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State of the Art Study on Epidemiology of Chronic Dacryocystitis in Rural Community

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ABSTRACT

Introduction: Infective and Inflammatory pathology of Lacrimal sac which is located between the medial canthus of the eye and nose is called as Dacryocystitis. It is an important cause of ocular morbidity in India. It has higher incidence among lower socio economic status.

Objective: The goal of the present study was to find the occurrence of Chronic Dacryocystitis in rural area and to correlate it with socioeconomic status.

Material & Methods: Our study is a cross-sectional hospital based study conducted from January 2019 to December 2019 in MVJ Medical College and Research Hospital, Hoskote.

Results: The Present study shows maximum number of patients belonged to the age group of 61-70 years (26.4%). Females were affected predominantly (52.8%). Most of the patients belonged to class III (39.6%) & V (35.8%) of Revised B.G Prasad Socio-economic classification update 2019.

Conclusion: There is a correlation between Chronic Dacryocystitis with Low Socioeconomic status.

Key Words: Chronic Dacryocystitis, Epidemiology, Epiphora, Socio-economic status

INTRODUCTION

Infective and Inflammatory pathology of Lacrimal sac which is located between the medial canthus of the eye and nose is called as Dacryocystitis. It is an important cause of ocular morbidity in India[1]. It can involve both sides. The Lacrimal drainage system consists of the opening known as puncta(Upper and lower) which continuous as upper and lower canaliculus, which in turn opens into the lacrimal sac via the common canaliculus. Lacrimal sac continues down to become the nasolacrimal duct which opens into inferior nasal meatus.

Obstruction anywhere along the lacrimal passage leads to Epiphora. Obstruction of the drainage of tears can be classified into functional and anatomical. Along the lacrimal drainage pathway anatomical obstruction can occur at any point, which can be either congenital or acquired. The acquired nasolacrimal duct obstruction is of two types: Primary or Secondary. Primary acquired nasolacrimal duct obstruction is an obstruction caused by mucosal inflammation of unknown etiology that eventually leads to fibrosis. Secondary acquired lacrimal drainage obstruction may result from a wide variety of infections, allergies, inflammatory, neoplastic, traumatic or mechanical causes[2]. Acquired Dacryocystitis can be acute, subacute or chronic[3].

Chronic Dacryocystitis is commonly encountered by an ophthalmologist accounting for 87.1% of Epiphora, which causes social embarrassment due to chronic watering from eyes [4-5]. It commonly affects females over 40 years of age with peak incidence in 60 to 70 years [6]. It is more common in Whites than in Negros and more common in India as being tropical country. It has higher incidence among people of lower socioeconomic status [6].

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Occupational history is important where in the people working in factories with lot of smoke, fumes and irritants are there and proper protective measures are not there. In rural India one of the most common modes of cooking, boiling water in bath room is still firewood / Chullah and the female population is exposed to the fumes and the irritants of the charcoal.

Studies done on the epidemiological factors contributing to Dacryocystitis in Indian population are few[2,7]. Most of the people consider watering from eyes as minor discomfort and avoid themselves from presenting to ophthalmologist as they are unaware of the deleterious complications. Early diagnosis and treatment is always warranted to avoid complications and need for surgical intervention[7]. The goal of the present study was to find the occurrence of chronic Dacryocystitis in rural area and to correlate it with socioeconomic status.

MATERIAL AND METHODS

Our study is a cross-sectional hospital based study conducted from January 2019 to December 2019 in MVJ Medical College and Research Hospital, Hoskote. Informed consent was taken.

Inclusion criteria:

All patients complaining of watering or discharge in the eyes who were diagnosed for primary acquired nasolacrimal duct obstruction or Chronic Dacryocystitis were included in the study.

Exclusion criteria:

1. Patients below 20 years of age.
2. Patients who had undergone any surgical intervention in the past like Dacryocystorhinostomy, and Congenital Dacryocystitis.
3. Patients with Acute Dacryocystitis.

The patients presenting to outpatient department of Ophthalmology belonging to inclusion criteria were interrogated for the following details after taking the informed consent.

1. Demographic profile (Name, Age, Sex, Occupation and Address) --All the patients falling under our inclusion criteria were enrolled for the study. Their name, age, sex, residence and occupation were recorded.
2. Socioeconomic status according to Revised Modified B.G. Prasad's classification update 2019[8] (Table 1).

The advantage with Prasad's classification is that it takes into consideration only the income as a variable and it is simple to calculate. This can be applied to assess the socioeconomic status in both rural and urban areas.

3. Chief Complaints, medical history, treatment history and surgical history were recorded.
4. Thorough detailed examination of eyes and ocular adnexa was performed using diffuse torch light and slit lamp.
5. Regurgitation test and Sac syringing

Regurgitation Test: It is done by applying pressure over the lacrimal sac area with either thumb or index finger and observing the puncta. In chronic Dacryocystitis the contents of the sac shall regurgitate through the lower or upper punctum or both. In chronic Dacryocystitis due to pump failure, the contents of the sac shall empty in the nose. In chronic Dacryocystitis with encysted mucocele, there is no regurgitation of the contents.

