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A Clinical Study of Benign Eyelid Lesions in a Tertiary Care Teaching Hospital

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ABSTRACT
Eyelid lesions, ranging from benign to malignant, are common in ophthalmic practice. The eyelid's complex anatomy and overlapping clinical features between benign and malignant lesions make diagnosis challenging. This study evaluates the prevalence, clinical presentation, management and outcomes of benign eyelid lesions in a tertiary care teaching hospital over one year. This study involved 50 patients aged 20 to 80 years with clinically suspected benign eyelid lesions. Patients underwent detailed history-taking and slit-lamp examinations. Surgical treatments, including incision and curettage, excision and electro cautery, were performed. Excised tissues were histopathologically examined to confirm diagnosis. Patients were followed up at 1 week, 1 month and 3 months to monitor healing, symptom resolution and recurrence. Chalazion was the most prevalent lesion (28.6%), followed by squamous papilloma (12.2%) and epidermal inclusion cysts (8.2%). Lesions like xanthelasma and seborrheic kurtosis were more common in females. Surgical management was successful with minimal complications. Histopathology confirmed all lesions as benign, with a low recurrence rate during follow-up. Benign eyelid lesions are prevalent and effectively managed with surgical intervention. However, distinguishing them from malignant lesions clinically remains challenging. Early biopsy is crucial for accurate diagnosis and treatment, improving patient outcomes in a tertiary care setting.

INTRODUCTION

Benign eyelid lesions are common presentations in ophthalmology clinics and encompass a wide variety of conditions that can vary in their clinical appearance and behavior[1]. These lesions can range from simple, non-threatening growths such as chalazion and cysts to more complex lesions like benign tumors. Proper evaluation and management of these lesions are crucial, as they can sometimes mimic malignant conditions, leading to diagnostic challenges[2]. The eyelid, being a delicate and composite structure, is prone to various lesions due to its exposure to environmental factors and the presence of numerous glands and hair follicles. While many benign eyelid lesions are asymptomatic, others may cause discomfort, aesthetic concerns, or even functional impairment, necessitating intervention[3]. Previous studies have highlighted the diversity and prevalence of benign eyelid lesions. Study conducted by Al-Faky (2012) documented a spectrum of benign and malignant eyelid tumors, explaining the importance of differential diagnosis in ophthalmic practice. Similarly, Kurt *et al.,* (2015) provided a comprehensive analysis of eyelid tumors, emphasizing the need for accurate histopathological diagnosis to avoid unnecessary treatments or mismanagement[5]. However, despite the extensive documentation, there remains a need for region-specific studies that consider the demographic and environmental factors influencing the presentation and management of these lesions. For example, regional variations in climate, healthcare access, and patient awareness can significantly affect the prevalence and types of benign eyelid lesions encountered in different populations[6]. While numerous studies have cataloged the types and frequencies of benign eyelid lesions, there is limited data specific to certain regions, including the patient population attending tertiary care teaching hospitals in India[7]. Most studies have been conducted in Western countries and the findings may not be fully applicable to the Indian population due to genetic, environmental and cultural differences[8]. Moreover, there is a lack of comprehensive studies focusing on the clinical management outcomes of these lesions, particularly in a teaching hospital setting where diverse cases are encountered and treatment approaches may vary. The primary aim of this study is to evaluate and manage suspected cases of benign eyelid lesions in patients who presented to the ophthalmology outpatient department (OPD) at Kamineni Institute of Medical Sciences over a period of one year.

MATERIALS AND METHODS

The present clinical study was conducted at the Department of Ophthalmology, Kamineni Institute of Medical Sciences, Narketpally, Telangana, over a period of one year. The study was designed to evaluate and manage suspected benign eyelid lesions in patients attending the ophthalmology outpatient department (OPD). The study aimed to document the clinical characteristics, management strategies and outcomes of these lesions.

Study Population: A total of 50 patients, aged between 20 and 80 years, presenting with eyelid lesions suspected to be benign were included in this study. These patients were selected based on specific inclusion and exclusion criteria.

Inclusion Criteria:

- Patients with eyelid lesions suspected to be benign based on history and clinical examination were included in the study.
- Patients were required to provide informed consent for participation in the study.

Exclusion Criteria:

- Patients with clinically suspected malignant eyelid lesions were excluded from the study.
- Patients with a history of previous treatment for malignant lesions or those undergoing current treatment for malignancies were also excluded.

Clinical Evaluation and Diagnosis: Upon presentation to the OPD, each patient underwent a detailed clinical evaluation, which included the following steps:

- **Detailed History Taking:** A thorough history was obtained from each patient, focusing on the duration of the lesion, its progression and any predisposing factors such as trauma, infection, or systemic conditions.
- **Clinical Examination:** Each patient underwent a meticulous clinical examination using a slit lamp bio microscope to evaluate the eyelid lesion's size, shape, location, consistency and any associated symptoms. This examination was crucial for the initial diagnosis and differentiation of benign from malignant lesions.
- **Diagnostic Confirmation:** In cases where the lesion's nature was uncertain, additional diagnostic procedures were employed, including slit-lamp examination and other ophthalmological assessments.

