

## Study of Incidence And Risk Factors of Chalazion in Bundelkhand Region

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**Abstract:** This study was conducted to evaluate the incidence and risk factors of chalazion in bundelkhand region. This is retrospective study done from SEPTEMBER 2014 to DECEMBER 2016. 30,720 patients visited our opd in this duration out of which 75 pts were diagnosed as chalazion and included in the study. The overall incidence of chalazion is found to be 0.24% among the patients visiting eye opd MLB Medical College Jhansi. Out of 75 pts 24(32%) were male and 51(68%) were female. Among 24 males 16(66%) were 30 yrs or less of age and 8(34%) were more than 30 yrs of age. Among 51 females 40(78%) were 30 yrs or less of age and 11(21%) were more than 30 yrs of age. Out of 24 male 18(75%) had chalazion in upper eye lid and 6(25%) had in lower eye lid. Out of 51 females 41(80%) had chalazion in upper eye lid and 10(20%) had in lower eye lid. So incidence of chalazion seen more in upper eye lid (i.e. 77.5%). Poor lid hygiene, chronic blepharitis, rosacea, seborrheic dermatitis, high blood lipid concentration and eyelid trauma were found to be significant risk factors. The maximum incidence was seen in females (68%). As with age maximum incidence was found in age equal to or less than 30 years. Involvement of upper lid is found more than lower lid. Poor lid hygiene is found most common risk factor for development of chalazion.

**Keywords:** eyelid, chalazion, poor lid hygiene, chronic blepharitis.

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### I. Introduction

A chalazion (meibomian cyst) is a sterile chronic granulomatous inflammatory lesion (lipogranuloma) of meibomian gland or some times zeis gland caused by retained sebaceous secretions<sup>[1]</sup>. Meibomian glands in the eyelid produce an oil which helps keep the eye moist. If the gland becomes blocked, the oil builds up into a cyst which looks like a small lump in the eyelid. The lump can become irritated and red and, occasionally, infected<sup>[2]</sup>. Causes may include- poor lid hygiene, seborrheic dermatitis, rosacea, chronic blepharitis, high lipid blood concentration, tuberculosis<sup>[3]</sup>, viral infection, carcinoma, stress, trachoma, eyelid trauma, eyelid surgery. Generally gradually enlarging painless rounded nodule is chief complaint of the pts.

The management of hordeolum is similar to that for posterior blepharitis: topical antibiotics or the combination of an antibiotic/steroid and oral doxycycline/tetracycline. The puncturing and drainage of an acute hordeolum is often quick and successful. Over time, the acute inflammatory phase resolves and often transitions to a chalazion. Essentially, the management of chalazion has not changed during the past 2 decades. If the lump becomes large enough to interfere with the patient's vision or if it becomes cosmetically unacceptable, the options for treatment are either an intralesional steroid injection or an incision and curettage. The former can be successful but often requires repetition. Surgery can cause localized scarring and bruising, and the removal of the nodule may be incomplete<sup>[4]</sup>. In general, lesions requiring more than two injections should be surgically removed and monitored for squamous cell carcinoma. The seminal study on the subject indicated that more than 80% of patients experienced a resolution of the chalazion within 2.5 weeks and that more than 50% of those individuals responded to a single injection<sup>[5]</sup>. Complications of intralesional steroid injections include elevated IOP, localized depigmentation of the skin, and fat necrosis. Recently, botulinum A toxin has been suggested as a treatment for recurrent chalazion, but more work in this area is indicated<sup>[6]</sup>.

### II. Material And Method

This retrospective cohort study was conducted in M.L.B. Medical College Hospital in the department of Ophthalmology from SEPTEMBER 2014 to DECEMBER 2016. In this duration 30,720 pts visited our opd out of which 75 pts were diagnosed as chalazion and included in the study. Out of 75 pts 24 were male and 51 were female. Among 24 males 16 were 30 yrs or less of age and 8 were more than 30 yrs of age. Among 51 females 40 were 30 yrs or less of age and 11 were more than 30 yrs of age. In this study, we examined the cases of chalazion to find out independent risk factors associated with the development of chalazion and incidence of chalazion among the general population.

