

Chalazion and demographic characteristics of patients in a population sample

Calázio e características demográficas dos portadores em uma amostra populacional

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ABSTRACT

Purpose: To show the frequency of occurrence of chalazion in a population sample, as well as the characteristics of patients. **Methods:** A cross-sectional study using randomized population sample was carried out during 2004/2005, in the Midwest region of the state of São Paulo. Participants were evaluated according to demographic variables and ocular examination. **Results:** The frequency of occurrence of chalazion was 1.56%, more common in women, people with astigmatism or low hyperopia, with wide variation in age of onset. It was necessary to prescribe optical correction and surgery in a significant number of cases. **Conclusion:** The chalazion has low frequency of occurrence in the general population. It occurs predominantly in women and there is a significant association with refractive error.

Keywords: Chalazion/epidemiology; Hordeolum; Eyelid/injuries; Refractive errors

RESUMO

Objetivo: Apresentar a frequência de ocorrência do calázio em uma amostra populacional, assim como as características de seus portadores. **Métodos:** Estudo transversal utilizando amostra populacional aleatorizada, realizado nos anos 2004/2005, na região centro-oeste do estado de São Paulo. Os participantes foram avaliados segundo variáveis demográficas e exame oftalmológico. **Resultados:** A frequência de ocorrência do calázio foi de 1,56%, sendo mais frequente em mulheres, portadores de astigmatismo ou hipermetropia de pequenos graus, com grande variação de idade de acometimento. Foi necessária prescrição de correção óptica e cirurgia em número expressivo de casos. **Conclusão:** O calázio tem baixa frequência de ocorrência na população geral. Ocorre predominantemente em mulheres e há associação importante com ametropia.

Descritores: Calázio/epidemiologia; Terçol; Pálpebra/lesões; Erros de refração

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INTRODUCTION

The chalazion 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 due to chronic inflammation resulting from an internal hordeolum or meibomitis.¹

It is commonly caused by *Staphylococcus sp* and may be treated with medical therapy; but when there is no resolution and there chronicity of the process, it may require surgery.²⁻⁵

After the removal, a histological examination is needed, particularly in the case of recurrent injuries due to the possibility of a malignant tumor, such as sebaceous cell carcinoma.⁶⁻⁸

Although it is common in eye care services, there are no studies on the distribution of chalazion in the general population, which motivated this study aimed at observing the frequency of occurrence of chalazion in a given population and describing the demographic profile of carriers.

METHODS

The analysis of patients with chalazion was based on data from a cross-section, observational study made with a randomized population sample conducted between March 2004 and June 2005. The study was conducted in nine cities of the Midwest region in the state of São Paulo, for which the reference center is the city of Botucatu. The research protocol was reviewed and approved by the Research Ethics Committee of the Medicine College of Botucatu - UNESP.

Participants were sorted taking into account the place of residence according to the IBGE census tract (Census, 2000). The sample size of 8,010 individuals was established, of which 7,654 people were examined. The sample size was based on the total number of inhabitants of the study area and on the prevalence of blindness and low vision in the population studied. The subjects were invited to participate and an appointment was scheduled.

The study population was approached by a Mobile Ophthalmic Unit, registering the identification data, clinical history, and ocular and systemic background of the participants. Then an eye examination was performed with the assessment of visual acuity (VA) by means of the Snellen chart for the illiterate placed 5 meters away and with good lighting conditions, with and without optical correction. The external ocular exam was performed with a hand-held flashlight. The static and dynamic refractometry values were recorded using an auto-refractor (Topcon KR-7000, Japan) and a phoropter (Topcon VT10, Japan). The biomicroscopy assessment was performed using a slit lamp (Shin-Nippon, Japan), and the indirect funduscopy was performed using 90D Volk lens (Mentor, USA).

In individuals aged below 40 years, cycloplegia was obtained by instilling a droplet of cyclopentolate eyedrops (Ciclopégico, Allergan, São Paulo-Brazil), with examination after 30 minutes.

Individuals with a spherical component between -0.50 and +0.50 were considered emmetropic, hyperopic with a degree greater than +0.50, and astigmatic with a degree lower than -0.50.

All data obtained was categorized and transferred to an Excel table, being statistically treated for the frequency analysis

of occurrence of the phenomena observed.

RESULTS

Twelve cases of chalazion were found in the general population in the Midwest of São Paulo, resulting in 1.56‰ of frequency of occurrence of the disease.

Analyzing the characteristics of the patients, 11 (91.7%) were female, with a wide range of age of occurrence, which was between 31 and 77 years.

Nine (75%) cases were observed on the right side.

The main complaint was a foreign body sensation, reported by 33%.

There was no link between chalazion and systemic or local diseases.