Sac Syringing: Local anaesthic eye drops is instilled into the eye before performing the procedure. Patient is asked to look up; lower eyelid is pulled down gently to visualize the punctum. A saline filled 2ml syringe attached with a canula is introduced into the lower punctum. The saline is gently pushed through the punctum. Nasolacrimal passage is open if the patient perceives salty taste. In case of block in pathway saline regurgitates either from the same or both punctum.

All the details were collected prospectively and analyzed using Statistical Package for the Social Sciences (SPSS) Software and conclusion was derived based on observations.

RESULTS

Table 2 presents Age distribution of Chronic Dacryocystitis. It is observed that the Chronic Dacryocystitis was seen in all age groups, majority in 61-70 years (26.4%) followed by 41 -50 years (22.6%) and 51-60 years (20.8%).

In our study, Chronic Dacryocystitis affected more in females. There were 28 females (52.8%) and 25 males (47.2%) as shown in Table 3.

Table 4 presents the Laterality of Dacryocystitis. It is observed that out of 53 patients the highest incidence of Chronic Dacryocystitis was seen on right side eye i.e. in 24 patients (43.3%), bilaterally in 16 patients (30.2%) and left side eye in 13 patients (24.5%).

Table 5 presents the Occupation and Socioeconomic status of the study population. It is observed that High Incidence of Chronic Dacryocystitis was seen in patients who belonged to class III & V as per the Classification. It is observed more in House wives and wage laborer followed by farmers.

Table 6 presents the Symptoms of Chronic Dacryocystitis. It was observed that Epiphora (64.2%) was the leading presenting symptom in Chronic Dacryocystitis.

DISCUSSION

Chronic Dacryocystitis is a common problem of lacrimal drainage system, treated efficiently in recent years with ad-

vances in investigative operational technique pertaining to solve the problems associated with it[2]. Epiphora is the most annoying symptom in about 64% cases, followed by discharge (20.8%) and swelling (15.1%). Our study consisted of 53 patients of Chronic Dacryocystitis who presented at our institute during the month of January 2019 to December 2019.

Patients of Chronic Dacryocystitis were studied with respect to their age, sex, occupation and socioeconomic status. The following observations were noted.

Our results showed 45.3% of the patients belonged to seventh decade of life that is between 61- 70 years of age, which is similar to Surendra P W *et al*[7] study.

Whereas in Jacobs BH *et al* [4] Study, the maximum incidence was seen in between the age of 40-55 years, Sarda *et al* [9] noted maximum incidence in the third and fourth decade. Saxena R.C *et al* [10] and Duke Elder S [11] stated maximum incidence in the fourth decade.

In our study, the incidence of Chronic Dacryocystitis was more commonly noted in the females (52.8%), which was similar to Dalgleish R *et al*[12]. Higher incidence of 61.6%, 67.86% and 84.6% were noted in Payal Katre *et al*[2], Surendra P *et al*[7] and Saxena R C *et al* [10] respectively.

The possible reasons for females to be more affected are due to changes in the mucus membrane of the lacrimal apparatus secondary to menopause suggested by Pico *et al*[13], higher vascular congestive factor and a narrower bony nasolacrimal canal was suggested by Meller[14]. According to Ramamani *et al*[15] Kitchen droplet fumes and cosmetic lining of eye lid & margin might contribute to the possible female predilection.

In our study of 53 cases, 15 cases (28.3%) were left sided obstruction and 38 cases (71.7 %) were right side obstruction. This is in accordance to the studies done by Reddy *et al*[16], Jacob *et al* [2], Pandya *et a* [17] and Ramamani *et al*[15]. Unilateral incidence is due to the anatomical narrowing of one side of the nasolacrimal duct making it more prone for obstruction compared to the normal or more spacious contralateral nasolacrimal duct[15].

In our study, epiphora was the commonest presenting symptom in 34 patients (64.2%) followed by the symptom of discharge in 11 patients (20.8%) and swelling near the medial canthus in only 8 patients (15.1%). Zilelioglu G *et al* [18] reported the incidence of epiphora in 86% and discharge in 3% cases.

The prevalence of Dacryocystitis is also determined by socioeconomic status to correlate its impact on quality of life of living standard. In our study, people belonging to class III & V were affected more, similar to Surendra *et al* [7]. This can be attributed to poor hygienic conditions and low living standards.

CONCLUSION

This paper presents the Epidemiology of Chronic Dacryocystitis. The authors have studied the correlation of Chronic Dacryocystitis with Low Socioeconomic status using modified B.G Prasad socioeconomic classification update 2019. It was observed that Chronic Dacryocystitis was commonly seen in 7th decade. Epiphora was the most common clinical presentation, preponderance in females. The study included more of patients belonging to Socio economic status of Class III & V. To solve the enigma of Chronic Dacryocystitis in the people of low socioeconomic group with poor hygiene and low standard of living in rural area, awareness should be created.