### III. Statistical Analysis

Data were analyzed by the Statistical Package for the Social Sciences (SPSS for windows, version 16.0). Descriptive statistics included the mean and standard deviation for numerical variables, and the percentage of different categories for categorical variables. The incidence rate of chalazion was described in simple proportion. Group comparisons were done by the chi-square ( $\chi^2$ ) test. A logistic regression model was performed and the adjusted OR (95% CI) was obtained for the risk factors which had been shown to be significant in the univariate analysis. A probability (P) of less than 0.05 was considered significant.

### IV. Results

From sept 2014 to dec 2016, 30,720 pts visited our opd out of which 75(0.24%) cases were diagnosed as chalazion(table 3). Out of 75 pts 24(32%) were male and 51(68%) were female. Among 24 males 16(66%) were 30 yrs or less of age and 8(34%) were more than 30 yrs of age. Among 51 females 40(78%) were 30 yrs or less of age and 11(21%) were more than 30 yrs of age. Out of 24 male 18(75%) had chalazion in upper lid and 6(25%) had in lower lid. Out of 51 females 41(80%) had chalazion in upper lid and 10(20%) had in lower lid. So incidence of chalazion seen more in upper eye lid(i.e. 77.5%).(table 2) Poor lid hygiene, chronic blepharitis, rosacea, seborrheic dermatitis, high blood lipid concentration and eyelid trauma were found to be significant risk factors. While stress, trachoma, tuberculosis, viral infections and immunodeficiency were found nonsignificant risk factors.(table 2)

### V. Discussion

**Incidence-** The incidence of chalazion is 0.24% among general population who visited to our opd however no any other study has given the incidence of chalazion in India. The incidence were found higher in females (68%) as compared to males (32%). Maximum incidence was seen in pts less than 30 year or equal to 30 year of age (72%) because of higher level of androgenic hormones which increases sebum viscosity<sup>[7]</sup>. Hormonal influence on sebaceous secretion and viscosity can be explained by clustering during puberty and pregnancy. Maximum incidence was seen in upper lid (77.50%) because the number of meibomian glands are higher in upper lid<sup>[8]</sup>

#### Risk Factors-

**Poor Lid Hygiene-** In our study poor lid hygiene is found to be a significant risk factor on the basis of history from pts. This is also supported by the fact that incidence of chalazion is more in adult females as they use kajal and some other cosmetics frequently on eyelids. Poor lid hygiene also causes blepharitis which is also one of the cause of chalazion<sup>[9,10]</sup>.

**Chronic Blepharitis-** Blepharitis found as one of the common cause of chalazion in our study. Once blepharitis reaches an advanced stage, the patient's risk of developing hordeolum and chalazion increases. Some of the most common causes of or contributors to blepharitis and the sequelae of hordeolum and chalazion include acne rosacea, hyperimmunoglobulin E (Job's syndrome), poor ocular hygiene, and generalized seborrheic disease<sup>[9,10]</sup>.

**Rosacea-** Rosacea is a chronic inflammatory facial skin disease characterised by flushing episodes, erythema, papules, pustules and telangiectasia. Phymatous changes mostly of the nose, the rhinophyma, as well as inflammation of the eye and the eyelid can also be manifestations of the disease<sup>[11,12]</sup>.

**High Blood Lipid Concentration-** high serum lipid concentration leads to hypersecretion of meibum. Meibum also get concentrated which leads to blockage of ducts of meibomian glands and meibomian gland dysfunction occurred<sup>[8]</sup>. It may also leads to blepharitis which is also a risk factor for chalazion. Ocular rosacea is most likely to be of inflammatory nature, but the exact aetiology remains unclear. Blepharitis, conjunctivitis, hordeola/chalazia, tear film insufficiency and foreign body sensation have been described as frequent ophthalmic symptoms, while sight-threatening corneal involvement may occur in rare cases<sup>[11,12]</sup>

**Seborrheic Dermatitis-** Seborrheic dermatitis is a chronic inflammatory disease that mainly affects seborrheic areas of skin. An inflammatory response to the yeast *Pityrosporum ovale* has been thought to be important in the etiology of the condition. Not very rare, especially in children, there is a seborrheic blepharitis, often misdiagnosed. It leads to seborrheic blepharitis<sup>[13]</sup>.