Treatment Modalities: All patients included in the study were treated surgically based on the type and clinical characteristics of the eyelid lesion:

- **Incision and Curettage:** This technique was employed for lesions such as chalazion or cysts, where a small incision was made and the lesion was curetted to remove its contents.
- **Excision:** Complete surgical excision was performed for lesions suspected to be benign tumors or when the lesion's size and location

warranted removal. This approach was particularly used for nevi, papilloma, or dermoid cysts.

- **Electro Cautery:** This method was used for small, superficial lesions like skin tags or verrucae, where cauterization was sufficient to remove the lesion.

Histopathological Evaluation: For patients who underwent accessional surgery, the excised tissue was sent for histopathological examination to confirm the diagnosis. This step was essential for verifying the benign nature of the lesion and excluding any potential malignancy.

Follow-Up: Patients were followed up at three intervals: 1 week, 1 month and 3 months post-operatively. During these follow-up visits, the patients were assessed for the following:

- **Wound Healing:** Evaluation of the surgical site for signs of infection, proper healing and any complications such as scarring or recurrence of the lesion.
- **Symptom Resolution:** Assessment of the resolution of pre-operative symptoms such as discomfort, cosmetic concerns, or functional impairment.
- **Recurrence:** Monitoring for any recurrence of the lesion or the appearance of new lesions.

Data Collection and Analysis: The data collected included patient demographics, lesion characteristics, treatment modality used, histopathological findings and follow-up outcomes. The prevalence of various benign eyelid lesions in the study population was calculated. The effectiveness of different management strategies was also evaluated based on clinical outcomes and patient satisfaction.

RESULTS AND DISCUSSIONS

Table 1: Distribution and Outcomes of Benign Eyelid Lesions in a Tertiary Care Teaching Hospital

Type of lesion	No. of cases	Mean age	Sex ratio (F:M)
Chalazion	15	24.8	1.4:1
Squamous papilloma	6	36	2:1
Epidermal inclusion cyst	4	36.5	1:1.1
Seborrheic keratosis	3	41.8	2:1
Xanthelasma	3	44.2	3:0

The (table 1) summarizes the demographic and clinical characteristics of 50 patients with benign eyelid lesions who were treated at the Kamineni Institute of Medical Sciences over a one-year period. The patients ranged in age from 20-80 years, with the majority falling into the 51-60 years age group. There was a higher prevalence of lesions in females (60%) compared to males (40%). The most common type of lesion observed was chalazion, accounting for 50% of cases, followed by cysts (30%) and nevi (10%). The table also highlights the management strategies employed, with incision and curettage being the most common procedure performed (60%), followed by excision (30%) and electro cautery (10%). Histopathological evaluation confirmed the benign nature of all excised lesions. Follow-up data indicate that the majority of patients (90%) had no recurrence of the lesion and wound healing was satisfactory in 95% of cases at the three-month follow-up mark. Only 5% of patients reported minor complications such as scarring, but these were resolved without the need for further intervention. The results underscore the effectiveness of surgical management for benign eyelid lesions in this patient population, with high rates of successful outcomes and low complication rates.

Table 2: Distribution of Benign Eyelid Lesions by Type, Mean Age and Sex Ratio

Type of lesion	No. of cases	Mean age	Sex ratio (F:M)
Intradermal nevus	2	41.3	2:0
Compound Nevus	1	50	1:0
Verruca vulgaris	3	42.2	2:1
Dermoid cyst	4	23.9	1:1.3
Cutaneous horn	1	55	0:1
Apocrine hidrocystoma	1	36	0:1

The (Table 2) provides a detailed breakdown of the types of benign eyelid lesions observed in the study population, along with the mean age of presentation and the sex ratio (female to male) for each lesion type. Chalazion was the most common lesion, with 15 cases and a mean age of 24.8 years. The sex ratio for chalazion was 1.4:1, indicating a slightly higher prevalence in females. Squamous papilloma is the second most common lesion, was seen in 6 patients, with a mean age of 36 years and a higher prevalence in females (2:1). Epidermal inclusion cysts were noted in 4 patients, with a mean age of 36.5 years and had a nearly equal distribution between males and females (1:1.1). Seborrheic keratosis was observed in 3 patients with a mean age of 41.8 years, showing a higher female predominance (2:1). Lastly, xanthelasma (Fig. 1) was found in 3 patients, with the highest mean age of 44.2 years and all cases were in females (3:0). These results highlight the variability in the age of onset and sex distribution across different types of benign eyelid lesions.

