

Demography and clinical features of chalazion Among patients in a Zonal Military Hospital at Jabalpur Madhya Pradesh, India

Gireesh Mishra¹, Aparna Kekan^{2*}

¹Associate Professor, Department of Ophthalmology, Military Hospital, Jabalpur, Madhya Pradesh, India

²Associate Professor, Department of Ophthalmology, Parul Institute of Medical Sciences and Research, Parul University, Vadodara, Gujarat, India

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Abstract

Introduction: A chalazion is a small, usually painless, lump or swelling that appears on the upper or lower eyelid. A blocked meibomian or oil gland may be due to the by Staphylococcus sp infection causes this condition and disappear without treatment or require different treatment approach. **Objective:** In the present study we have investigated the demography of the chalazion in Madhya Pradesh state and correlated that with climatic conditions. **Methods:** This study is cross-sectional prospective clinical study wherein patient with eye complications were observed for chalazion conditions. Over the period of 4 years (July 2011 to June 2015) number of chalazion cases were identified and their month-wise distribution was plotted and its correlation with climatic conditions was investigated. **Results:** Total 44350 patients visited for their eye-related complication in the hospital during this 4-year period and 704 were noticed to have chalazia with prevalence rate of 1.63% (Range 2.20 to 1.35). Maximum 36% patients were in the age range of 21-30 years. Maximum number of chalazion cases were reported in the months of August (114), July (92) and September (77), respectively, while lower rate is found in November (19), and March and April (38 each). In these patients we have used conservative therapy, incision and curettage or triamcinolone injection given via intra-lesion route for the management of chalazia. **Conclusion:** Only a miniscule percentage of patients seeking eye care in India are affected by chalazion. It is slightly more common during climate with more humidity. Conservative management is the preferred modality by maintaining hygiene of eyelid on daily basis.

Key words: clinical, cases.

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Introduction

In routine ophthalmic practice wide variety of lesions affecting the eye lid are usually seen. A chalazion, a small, usually painless, lump or swelling that appears on the eyelid is common of the lesion encountered by ophthalmologist. A blocked meibomian or oil gland causes this on the upper or lower eyelid. It is the most common inflammatory lesion of the eyelid, and is a granulomatous reaction caused by the retention of the secretion from the Meibomian glands.[1]

While small chalazia are asymptomatic or may rarely cause local infections like conjunctivitis or cellulitis [2], the large chalazia may occasionally obstruct the pupil and cause visual loss.[3]It is commonly caused by Staphylococcus sp and may be treated with medical therapy. However, if medical therapy fails, surgical process is suggested. [4-6]

Although it is common in eye care services, there are no studies on the distribution of chalazion in the general population.

A limited literature is available on the demographic characteristics, clinical features, and correlation with climatic conditions. In the present study we planned and conducted to analyse the epidemiology, clinical features a of chalazion.

Materials and Methods

Study design

This is a cross-sectional hospital-based observational study. Patients newly diagnosed with chalazion presenting between July 2011 and June 2015 to our Military Hospital, Jabalapur, Madhya Pradesh, India were included. A standard consent form was taken from the patient, parents, or guardians at the time of registration. None of the identifiable parameters of the patient were used for analysis of the data. The study adhered to the Declaration of Helsinki and was approved by the Institutional Ethics Committee. Each patient underwent a comprehensive ophthalmic examination, and the clinical data was recorded.

Results

Year-wise record of chalazion case

In our hospital, we have reported total 8898 eye-related cases and found 196 were chalazion (2.20%) in year 2011-12. In year 2012-13, 9787 people reported eye related complication and 158 were chalazion (1.61%). In year 2013-14, 12697 eye cases were reported and 172 were chalazion (1.35%). Similarly, in 2014-15, total 12968 people reported eye related complication and 178 were chalazion (1.37%). Data is presented in fig 1.

*Correspondence

Dr. Aparna Kekan

Associate Professor, Department of Ophthalmology,
Parul Institute of Medical Sciences and research,
Parul University, Vadodara, Gujarat, India.

