

## Eight years Auditing of Chalazion pattern in Tertiary Eye Centre, North-western Nigeria

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### ABSTRACT

*Chalazion is a chronic granulomatous inflammation of the meibomian gland. It presents as a single or multiple lid swelling. The treatment of chalazion could be conservative (massage), drug (intra-lesion steroid), and surgical (incision and curettage). The study was conducted to know the prevalence, management, and correlation between the clinical and histopathological diagnosis of chalazion in our hospital. This is an eight-year retrospective study of all patients with Chalazion seen at our eye clinic between 1<sup>st</sup> January 2012 and 30<sup>th</sup> December 2019. The folders of all the patients diagnosed with chalazion were retrieved and the following information was extracted: socio-demographic characteristics, presenting complaint, eye involved, lid involved, number of the lesion, treatment offered, clinical and histopathological correlation of the lesion. The data was analyzed using Statistical Package for the Social Science version 20. One hundred and two patients with chalazion were seen during the study period. The age ranges from 9 years to 54 years with a mean age of  $24.8 \pm 7.1$ (SD). Majority of the patients (52%) were males while 48% were females. The majority 88.2% of the participants were less than 30 years old. There was a correlation between clinical diagnosis and histopathology reports in 100 cases. One hundred of the patients had incisions and curettage while only two patients were treated conservatively. Chalazion cases are not common eye diseases seen in our eye clinic. There are no discrepancies between the preoperative clinical diagnosis and the pathological findings in our study.*

**Keywords:** Chalazion, Birnin Kebbi, Sebaceous gland carcinoma, Incision & curettage

### INTRODUCTION

Chalazion is a chronic granulomatous inflammation of the meibomian gland or zeisian sebaceous gland. It is an even, hard swelling with normal overlying skin and intact cilia.<sup>1</sup> It is a common lid condition seen in the eye clinic. It presents as a single or multiple lid swelling. It has no age predilection. The risk factors of chalazion include use of makeup,<sup>2</sup> blepharitis, smoking, rosacea, gastritis, anxiety, irritable bowel syndrome, infection by viruses or demodex brevis,<sup>(3-4)</sup> diabetes mellitus<sup>5</sup> and COVID-19 infection through mask-wearing.<sup>6</sup> It is believed that

obstruction of the meibomian drainage by debris or inflammatory cells leads to the formation of chalazion.

Chalazion is a clinical diagnosis presenting with a painless eyelid nodule(s) with normal overlying skin and intact cilia. However, because a life-threatening condition such as eyelid sebaceous glands carcinoma (SGC), and other benign and malignant lid lesions (Merkel cell tumour, desmoplastic malignant melanoma, microcystic adnexal carcinoma, and neurilemoma) can mimic it, hence it is mandatory to send all chalazion samples for histopathological evaluation.<sup>7</sup> Chalazion through pressure on the corneal can result in astigmatism and hypermetropia<sup>8</sup> The treatment of chalazion could be conservative (lid warm compression and massage), drug (intra-lesion steroid injection), and surgical (incision and curettage). There is limited literature available on demographic characteristics, treatment, clinical features, and histopathological correlation of chalazion in Nigeria, hence, the need for this study to be

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undertaken to report prevalence, management and correlation between the clinical and histopathological diagnosis of chalazion from our centre.

## MATERIALS AND METHODS

This is an 8-year retrospective study of all patients with Chalazion who presented at our eye clinic between 1<sup>st</sup> January 2012 and 30<sup>th</sup> December 2019. The folders of all the patients diagnosed with chalazion were retrieved and the following information was extracted: socio-demographic characteristics, presenting complaint, eye involved, lid involved, number of the lesion, treatment offered, clinical and histopathological correlation of the lesion. All the patients were evaluated by the ophthalmologist (resident/consultant). In those patients whose conservative management failed, surgical procedures (incision and curettage) were done. The samples of the lesion (tissue biopsy) collected were sent for histopathological evaluation.

The data was input and analyzed by Statistical Package for the Social Science version 20 (SPSS Inc., Chicago, Illinois, USA). Analysis was done using simple frequency proportions.  $P < 0.005$  was considered significant.

Ethical clearance for the study was obtained from the Ethical Research Committee of Federal Medical Centre Birnin Kebbi.

