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Research Article

PATTERN OF INDICATIONS, TECHNIQUE, COMPLICATIONS IN DACRYOCYSTECTOMY

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ABSTRACT

Purpose: To report the indications and success rates of Dacryocystectomy in a tertiary hospital. A prospective interventional study was conducted at the department of ophthalmology, Rajah Muthiah Medical College and Hospital, Annamalai Nagar, Chidambaram in patients who underwent Dacryocystectomy. Data included patient demographics, indication for dacryocystectomy and complication at one month and six month postoperatively.

Results: 25 Dacryocystectomy surgeries were performed over the study period. The mean age of the group was 61.28±6.7 years old, 68% patients were male, 52% surgeries were performed on the left side. Chronic dcaryocystitis was the most common indication for dacryocystectomy. Successful treatment was observed in 60% of patients remaining 40% presented with postoperative tearing and facial scarring.

Conclusion: The main indication for dacryocystectomy in our hospital was chronic dacryocystitis with good outcome for elderly patients.

INTRODUCTION

Dacryocystectomy (DCT) was originally described by Woolhouse in 1724 and, prior to the introduction of Dacryocystorhinostomy (DCR), DCT was the standard procedure to treat dacryocystitis and lacrimal fistulas[1]. DCT involves the complete surgical removal of the lacrimal sac and for many years was considered an old procedure used only for excision of lacrimal sac tumors[2,3]. However, probably because DCT is considered less invasive than DCR at maintaining lacrimal bone and ensuring that nasal mucosa is not disturbed, several changes in technique and new approaches were suggested[1,4,5].

DCT can be an alternative for selective cases of chronic dacryocystitis concurring with underlying dry eye, recurrent dacryocystitis, associated conditions that cause scarring in the nasal mucosae, frail patients with cardiac or neurologic comorbidities, multiple failed DCR, severe atrophic rhinitis, systemic infectious disease affecting the nasal mucosa (e.g., Leishmaniasis), lacrimal sac mucopyoceles with nasal malformations and patients with wegeners granulomatosis[3,4,6,7].

All of the surgeries were performed by external approach under local anesthesia. The planned incision site was marked at the nasojugal sulcus. The skin was infiltrated with 2% lignocaine to achieve local anesthesia. J shaped incision using a 11 size blade was done at the marked area. Next, the underlying structures were separated from the Fat and orbicularis muscle and the Medial Palpebral ligament is identified and one arm is cut. The lacrimal sac was isolated and removed. Wound was washed and cleaned. The incision was closed using Subcuticular/ interrupted 5–0 Monofilament Nylon (Ethilon). Perfect Hemostasis and adequate wound approximation was achieved. Antibiotic ointment applied over the wound, sterile pad and bandage applied.

Then all the datas in the case Proforma for each study population was collected and entered into Microsoft Excel Sheet and the statistical analysis was arrived by using IBM SPSS software.

The purpose of this study was to present the patient characteristics, indications, and success rates of DCT done by expert surgeons at Rajah Muthiah Medical College and Hospital, Annamalainagar, Chidambaram.

Aims and Objectives

To report the indications and success rates of Dacryocystectomy done in Rajah Muthiah Medical College and Hospital, Annamalainagar, Chidambaram.

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MATERIALS & METHODS

A Prospective Interventional Study to evaluate the outcome in patients who underwent Dacryocystectomy in Ophthalmology Department at Rajah Muthiah Medical College and Hospital, Annamalainagar. All patients between 35-70yrs with Chronic Dacryocystitis, Recurrent Dacryocystitis attending Ophthalmology Department at Rajah Muthiah Medical College and Hospital was taken as study population. All the surgeries were performed by external approach under local anesthesia. The planned incision site was marked at the nasojugal sulcus. The skin was infiltrated with 2% lignocaine to achieve local anesthesia. J shaped incision using a 11 size blade was done at the marked area. Next, the underlying structures were separated from the Fat and orbicularis muscle and the Medial Palpebral ligament was identified and one arm was cut. The lacrimal sac was isolated and removed. Wound was washed and cleaned. The incision was closed using Subcuticular/interrupted 5–0 Monofilament Nylon (Ethilon). Perfect Hemostasis and adequate wound approximation was achieved. Antibiotic ointment applied over the wound, sterile pad and bandage applied. Then all the datas in the case Proforma for each study population was collected and entered into Microsoft Excel Sheet and the statistical analysis was arrived using IBM SPSS software.

