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Original Research Article

To study the various causes and demographic profile associated with Chronic Dacryocystitis at Otorhinolaryngology Department

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Abstract

Background & Methods: The aim of the study is to study the various causes & demographic profile associated with Chronic Dacryocystitis. Simultaneously, nasal cavity of the site to be operated was anaesthetized with small merocel soaked with solution consisting of 4% Xylocaine & adrenaline in a concentration of 1:30000 & was also kept for at least 45 minutes.

Results: In both the groups, mostly cases presented early within 2 years of onset of symptom with 15(50%) & 20(66.6%) cases in group I & II respectively; 13(26%) & 10(33.4%) cases in group A & B respectively presented between 2 & 4 years of onset of symptom & very few 2(6.6%) cases presented after 4 years of onset of symptom. Difference in the distribution of this measurement between the two groups was statistically significant thereby indicating the homogenous distribution of the study groups.

Conclusion: The study consisted of 60 confirmed cases of Chronic Dacryocystitis, who underwent Dacryocystorhinostomy either by Endonasal Endoscopic or Laser Assisted DCR. All the age groups were affected by Chronic Dacryocyatitis. The posterior border of lacrimal bone in relation to axilla of middle turbinate can be posterior or anterior, & can lie 4 mm posterior to 3 mm anterior to axilla of middle turbinate.

Keywords: causes, demographic, chronic & dacryocystitis.

Study Design: Prospective Interventional Study.

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Introduction

Over the past three decades, a number of methods using different powered instruments have been tried such as use of drills, punches, surgical electrodes & various types of LASER to remove bony covering (Lacrimal sac along with maxillary process of frontal bone & frontal process of maxillary bone) for complete exposure of lacrimal sac as full exposure of the lacrimal sac is one of the deciding factor for the success of the DCR surgery[1-3]. The reported success rate of endoscopic DCR ranges from 79.4% to 96%.

The treatment of the condition is re-establishment of lacrimal passage in the nose known as Dacryocystorhinostomy(DCR). For years, External Dacryocystorhinostomy(DCR) has been the gold standard of treatment for this condition. With the advancement in endoscopic & Light Amplification by Stimulated Emission of Radiation (LASER) technology, endonasal & transcannalicular approach has become increasingly popular in past two decades. Better cosmesis, Short recovery time, lower risk of morbidity without interference with lacrimal pump function are some of the advantages offered by minimally invasive approach over conventional external DCR[4].

Disadvantages of External DCR are presence of a cutaneous scar, damage to orbicularis oculi muscles with associated possibility of injury to medial canthal ligament & require relatively more operative time. Also, external DCR cannot be performed in acute phase of infection because of inflamed skin resulting in poor wound healing[5].

The ultimate aim of DCR surgery is to create a patent unscarred rhinostomy with a dynamics of low pressure nasolacrimal bypass system so that tear can flow uninterrupted & patient relieved of epiphora associated dacrocystitis or mucocele[6].

Material & Methods

Present study conducted at Ram Krishna Medical College, Hospital and Research Centre, Bhopal for 01 Year Patients of both the group underwent surgery under Sedation using a mixture of 1 ml injection Pentazocine & 2 ml injection Promethazine by intramuscular route 45 minutes prior to surgery. Laser assisted DCR (Group B) 30 & Endonasal surgical route (Group B) 30 patients each in two groups.

The sample size was calculated by applying Power & sample size program as the study is of a continuous response variable from independent & experimental subjects with 1 control per experimental subject. In previous study, the response within each subject group was normally distributed with standard deviation.

Inclusion Criteria: All cases of Chronic Dacryocystitis fulfilling following criteria:

1. Age above 18 years

2. Willing to participate in the study

Exclusion Criteria:

1. Age less than 18 years

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2. Not willing to participate in the study

3. Revision DCR surgery

4. Canalicular or common canalicular blockage on syringing

Result

Table No. 1: Age Group (in Years)

Age Group (in Years)	Group A	Group B	P value
18-30	10(33.3%)	13(43.3%)	0.61
31-42	8(26.6%)	5(16.6%)	
43-54	7(23.3%)	6(20%)	
55-66	5(16.6%)	6(20%)	

Total of 60 cases completed their 3 months follow up & were included for the statistical analysis. Out of this, 30 cases were of Laser assisted DCR (Group A) & rest 30 cases were of Endonasal surgical route (Group B). $p>0.05$ value is not significantly associated.