**Eyelid Trauma-** Usual mechanism of trauma to eye and lid is blunt injury. Trauma disrupts the structure of eye lids. If the supportive tarsal plate is traumatised the anatomy and physiology of meibomian glands also get altered and chalazion may occur<sup>[14,15,16]</sup>.

**Some other risk factors-** stress, trachoma, tuberculosis, viral infections and immunodeficiency were found nonsignificant risk factors in our study so it disagree with the study of LITOFF D, BALIN MW 1992<sup>[2]</sup>, BERMAN JD 1997<sup>[17]</sup>.

6. TABLES

**Table 1: Distribution Of Gender**

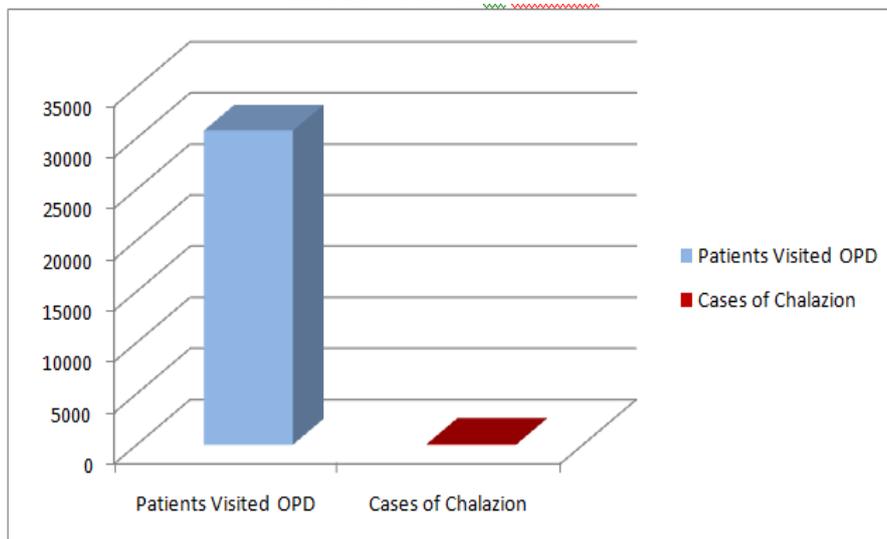
Gender	Upper eye Lid	lower eye Lid	Total
Male	18	06	24
Female	41	10	51

**Table 2: Association Of risk Factors with Gender**

Risk Factors	Male(Yes)	(No)	Female(Yes)	(No)	p-value
Poor lid hygiene	06	18	26	25	0.03
Chronic blepharitis,	16	08	20	31	0.03
Rosacea,	11	13	36	15	0.04
Seborrhic dermatitis,	04	20	35	16	0.00
High blood lipid concentration	09	20	30	21	0.02
Eyelid trauma	18	06	15	36	0.00
Stress	12	12	20	31	0.37
Trachoma,	15	09	24	27	0.21
Tuberculosis,	14	10	25	26	0.45
Viral infections	09	15	21	30	0.76
Immunodeficiency	08	16	22	29	0.42

# one patient exposed to more than one risk factors.

**Table 3: Incidence Of Chalazion**



**VI. Conclusion**

So in our study the overall incidence of chalazion is found to be 0.24% among the general population. The maximum incidence was seen in females(68%). As with age maximum incidence was found in age equal to or less than 30 years. Involvement of upper lid is found more than lower lid. Poor lid hygiene, chronic blepharitis, rosacea, seborrhic dermatitis, high blood lipid concentration and eyelid trauma were found to be significant risk factors. So with the proper lid hygiene and proper knowledge about risk factors one can save him/her from chalazion.

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