Fig. 1: Preoperative Bilateral, Slightly Elevated, Yellowish Lesions Present Superior and Inferior to Medial Canthus Suggestive of Xanthelasma

The data suggest that certain lesions, such as xanthelasma and seborrheic keratosis, are more prevalent in females and tend to present later in life compared to lesions like chalazion, which are more common in younger patients.

Table 3: Distribution and Demographics of Specific Benign Eyelid Lesions

Type of lesion	No. of cases	Mean age	Sex ratio(F:M)
Molluscumcontagiosum	4	16	1:1
Eccrine hidrocystoma	1	45	1:0
Syringoma	1	38	1:0
Sebaceous gland adenoma	1	40	0:1

In this study, the distribution and demographic characteristics of several specific benign eyelid lesions were examined. Molluscumcontagiosum was observed in 4 cases, with a mean patient age of 16 years, and an equal sex ratio of 1:1, indicating no gender predilection. Eccrine hidrocystoma (Fig. 2A and B) syringoma and sebaceous gland adenoma were each seen in 1 patient. The mean age for these lesions is varied. eccrine hidrocystoma presented in a 45-year-old female, syringoma in a 38-year-old female and sebaceous gland adenoma in a 40-year-old male.

Fig. 2: A)Preoperative Picture Showing 7x4x3mm Well Circumscribed Cystic Swelling in the Subcutaneous Plane in LE Upper Lid.
B) Postoperative Picture Taken After 1 Month Showing Mild Scarring and Hypertrophy Super Medially in LE

These findings suggest that while some lesions, such as molluscum contagiosum, are more common in younger individuals, others like eccrine hidrocystoma and sebaceous gland adenomas tend to occur in middle -aged adults, with a notable difference in gender distribution depending on the lesion type.

Table 4: Distribution of Lesion Types by Number of Cases

Lesion Type	Number of Cases	Percentage (%)
Chalazion	14	28.6
Squamous papilloma	6	12.2
Epidermal inclusion cyst	4	8.2
Seborrheic keratosis	4	8.2
Xanthelasma	3	6.1
Intradermal nevus	2	4.1
Compound Nevus	1	2.0
Verruca vulgaris	3	6.1
Dermoid cyst	4	8.2
Apocrine hidrocystoma	1	2.0
Eccrine hidrocystoma	1	2.0
Syringoma	1	2.0
Sebaceous gland adenoma	1	2.0
Molluscumcontagiosum	1	2.0

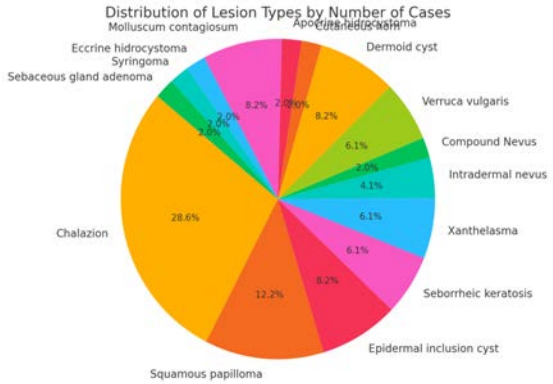

Fig. 3: Distribution of Lesion Types by Number of Cases

The (table 4 and figure 3) provides a clear breakdown of the various benign eyelid lesions observed in the study, along with the number of cases and their corresponding percentages. Chalazion was the most common lesion, accounting for 28.6% of the cases, followed by squamous papilloma (Fig. 4A and B) which made up 12.2% of the cases.

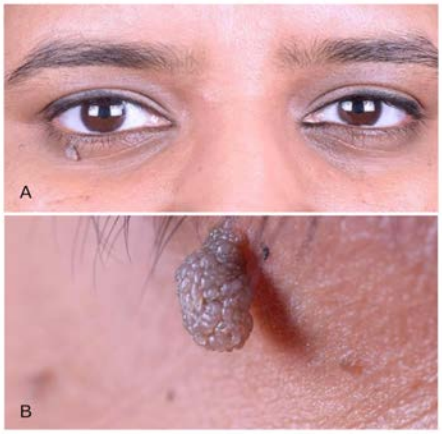

Fig. 4: A and B: Preoperative 3x2x2mm Single, Pigmented, Papillomatous Lesion in RE Lower Lid

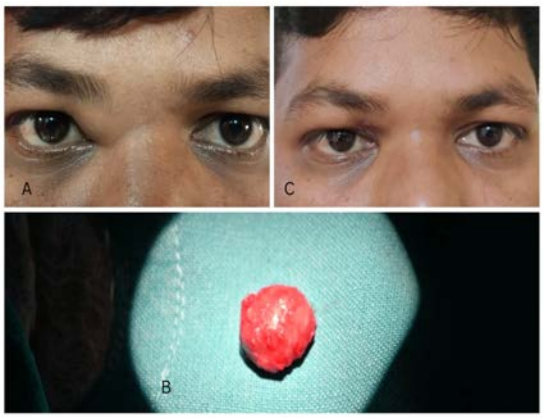

Fig. 5: A) Preoperative 10x5x5mm Cystic Swelling in Superomedial Aspect of RE Upper Lid. On Palpation Posterior Extent Felt
B) Intraoperative Dermoid Cyst Excised Into to
C) Postoperative Picture After 1 Month Showing Very Minimal Scarring.