The visual acuity (VA) presented (uncorrected) was > 0.7 in 25%, from 0.3 to 0.7 in 66.7% and < 0.05 in 8.3% of cases. When the corrected VA was assessed, 91.7% showed AV > 0.7 and 8.3% from 0.3 to 0.05 (Fig. 1).

The refraction test showed that 58.3% of patients with chalazion were emmetropic, 33% were hyperopic (ranging from +1 to +3.75), and 41.7% were astigmatic (ranging from -0.50 to -2.00). The treatment was the prescription of optical correction to 41.7% of patients, and 75% were referred for surgical treatment (Fig. 2).

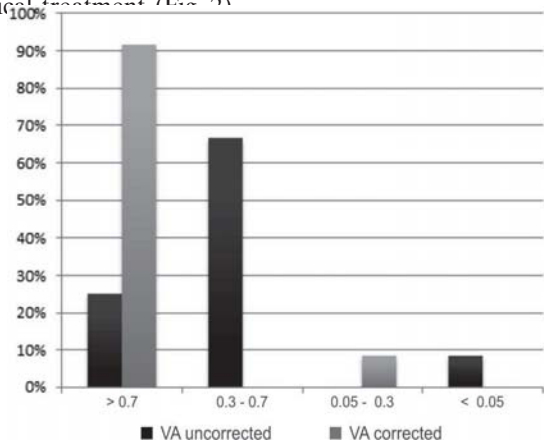


Figure 1: Distribution of visual acuity (VA) uncorrected and with the best optical correction in patients with chalazion.

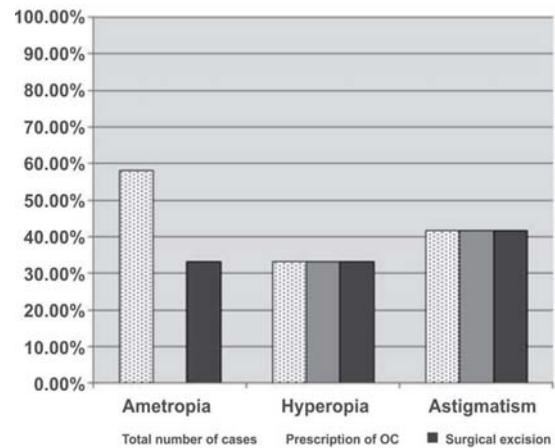


Figure 2: Distribution of patients with chalazion regarding the refractive error and the treatment adopted.

DISCUSSION

The main value of the present study was to randomly assess participants, which helped identify the frequency of occurrence of chalazion in the general population. This injury is very common in optometrists' offices, and when it is searched in a sample that is not the convenient one, it shows a low prevalence.

The lesion was predominant in females, as described by others.^{9,10}

There was a wide variation in the age of the carrier, predominantly in the elderly, which was surprising, since the chalazion is an infection that occurs more frequently in youngsters.^{9,10}

There was no relation between the presence of chalazion and ocular or systemic background, although the association with conditions such as blepharitis, acne rosacea and seborrheic keratosis is known.^{3,9,11}

The uncorrected visual acuity was greater than 0.3 for 91.7% of patients with chalazion. With the best optical correction, there was an improvement of the VA, which was above 0.7 in 91.7% of individuals.

The association between chalazion and refractive errors of low degree is classic. When it comes to recurrent lesions, ametropia is often associated. The present study confirms this association, with astigmatism and hyperopia being often observed in association with the presence of chalazion, including requiring optical correction. In addition, astigmatism can be induced chalazion, particularly when located on the upper eyelid, due to causing corneal flattening and deformity.^{12,13}

Although some cases had shown improvement with conservative measures as warm and moist compresses^{3,4,5,14}, the clinical treatment is only effective in the acute inflammatory phase, i.e., in the styes. In the chronic phase, when the granulomatous process is already installed, only small chalazions may cure spontaneously. In our sample, there was indication for surgical excision for most of the cases, and no indication of removal for small lesions carriers.

CONCLUSION

The chalazion occurred in 1.56‰ of the inhabitants in the area studied, predominantly in women, with a wide range of age of occurrence. There was a significant association with low ametropias, requiring the prescription of optical correction and surgery in a significant number of cases.

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Errata

In the scientific article "Chalazion and demographic characteristics of patients in a population sample" the authors Marjorie Fornazier do Nascimento, Ana Claudia Viana Wanzeler, Roberta Lilian Fernandes Sousa, Larissa Horikawa Satto, Carlos Roberto Padovani, and Silvana Artioli Schellini, published in *Journal Ophthalmology* in the July - August 2015 (*Rev Bras Oftalmol.* 2015; 74 (4): 222-4) on page 222, in the summary results in the item which reads: **156%**, read: **156‰**. On page 223, in results first paragraph which reads: **156%**, read: **156‰**. On page 224, in conclusion, first paragraph which reads: **156%**, read: **156‰**.