45 and 54.5 percent of female were 55 and 45.5 in primary chalazion (PC) and multiple operated chalazion (MOC) groups, respectively. The mean age was 42.0 ± 19.4 years and 36.6 ± 15.8 years in two groups. The percent of right eye laterality were 72.5 and 52.4, percent of left eye laterality were 27.5 and 47.6 in PC and MOC groups, respectively. The percent of upper eyelid location were 60 and 40, percent of lower eyelid location were 40 and 60 in PC and MOC groups, respectively. When compared two groups according to age, gender, chalazion laterality and location, there were no statistically significant differences (p values were 0.302, 0.475, 0.119 and 0.259 respectively).

CONCLUSION: Factors such as age, gender and site of chalazion are similar in both PC and MOC groups.

Key words: Operated chalazion; Primary chalazion; Age; Gender; Location; Laterality

© 2017 The Author(s). Published by ACT Publishing Group Ltd. All rights reserved.

Are There Any Difference Between Primary and Multiple Operated Chalazion According to Age, Gender or Lesion Location?

Çağrı İlhan, Pelin Yılmazbaş

Çağrı İlhan, Ophthalmology Clinic of Hatay State Hospital, Hatay, Turkey
Pelin Yılmazbaş, Ophthalmology Clinic of Ulucanlar Eye Research and Education Hospital, Ankara, Turkey

Conflict-of-interest statement: The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper.

Open-Access: This article is an open-access article which was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: http://creativecommons.org/licenses/by-nc/4.0/

Correspondence to: Çağrı İlhan, Ophthalmology Clinic of Hatay State Hospital, Hatay, Turkey.
Email: cagrilihan@yahoo.com

Received: June 6, 2017
Revised: July 5, 2017
Accepted: July 7, 2017
Published online: September 18, 2017

ABSTRACT

AIM: This study aimed to compare the effect of age, gender and site of chalazion between cases underwent chalazion surgery for first time and those who underwent multiple chalazion surgery.

MATERIALS AND METHODS: Daily chalazion operation lists of Ulucanlar Eye Training and Education Hospital were examined retrospectively. Adult patients who missing medical records and all pediatric population were excluded. Forty patients who underwent chalazion surgery for first time and 22 patients who underwent multiple chalazion surgery were included. Two groups were compared according to age, gender, and site of chalazion.

RESULTS: This study consisted of 30 males and 32 females. The mean age of patients was 40.1 ± 18.2 years. The percent of male were 45 and 54.5, percent of female were 55 and 45.5 in primary chalazion (PC) and multiple operated chalazion (MOC) groups, respectively. The mean age was 42.0 ± 19.4 years and 36.6 ± 15.8 years in two groups. The percent of right eye laterality were 72.5 and 52.4, percent of left eye laterality were 27.5 and 47.6 in PC and MOC groups, respectively. The percent of upper eyelid location were 60 and 40, percent of lower eyelid location were 40 and 60 in PC and MOC groups, respectively. When compared two groups according to age, gender, chalazion laterality and location, there were no statistically significant differences (p values were 0.302, 0.475, 0.119 and 0.259 respectively).

CONCLUSION: Factors such as age, gender and site of chalazion are similar in both PC and MOC groups.

Key words: Operated chalazion; Primary chalazion; Age; Gender; Location; Laterality

© 2017 The Author(s). Published by ACT Publishing Group Ltd. All rights reserved.


INTRODUCTION

Chalazion is one of the most prevalent eye diseases. Non-infectious lipogranulomatous inflammation related to blocked meibomian gland orifices causes chalazion[1-3]. Painless swelling, ptosis, narrow eyelid aperture and astigmatism are chalazion related clinical findings[3]. If lesion does not resolve with warm compress, several invasive treatment options such as intralesional steroid injection or surgical drainage can be performed[4].

After treatment, recurrent chalazion can occur in same or another eyelid. In generally, this condition is related to chronic blepharitis and meibomian gland dysfunction. Meibomian glands are placed in tarsal plates of eyelids and produce lipid layer of preocular tear film[5]. Normally, meibomian glands have different anatomical properties in...
upper and lower eyelids. Meibomian glands are thinner and longer in upper eyelids than in lower eyelids. Many ophthalmic, systemic or environmental factors contribute to development of meibomian gland dysfunction. Meibography showed obscuration of around 5-10 meibomian glands at site of chalazion\[6\]. Gland dropout occurs more in elders, lower eyelid and females\[7\].

In our clinical study, we aimed to compare the effect of age gender and site of chalazion between cases who underwent chalazion surgery for first time and those who underwent multiple surgery.