## RESULTS

One hundred and two patients who presented at our clinic and were diagnosed to have chalazion out of 23,140 new cases seen

within the 8-year study period were included in the analysis. The prevalence rate of chalazion is 0.4 %. The age ranges from 9 years to 54 years with a mean age of  $24.8 \pm 7.1$ (SD). Majority of the patients (52%) were males while 48% were females. The M: F ratio is 1.1:1

The majority 90(88.2%) of the patients were less than 30 years old, single 61(59.8%), had Quranic education 61(59.8 %), farmers 77(75.5%), Hausa by tribe 67 (65.7 %) and practice Islam 87(85.3%). Table 1 shows the Socio-demographic characteristics of the patients. In less than 30 years old, the majority were males 48 (table 2). Right Eye (RE) was mostly involved in the study 63(64%). The majority of chalazion involved the RE upper lid 54 followed by the Left Eye (LE) upper lid 29. Out of 54 RE upper lid chalazion, males 29 was slightly more than females but it was not statistically significant ( $p=0.83$ ) Table 3. In children, less than 15 years of age, 3 (5.6%) of chalazion was in the RE upper lid compared to 54 in the same RE upper lid in individuals more than 15 years of age but was not statistically significant ( $p=0.98$ )-Table 4.

Most of the patients complained of lid swelling 70(68.6%) followed by drooping of the upper lid 12(11.8%) Figure 1. Only 8 (7.8%) patients had recurrent chalazion at 6 weeks after surgery (incision and curettage).

There was a correlation between clinical diagnosis and histopathology report in 100 cases of chalazion. One hundred of the patients had incision and curettage while only two patients were treated conservatively (lid massage) and none was treated with intra-lesion steroids.

**Table 1: Socio-demographic characteristics of the patients**

<b>Description</b>	<b>Frequency (%)</b>
<b>Age (years)</b>	
1-10	1(1.0)
11-20	20(19.6)
21-30	69(67.6)
31-40	5(4.9)
41-50	6(5.9)
51-60	1(1.0)
Total	102(100)
<b>Gender</b>	
Males	53(52.0)
Females	49(48.0)
Total	102(100)
<b>Marital status</b>	
Married	37(36.2)
Single	61(59.8)
Divorced	3(2.9)
Total	102(100)
<b>Education</b>	
Primary	12(11.8)
Secondary	24(23.5)
Tertiary	5(4.9)
Quranic	61(59.8)
Total	102(100)
<b>Occupation</b>	
Farming	77(75.5)
Child	1(1.0)
Artisan	1(1.0)
Civil Servants	20(19.6)
Students	2(2.0)
Total	102(100)
<b>Tribe</b>	
Hausa	67 (65.7)
Yoruba	21(20.6)
Fulani	11(10.8)
Igbo	3(2.9)
Total	102(100)
<b>Religion</b>	
Islam	87(85.3)
Christianity	13(12.7)
Traditionalist	2(2.0)
Total	102(100)

**Table 2: Age and Sex distributions of the patients**

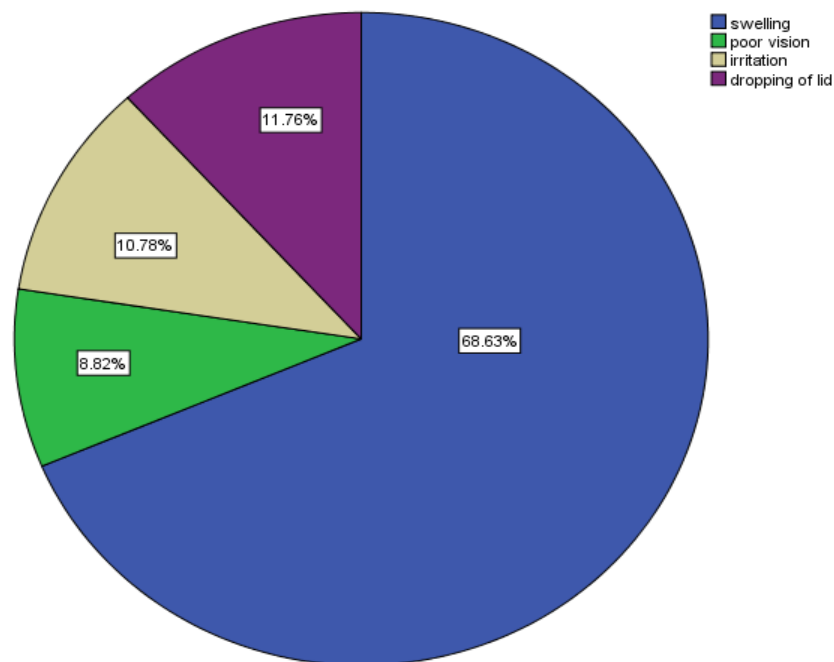
Age group(years)	Male (n= 53)	Female (n= 49)	Total (n=102)
≤10	1 (1.9)	-	1(1)
11-20	12 (22.6)	8(16.3)	20(19.6)
21-30	35 (66.0)	34(69.4)	69(67.6)
31-40	3 (5.7)	2(4.1)	5(4.9)
41-50	2 (3.8)	4(8.2)	6(5.9)
51-60	-	1(2.0)	1(1)