Inclusion criteria

- ✓ All patients were between 35 -70 years
- ✓ Chronic Dacryocystitis
- ✓ Recurrent Dacryocystitis
- ✓ Failed DCR

Exclusion criteria

- ✓ Young Patients (less than 30yrs of age)
- ✓ Acute Dacryocystitis
- ✓ Bleeding Diasthesis
- ✓ Acute exacerbation of chronic Dacryocystitis.

Sample size

In the Journal of Seminars in Ophthalmology in 2017 Dacryocystectomy Indications and Results at Tertiary Eye Hospital in Central Saudi Arabia showing 80.8% as success rate of DCT. Keeping this as prior information, using N master sample size software, sample size was determined, relative precision as 20% and level of confidence as 95%. The required sample size is 24, However 25 samples was selected[11].

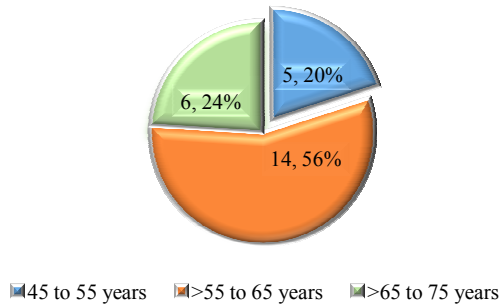
RESULTS

25 DCT's were done at the department of Opthalmology in Rajah Muthiah Medical College and Hospital. The mean age of patients in our study was 61.28 ± 6.7 years. Among the patients, 17(68%) were male and 8 (32%) were female. 13 (52%) patients underwent DCT on the left side and 12 (48%) underwent DCT on the right side.

Table 1 Age Distribution of the study population

Variables	Numbers
Mean age ± Standard Deviation	61.28 ± 6.97
Minimum age in years	45
Maximum age in years	74
Age Category	
45 to 55 years	5 (20.0%)
> 55 to 65 years	14 (56.0%)
> 65 to 75 years	6 (24.0%)
Range	29
Total study participants	**25**

Figure 1: Age category among study particpant

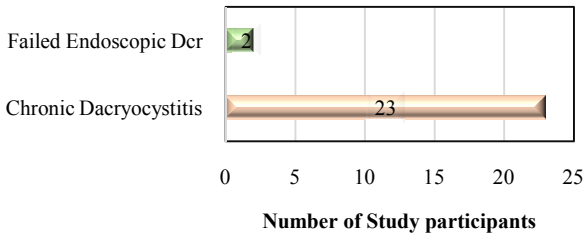


The most common indication for DCT in our study was Chronic dacryocystitis (92%), the remaining 2 (8%) cases underwent DCT for failed endoscopic DCR. The most common presenting symptom was epiphpora, seen in 18 (72%) patients followed by chronic discharge in 7 (28%) patients.

Table 2 Indications for surgery

Indications for Surgery	Frequency	Percent
Chronic Dacryocystitis	23	92.0 %
Failed Endoscopic DCR	2	8.0 %
Total	25	100.0 %

Figure 2: Indications for surgery



The lacrimal sac was excised completely in 17 (68%) and the sac ruptured in about 8 (32%) of cases. There were no other significant complications intraoperatively. The patients were followed up at 1 month and 6 months postoperatively.

The most common postoperative complication at 1 month was watering which was seen in 12(48%) of patients which resolved within a period of 6 months. At 6 months, the most common complication was facial scarring seen in 10(40%). At the end of the follow up period, 15(60%) patients were completely free of any complications, which was considered a successful treatment. No patients required any further hospitilisation.

Table 3 One month complication among male and Female

Complication	Male	Female	p value
No Complication	8 (47.1%)	5 (62.5%)	
Watering	9 (52.9%)	3 (37.5%)	0.673
Total	**17**	**8**	

Figure 3: One month complication among male and Female

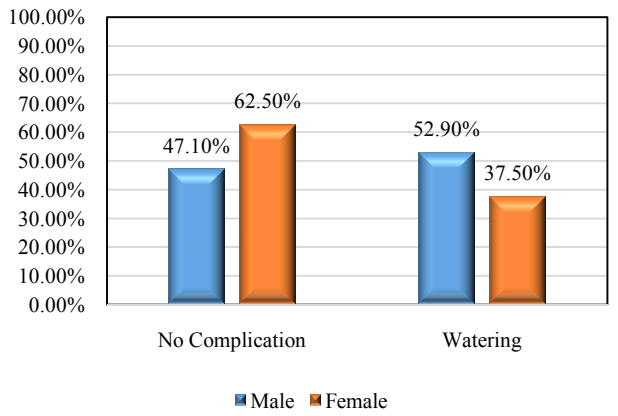
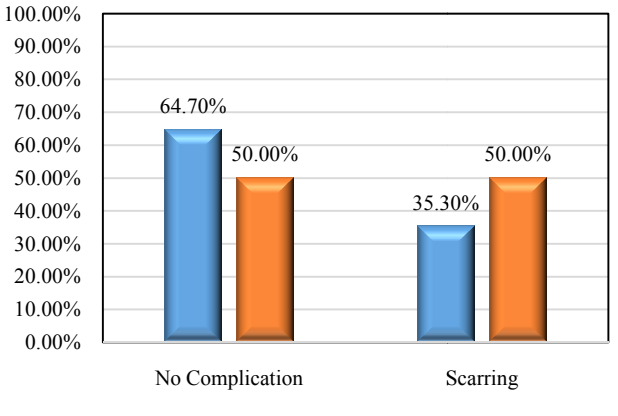