E-mail: aparna.kekan@yahoo.com

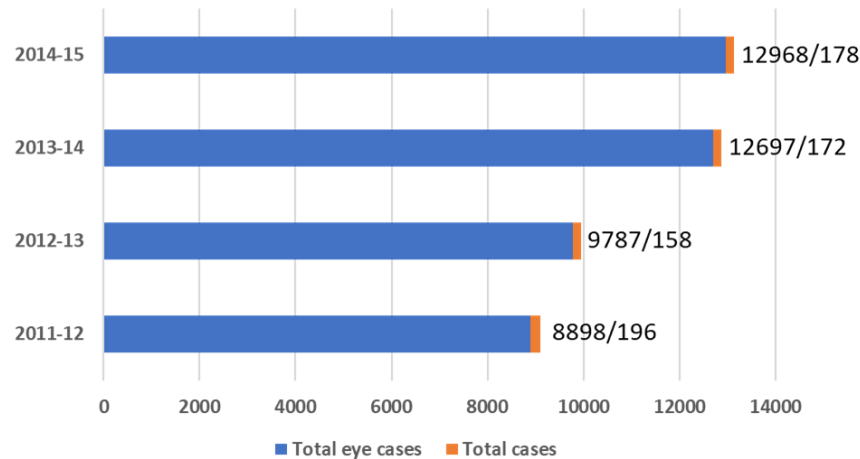


Fig 1: Cases of eye related complications observed and number of chalazion cases among them on year-wise basis for 4 years

Age-wise distribution of chalazion case

We further distributed the pattern of chalazion cases observed based on the age of patients (Fig 2). Maximum 36 percent chalazion cases were in age 21-30 years, followed by 11-20 years (25%) and 16% in

the age group of 31-40 years. Low percentage of chalazion cases were observed in 0-10 years (10%), 41-50 years (6%), 51-60 years (4%) and more than 60 years old patients showed 3% prevalence.

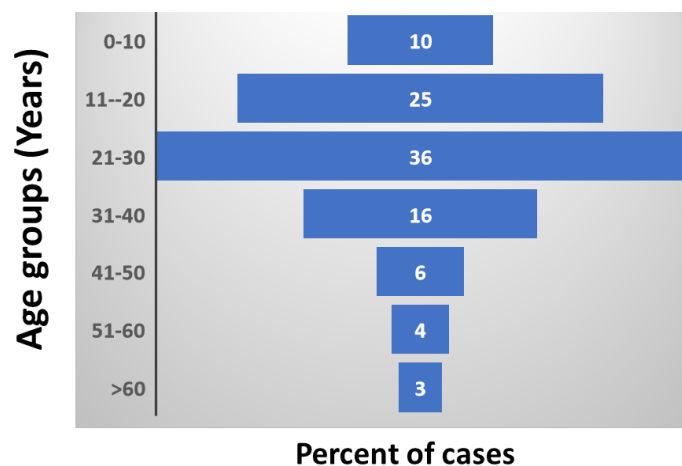


Fig 2: Represents the percent of chalazion patients in different age groups

Correlation of occurrence of Chalazion with climatic conditions

For four years we have distributed the patients based on month of reporting of the cases. Table 1 showed that maximum number of chalazion cases were reported in the months of August (114), July (92) and September (77), respectively. Lowest number of cases were reported in the months of November (19), and March and April (38 each). We have investigated on the correlation of occurrence of chalazion cases to that of the climatic condition. We have recorded

the maximum and minimum temperature and % humidity of each month for four years and calculated the percentage of patients identified for the chalazion condition (Table 2). Maximum percentage of chalazion cases were noticed in the month of August (16%) and September (10.8%) and in the same months' humidity was also highest in the year which is 84% and 77%, respectively. However, clear correlation of the temperature and low humidity with the occurrence of chalazion cases was not found.