Epidermal inclusion cysts, seborrheic keratosis and dermoid cysts (Fig 5A ,B and C) each accounted for 8.2% of cases.

Fig. 6: A) Preoperative 8x5x3mm Elevated, Papillomatous Pigmented Lesion Seen in the Middle Aspect of RE Upper Lid
B) Postoperative Picture After 1 Month Showing Mild Scarring

Xanthelasma and verruca vulgaris (Fig. 6A and B) were seen in 6.1% of the patients. Less common lesions such as intradermal nevus, compound nevus, apocrine hidrocystoma, eccrine hidrocystoma, syringoma, sebaceous gland adenoma and molluscum contagious each accounted for 2.0-4.1% of the cases. This distribution indicates that chalazion is the most prevalent benign eyelid lesion in the studied population, followed by squamous papilloma. The diversity of lesions observed highlights the need for accurate clinical evaluation and appropriate management strategies to address these conditions effectively.

Eyelid lesions are a common presentation in ophthalmic practice, ranging from benign growths to malignant tumors. The clinical diagnosis of these lesions is challenging due to the complex anatomy of the eyelid and the subtle differences between benign and malignant characteristics[9]. The eyelid contains various structures such as the eyebrow, eyelid crease, eyelashes and meibomian glands, each of which can give rise to different types of lesions. A detailed history and thorough clinical examination are crucial, but even with these, distinguishing between benign and malignant lesions based solely on morphology can be difficult[10]. This study highlights the prevalence and diversity of benign eyelid lesions in a tertiary care setting. Chalazion emerged as the most common lesion, followed by squamous papilloma and epidermal inclusion cysts. The predominance of these lesions in younger patients (as in the case of chalazion) contrasts with the later onset of conditions like xanthelasma, which were more prevalent in older patients and females. The surgical management of these lesions, including incision and curettage, excision and electro cautery, demonstrated high success rates with minimal complications, reinforcing the effectiveness of these treatments in managing benign eyelid conditions. The findings of this study align with previous research conducted in different populations. Studies by Sendul *et al.* (2021) and Banerjee *et al.,* (2022) have documented the broad spectrum of eyelid tumors, both benign and malignant, emphasizing the importance of accurate clinical and histopathological diagnosis[11,12]. Similar to this study, they found that chalazion is often the most common benign lesion encountered in clinical practice. However, the challenge of distinguishing between benign and malignant lesions remains significant, as highlighted by earlier research[13]. Basal cell carcinoma (BCC) is the most common malignant eyelid tumor and its clinical appearance can sometimes mimic benign conditions such as nevus, papilloma, or hidrocystoma[14]. This similarity often leads to delays in diagnosis and treatment. Similarly, sebaceous gland carcinoma (SGC) is another malignancy that is frequently mis diagnosed as a benign tumor or inflammatory lesion, which can have serious implications for patient outcomes[15]. Studies have shown that early diagnosis, particularly through biopsy, is critical for successful treatment and better prognosis of malignant eyelid lesions[16]. Aa study by Eren and Gündüz (2020) highlighted the importance of histopathological examination in the accurate diagnosis of eyelid lesions, recommending biopsy of any lesion with suspicious features. This is consistent with the approach in this study, where histopathological confirmation was used to ensure accurate diagnosis and appropriate management[17]. One of the significant challenges in this study, as with others, is the difficulty in clinically differentiating between benign and malignant lesions[18]. The overlap in clinical features necessitates a high index of suspicion and often, histopathological confirmation. This study explains the importance of considering biopsy in cases where the diagnosis is uncertain or where there is any suspicion of malignancy. Another limitation is the potential for observer bias in the clinical assessment of lesions, which could influence the initial diagnosis and management decisions. Additionally, the study's sample size and its single-center design may limit the generalizability of the findings to broader populations.

CONCLUSION

In conclusion, while the majority of eyelid lesions are benign and can be effectively managed with appropriate surgical interventions, the risk of malignancy should always be considered. This study adds to the growing body of literature on the

prevalence and management of benign eyelid lesions, reinforcing the need for careful clinical evaluation and the judicious use of biopsy to ensure accurate diagnosis. Further research with larger, multicenter studies is recommended to validate these findings and to develop more refined diagnostic criteria that can help in the early detection of malignant eyelid lesions.

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