**MATERIALS AND METHODS**

We accomplished a retrospective analysis of daily chalazion operation lists in Ulucalnar Eye Research and Education Hospital, between January 2015 – December 2015. These lists contain name of patients and short information such as age, gender, ophthalmic operation history, lesion laterality, and location. Adult patients who missing medical records and all pediatric population were excluded. Twenty-two patients who had multiple operated chalazion (MOC) (patients who previously operated at least one time) were included. Forty patients who suffered primary chalazion (PC) (patients who going to be operated first time) were selected randomly in more than 300 other adult patients and included study. This study followed the tenets of the Declaration of Helsinki and was approved by the local ethics committee.

Statistical Package for the Social Science (SPSS) 22.0 (IBM Corp., NY, USA) was used for statistical analysis. Kolmogorov-Smirnov test was used for test of normality. It was seen numerical data did not fit normal distribution. Mann-Whitney U test was used for analysis of two independent samples as nonparametric test.

**RESULTS**

This study consists of 30 (48.4%) males and 32 (51.6%) females totally 62 patients who suffered chalazion. The mean age of patients was $40.1 \pm 18.2$ years with range between 18-83-year-old. The laterality of lesion was 65.6% in right eye and 34.4% in left eye. The location of lesion was 56.0% in upper eyelid and 44.0% in lower eyelid.

Forty-five percent of patients were male and 55% of patients were female in PC group. 54.5% of patients were male and 45.5% were female in MOC group. There was no statistically significant gender difference between two groups ($p = 0.475$).

The mean age of PC group was $42.0 \pm 19.4$ years with range between 18-83-year-old. The mean age of MOC group was $36.6 \pm 15.8$ years with range between 18-74-year-old. The mean age of two groups were similar ($p = 0.302$).

The laterality of lesion was $72.5\%$ in right eye and $27.5\%$ in left eye in PC group. The laterality of lesion was $52.4\%$ in right eye and $47.6\%$ in left eye in MOC group. The location of lesion was $60.0\%$ in upper eyelid and $40.0\%$ in lower eyelid in PC group. The location of lesion was $40.0\%$ in upper eyelid and $60.0\%$ in lower eyelid in MOC group. There was no statistically significant difference between two groups according to laterality and location of lesion ($p$ values were $0.119$ and $0.259$ respectively). All results are summarized in Table.

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>PC</th>
<th>MOC</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.0 ± 19.4</td>
<td>36.6 ± 15.8</td>
<td></td>
<td>0.302</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender (%)</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>55</td>
<td>54.5</td>
<td>45.5</td>
<td></td>
<td>0.475</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Laterality (%)</th>
<th>Right Eye</th>
<th>Left Eye</th>
<th>Right Eye</th>
<th>Left Eye</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.5</td>
<td>27.5</td>
<td></td>
<td>52.4</td>
<td>47.6</td>
<td>0.119</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location (%)</th>
<th>Upper Eyelid</th>
<th>Lower Eyelid</th>
<th>Upper Eyelid</th>
<th>Lower Eyelid</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.259</td>
</tr>
</tbody>
</table>

One study showed that meibomian gland dropout is more in females\[6\]. In another study noted that gender was not associated with meibomian gland dropout in subjects < 70 years of age\[6\]. Similarly, in our study, male-to-female ratio were found similar in PC and MOC.

The number of meibomian glands is higher in upper eyelid (approximately 30-40 meibomian glands) when compared to lower eyelid (approximately 20-30 meibomian glands) \[9\]. In addition, meibomian glands are thinner and longer in upper eyelids than in lower eyelids, at the same time squamous blepharitis and posterior lid margin rounding were more in upper eyelid \[6, 9\]. Nevertheless, gland dropout occurs more in lower eyelid \[6\]. In light of this information, it can be considered that the recurrence rate of chalazion is different in upper and lower eyelids. However, no statistically significant differences in location of lesion when comparing PC and MOC.

Retrospective design of our study is an important limitation. So, detailed medical history including recurrent blepharitis and chalazion causing diseases or medications were not asked. Lesions were not separated according to size or duration. Another limitation was that chalazion diagnosis was clinically indicated and not confirmed histopathologically.

Powerful side of study that PC and MOC have been compared first time according to age, gender, and location of lesion, to our knowledge.

**CONCLUSION**

To our knowledge, there are several differences in meibomian gland functional anatomy of upper and lower eyelids. Additionally, aging and gender are directly effect meibomian gland function. However, these factors were found similar in PC and MOC and it can be considered that these factors do not effect directly recurrence rate of chalazion.

**REFERENCES**


Peer reviewer: Yasuhiro Takahashi