Table No. 2: Duration of Disease

Duration of Disease (in Years)	Group A	Group B
0.1-2.0	15 (50%)	20 (66.6%)
2.1-4.0	13 (26%)	10 (33.4%)
4.1-6.0	2 (6.6%)	-

In both the groups, mostly cases presented early within 2 years of onset of symptom with 15(50%) & 20(66.6%) cases in group I & II respectively; 13(26%) & 10(33.4%) cases in group A & B respectively presented between 2 & 4 years of onset of symptom & very few 2(6.6%) cases presented after 4 years of onset of symptom.

Table No. 3: History of Trauma & Allergy in the two groups

History of Trauma & Allergy	Group A		Group B	
	Yes	**No**	**Yes**	**No**
Trauma	-	30(100%)	-	30(100%)
Allergy	-	30(100%)	-	30(100%)

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There were no cases with history of trauma or allergy. So in the present study these factors were absent in both the groups thereby making both the groups homogenous for comparison.

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Table No. 4: Distance of Lacrimal Bone from Axilla of Middle Turbinate

Distance (in mm)	Group A	Group B	P Value
-4	4 (13.3%)	1 (3.3%)	0.042
-3	2 (6.6%)	2 (6.6%)	
-2	11 (36.6%)	12 (40%)	
-1	1 (3.3%)	2 (6.6%)	
0	-	1 (3.3%)	
+1	3 (10%)	1 (3.3%)	
+2	4 (13.3%)	5 (16.6%)	
+3	5 (16.6%)	6 (20%)	

Difference in the distribution of this measurement between the two groups was statistically significant thereby indicating the homogenous distribution of the study groups.

Discussion

In the present study, cases in different age groups were homogenously distributed in the two groups with a mean age of 39.76±12.97 & 37.50±13.13 years in group A & B respectively. Similar mean age with value of 33.13 & 33.18 years was found in studies done by Nayak DR et al[7] & Ingale MH et al[8] respectively. A higher mean age above 60 years was seen in studies done by Hartikainen J et al[9]. This concludes that the condition of Chronic Dacryocystitis can affect any age group.

In our study, a remarkably higher percentage of cases presented within 2 years of onset of symptoms so this is an indicator of distressing nature of disease which causes early need of management. Study done by Tripathi A et al[10] found statistically significant outcome in patients presenting relatively early with duration of symptom within 6 months.

In 63.64% & 59.38% of cases in Group A & B respectively, position of posterior border of the lacrimal bone was posterior to the axilla of middle turbinate thereby concluding that most common position of posterior border of the lacrimal bone is posterior to the axilla of middle turbinate & it can extent up to a distance of 4 mm behind as per our study & it matched with Study done by Alherabi A et al[11] found position of lacrimal sac anterior to axilla of middle turbinate with 6.6 & 5.4 mm as the mean dimension of sac respectively in series of cadaveric dissection of the lateral nasal wall. The present distance is measured in relation to the posterior border of lacrimal bone as the anterior half of the lacrimal sac is covered by the frontal process of the maxillary bone; whereas posterior aspect of the lacrimal sac is covered by the lacrimal bone[12]. Lacrimal bone extends beyond the margins of the lacrimal sac & this explains the posterior location of the posterior border of the lacrimal bone though the sac is anterior to the axilla of middle turbinate. Study found average distance of sac from axilla of middle turbinate to be 5.4 mm. The significance of this finding is that while operating one should keep in mind the probable variation in the relative position of posterior border of the lacrimal bone & its close proximity with the uncinate process in such situation.

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Conclusion

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