Table 1: Month-wise record of chalazion patients for 4-years

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2011-12	24	19	11	12	14	13	22	31	21	13	5	12	197
2012-13	22	15	8	7	9	11	18	27	18	10	4	9	158
2013-14	21	17	9	10	11	12	22	28	19	10	4	9	172
2014-15	12	19	10	9	10	12	30	28	19	11	6	12	178
Total	79	70	38	38	44	48	92	114	77	44	19	42	705
%	11.21	9.93	5.39	5.39	6.24	6.81	13.05	16.17	10.92	6.24	2.70	5.96	

Table 2: Correlation of temperature and humidity with chalazion cases

Month	Max Temp (°C)	Min Temp (°C)	Humidity (%)	No. of Cases (%)
Jan	25	10	47	11.21
Feb	28	13	37	9.93
Mar	34	18	26	5.39
Apr	39	23	18	5.39
May	41	27	18	6.24
Jun	37	26	43	6.81
Jul	31	24	78	13.05
Aug	30	24	84	16.17
Sep	31	23	77	10.92
Oct	32	20	58	6.24
Nov	29	14	48	2.70
Dec	26	11	45	5.96

Different approach of management of chalazion: We have managed chalazion cases with three different approaches i.e. incision

and curettage, Triamcinolone injection given via intra-lesion route and conservative management (Fig 3).

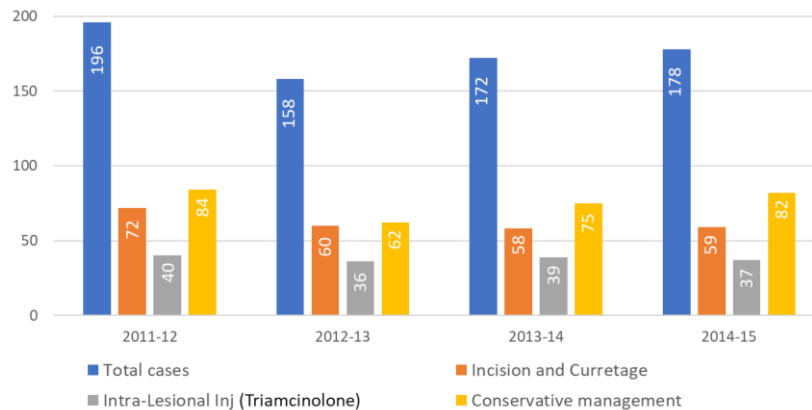


Fig 3: Represents number of cases undergone different treatment approach for the management of chalazion

Discussion

The current paper describes the demography and clinical features of patients with a clinical diagnosis of chalazion at Military Hospital, Jabalapur at Central India over a 4-year time. We have examined 44,350 cases of eye complications visited to our clinic during the 4-year period and found 704 patients with chalazion cases. Among the overall patient population, the study reports a chalazion prevalence rate of 1.63% (Range 2.20 to 1.35) among all the clinical complication reported during this period. Similar prevalence was reported previously in many studies in focused on Indian population as well as conducted outside of India. [7,8]

First, we investigated if the age affects the occurrence of chalazion. We have noticed, maximum 36% patients were from the age group of 21-30 years, followed by 25% patients in 11-20 and 16% in 31-40 years group. Like our observation, previous study by Dave and Dave, 2020, reported that age group of 21-30 reported maximum rate of chalazion. This suggest that adolescents and young adults are more prone to develop chalazion than children (1-10 years) and adults (40 years) where prevalence of chalazion cases is observed less than 10% individually.

Secondly, we have investigated the month-wise distribution of chalazion patients over the period of 4 years. We have noticed that maximum number of chalazion cases were reported in the months of August (114), July (92) and September (77), respectively. Lowest number of cases were reported in the months of November (19), and March and April (38 each). The correlation of occurrence of chalazion cases to that of the climatic condition indicated that occurrence of chalazion cases is depend on the humidity. The maximum humidity leads to more chalazion cases, and in contrast lower humidity is associated with low cases of chalazion. However,

clear correlation of the temperature with the occurrence of chalazion cases was not found. Since, inflammation or viruses affects the meibomian glands and are the underlying causes of chalazia, high humidity may lead to this viral infection. However, we did not find any study which have reported the direct correlation of humidity with the development of chalazion. To further strengthen the correlation, we suggest conducting the study at different centers where climatic conditions are varying across the year.