**Table 3: Lid distribution of cases concerning gender**

Sex	Chalazion anatomical location							Total
	RE upper lid	RE lower lid	LE upper lid	LE lower lid	BE upper lid	BE lower lid	BE upper & lower lid	
<b>Males</b>	29	4	15	3	1	1	0	53
<b>Females</b>	25	5	14	2	2	0	1	49
<b>Total</b>	54	9	29	5	3	1	1	102

**Table 4: Lid distribution of cases with respect to age**

Age(years)	Chalazion anatomical location							Total
	RE upper lid	RE lower lid	LE upper lid	LE lower lid	BE upper lid	BE lower lid	BE upper & lower lid	
≤15years	3	0	1	0	0	0	0	4
≥15years	51	9	28	5	3	1	1	98
<b>Total</b>	54	9	29	5	3	1	1	102



**Figure 1: Presenting Complaints of the Participants**

## DISCUSSION

The prevalence of chalazion in our study is 0.4% which is comparable to similar studies<sup>5</sup> from USA, India, Brazil and Nigeria. This establishes that chalazion is not a common eye disease seen in the eye clinic.

In our study the male to female ratio was 1.1:1 this was similar to previous studies.<sup>8-10</sup> The mean age of chalazion in our study was  $24.8 \pm 7.1$ (SD) similar to what was reported by Alsammahi et al.<sup>(5)</sup> The age range of our study agreed with previous studies,<sup>(8-11)</sup> this shows that the chalazion occurs in all age groups. The majority of our patients were within the age group of 21-30years similar to the study reported by Alsammahi et al.<sup>5</sup> and Roheem et al.<sup>12</sup> but different from the findings by Otulana et al.<sup>8</sup> and Nascimento et al.<sup>13</sup> The difference might be because of differences in methodology.

In our study, chalazion was slightly more common in males which are different from some previous reports that reported female preponderance.<sup>8,12-16</sup> The reason for male preponderance might be because of

early decision-making and easy access to medical facilities. However, other researchers did not find a significant difference between both sexes.<sup>11,14,17</sup> The right eye was majorly involved in our study and it is similar to findings in some previous studies.<sup>7-10</sup> The reason for this needs further study.

In our study, there was no discrepancy in the clinical and histopathological diagnosis of 100 cases; this was different from some previous reports<sup>7,18,19</sup> that reported various discrepancies in the clinical and histopathological findings. The difference may be because all our cases were carefully examined by a trained Oculoplasty surgeon and a senior ophthalmologist resident preoperatively before surgery which gives a better clinical assessment. Although there were no discrepancies between the clinical and histologic diagnosis in this study, it should not be a reason not to routinely send chalazion specimens for pathological examination since chalazion can mimic life-threatening lid conditions such as sebaceous gland carcinoma and malignant melanoma. A

recurrence of 7.8% was seen in our study, this finding was comparable with other studies where recurrence was seen in 3-16.7% after 6 weeks postoperatively.<sup>7</sup> Ninety-eight per cent of our cases were treated with surgery (incision and curettage) this was similar to other reports.<sup>7-10</sup> This confirmed surgery (incision and curettage) as the main treatment of chalazion.

Limitation –this study is a hospital-based retrospective study.

## CONCLUSION

Chalazion cases are not common eye diseases seen in our eye clinic. The right eye is still the eye mostly affected by chalazion. Furthermore, there are no discrepancies between the preoperative clinical diagnosis and the pathological findings in our study, but this should not be a reason for refusing to do pathology evaluation on chalazion specimens because life-threatening lid conditions can mimic chalazion in their presentation.

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