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REFERENCES

1. Shah CP, Shantani D.A. Comparative bacteriological profile and antibiogram of Dacryocystitis. Nepal Jr of Opthalmology 2011;3(6):134–139.
2. PayalKatre et al. Epidemiological study of dacryocystitis in rural population Panacea Journal of Medical Sciences, January-April, 2017;7(1):11–14.
3. Myren Yanoff, Jay S. Duker. Ophthalmology, 5th Edn.: The lacrimal Drainage system, Chapter-12.2, P.1338–1339 .
4. Jacobs, H.G. Symptomatic epiphora. Brit. J. Ophth. 1959; 43:415–421.
5. Mal R, Banerjee AR, Biswas MC, Mondal A, Kundu PK, Sasmal NK. Clinico-bacteriological study of chronic Dacryocystitis in adults. J Indian Med Assoc., 2008;106(5):296–98.
6. Gillil GD. Texas Ophthalmic Plastic, Reconstructive Orbital Surgery Associates eMed Space. Ophthal Lacrimal August 18, 2009.
7. Wadgaonkar Surendra P, Patil Preeti A. Epidemiology of chronic dacryocystitis with special reference to socioeconomic status: A rural hospital study. Indian Journal Of Clinical And Experimental Ophthalmology 2016;2(1) 52–56.
8. Pandey V K, Agarwal P, Kakker. Modified B G Prasad Socio Economic Status Classification update 2019, Indian Journal of Community Health 2019; 31(1):123–125.
9. Sarda, R. P. Dacryocystorhinostomy. Brit. J. Ophth. 1961; 45:138–143.

10. Saxena, R. C. Garg, K. C.: Scope of Dacryocystorhinostomy, J. of All-India Ophthal. Soc.,17,55–58.(1969).
11. Duke Elders S. Disease of lacrimal passages; system of ophthalmology. Vol. XIII part-II, Mosby Publication, 1974,675-724.
12. Dalgleish R. Idiopathic acquired lacrimal drainage obstruction. Br J Ophtholmology, 1967;51:463.
13. Pico g. A modified technique of external dacryocystorhinostomy, Am J Ophthalmol. 1971;72(4):679–90
14. Meller J. Diseases of lacrimal apparatus (1929): Transactions of Ophthalmic Society, UK 49:233.
15. Ramamani Dalai, Rajashree Rout, Samarendramohapatra, Sumita Mohapatra. A Study on Clinical Profile and Outcome of Chronic Dacryocystitis in Adults in a Tertiary Care Center, Paripex. Indian Journal Of Research. 2019: 8(9).
16. Reddy PS, Reddy BS. Dacryocystitis; Aclinico-pathological study, JIndian Med Assoc. 1955;1 :24:11:413–6.
17. Pandey R. Dacryocystorhinostomy and the superior-inferior flap technique. Indian J Ophthalmol. 1967;15:94–7.
18. Zilelioglu G, Tekeli O, Ugurba SH. Results of endoscopic endonasal non laser dacryocystorhinostomy. Doc Ophthalmol 2002 Jul; 105(1):57–62.

Table 1: Revised Modified B.G. Prasad's Classification of socioeconomic status 2019[8]

Social class	Monthly Income (Rs.)
I	7008 and above
II	3504 -7007
III	2102-3503
IV	1051-2101
V	1050 and below

Table 2: Age distribution of Chronic Dacryocystitis

Age groups	No of Patients	Percentage (%)
21-30	4	7.5
31-40	5	9.4
41-50	12	22.6
51-60	11	20.8
61-70	14	26.4
71-80	6	11.3
81-90	1	1.9

Table 3: Gender distribution of Chronic Dacryocystitis

Gender	Frequency	Percentage (%)
Female	28	52.8
Male	25	47.2
Total	53	100

Table 4: Laterality of Chronic Dacryocystitis

Laterality	No of Patients	Percentage (%)
Both eye	16	30.2
Left Eye	13	24.5
Right Eye	24	45.3
Total	53	100.0

Table 5: Occupation and socioeconomic status of the study population

Occupation	Social Status						
	I	II	III	IV	V	Total	Percentage (%)
Farmer	1	3	8	3	0	15	28.3
Petty trader	1	1	0	0	0	2	3.8%
House wife	0	0	0	0	17	17	32.1%
Unemployed	0	0	0	0	02	2	3.8%
Wage Laborer	00	0	13	4	0	17	32.1%
Total	2	4	21	7	19	53	100%

Table 6: Symptoms of Chronic Dacryocystitis

Symptoms	Frequency	Percentage (%)
Discharge	11	20.8
Epiphora	34	64.2
Swelling near Medial Canthus	8	15.1
Total	53	100.0