and aesthetic outcomes [11,12].

Conversely, the management of malignant tumors such as basal cell carcinoma and sebaceous gland carcinoma requires a combination of surgical excision and radiotherapy [13]. The inclusion of radiotherapy, particularly in cases where the risk of recurrence is higher, emphasizes the critical need for an aggressive treatment regimen for malignant lesions. The absence of recurrence in these cases during the follow-up period is a testament to the effectiveness of this dual approach [14,15]. The study also draws attention to the importance of patient follow-up and ongoing monitoring, especially in managing malignant periocular tumors where the risk of recurrence is a significant concern. The meticulous approach to follow-up in this study allowed for early identification and management of the single recurrence observed, underscoring the importance of continuous care in oncological management [16,17]. Furthermore, the study highlighted no significant complications across both benign and malignant cases, which is

significant in demonstrating that with careful surgical technique and adequate preoperative planning, periocular surgeries can be conducted with minimal risk. This is particularly important in a field where the cosmetic outcome is as significant as the oncologic control [18,19,20].

Conclusion

This study conducted at MKCG Medical College, Berhampur, provides valuable insights into the clinical profile, management strategies, and outcomes of periocular tumors, confirming the efficacy of tailored treatment approaches. The successful management of benign tumors predominantly through surgical excision and the effective combination of surgery and radiotherapy for malignant tumors highlights the importance of a nuanced therapeutic approach in ophthalmology. The absence of significant complications and low recurrence rates emphasize the potential for achieving excellent outcomes with meticulous surgical technique and comprehensive postoperative care. These results reinforce the need for ongoing advancements in diagnostic and treatment modalities, supporting the continuous improvement of patient care in the field of periocular tumor management. This study contributes to the broader understanding of periocular tumors, offering a benchmark for future research and clinical practices in similar tertiary care settings.

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