In our clinic, we have managed chalazion with different approaches. These includes, incision and curettage, Triamcinolone injection given via intra-lesion route and conservative management. Initial therapy for chalazia is mostly a conservative therapy which consists of various combinations of hot compresses, saltwater soaks and eyelid hygiene and massage. It is the least invasive and at the same time is time consuming which require efforts from patient for treatment up to 4 times a day for a few weeks. The success rate of conservative therapy ranges widely from 25% to 87% and is greatly dependent on patient education by the physician and patient compliance with the treatment regimen. [9-11]

Currently the most used treatment of chalazia is incision and curettage after conservative therapy. This management includes topical and infiltrated anesthetic, eversion of the eyelid with a clamp, vertical incision, removal of the capsule and its contents by curettage, and patching the eye from 2 to 24 hours. Topical or systemic antibiotics may be required after the procedure. [12]

Intralesional steroid injection have been used in the treatment of chalazia since 1964. The typical corticosteroid utilized in intralesional injections is triamcinolone acetonide (TA), in volumes of 0.02 to 1.0ml, with concentrations varying from 5 to 40mg/ml.

[13] In the present study we also employed same steroid for the management of chalazia.

Conclusion

We have concluded that awareness about eyelid hygiene is essential to prevent such infectious disease. Hygienic measure may include washing hands and faces for 2-3 time daily with soft and mild soap, cleaning eyelid with cotton bud and soft cloth and regular bathing and cleaning eyelid with curved index finger making upside down strokes gently with flowing water through hood and down to up for lower lids. Avoiding unnecessary touch to eyelid is equally important.

References

1. Onesti MG, Troccola A, Maruccia M, Conversi A, Scuderi G. Suspected spinocellular carcinoma of the inferior eyelid resulted multiple chalazion. *Ann Ital Chir.* 2013;23:84.
2. Rumelt S, Rubin PA. Potential sources for orbital cellulitis. *Int Ophthalmol Clin.* 1996;36(3):207–222.
3. Donaldson MJ, Gole GA. Amblyopia due to inflamed chalazion in a 13-month old infant. *Clin Exp Ophthalmol.* 2005;33:332–333.
4. Arbabi EM, Kelly RJ, Carrim ZI. Chalazion. *BMJ.* 2010;341:c4044.
5. Gilchrist H, Lee G. Management of chalazia in general practice. *Aust Fam Physician.* 2009;38(5):311-4.
6. Duarte AF, Moreira E, Nogueira A, Santos P, Azevedo F. Chalazion surgery: advantages of a subconjunctival approach. *J Cosmet Laser Ther.* 2009;11(3):154-6.
7. Cottrell DG, Bosanquet RC, Fawcett IM. Chalazions: the frequency of spontaneous resolution. *Br Med J (Clin Res Ed)* 1983;287:1595.
8. Bohigian GM. Chalazion: a clinical evaluation. *Ann Ophthalmol* 1979;11:1397–8.
9. Garrett GW, Gillespie ME, Mannix BC. Adrenocorticosteroid injection vs. conservative therapy in the treatment of chalazia. *Ann Ophthalmol* 1988;20:196–8.
10. Ahmad S, Baig MA, Khan MA, et al. Intralesional corticosteroid injection vs surgical treatment of chalazia in pigmented patients. *J Coll Physicians Surg Pak* 2006;16:42–4.
11. Goawalla A, Lee V. A prospective randomized treatment study comparing three treatment options for chalazia: triamcinolone acetonide injections, incision and curettage and treatment with hot compresses. *Clin Experiment Ophthalmol* 2007;35:706–12.
12. Das AV, Dave TV. Demography and Clinical Features of Chalazion Among Patients Seen at a Multi-Tier Eye Care Network in India: An Electronic Medical Records Driven Big Data Analysis Report. *Clin Ophthalmol.* 2020; 14: 2163–2168.
13. Al-Faky YH. Epidemiology of benign eyelid lesions in patients presenting to a teaching hospital. *Saudi J Ophthalmol.* 2012; 26:211–216.

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