Table 4 Six month complication among male and Female

Complication	Male	Female	p value
No Complication	11 (64.7%)	4 (50.0%)	
Scarring	6 (35.3%)	4 (50.0%)	0.667
Total	**17**	**8**	

Note: p value based on Fisher's exact test

Figure 4: Six month complication among male and Female



DISCUSSION

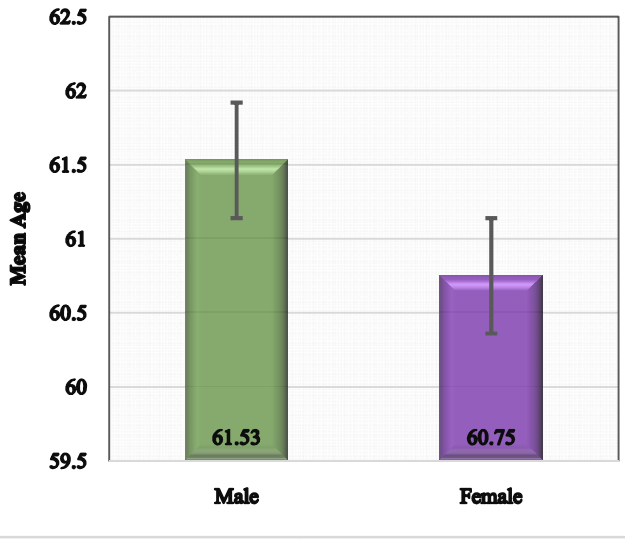
This prospective interventional study was carried out for a period of one year on 25 cases who had nasolacrimal duct obstruction and underwent dacryocystectomy. Lacrimal surgeries continue to evolve with new technical developments. The purpose of this study is to evaluate the indications, technique and complications following dacryocystectomy. Although DCT was mainly considered for treating lacrimal sac tumors, indications were extended to other pathology[3,4,6-8]. DCT is the gold-standard procedure for treating lacrimal sac tumors. However tumors were not included in our study population.

In our study 14 (56%) out of 25 participants, majority of participants were in between the age group 55-65 years and the mean age was found to be 61.28±6.97. Alicia galindo ferreiro *et al* study shows that out of 47 DCT performed the median age of patients was 58.2±2 years old[11]. Raffaele nuzzi *et al* study shows age ranges between 42-85yrs majority of patients were >80yrs old 30.43% and patients >75yrs old 21.74%[12].

Table 5 Mean age distribution among Male and Female study participants

Sex	N	Mean	± Std. Deviation	p value
Male	17	61.53	± 7.324	0.801
Female	8	60.75	± 6.606	

Figure 5: Mean Age distribution among Male and Female study participants

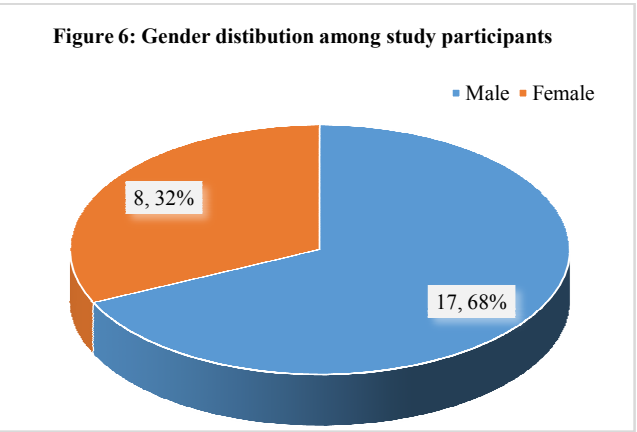


In our study 17(68%) out of 25 participants were males. Hence males are predominantly affected in our study group. Raffaele nuzzi *et al* 29(73.91%) study out of 39 participants were females, therefore females are predominantly affected in their study group[10]. Mohammed dufaileej *et al* 30(63.8%) out of 47 participants were females this study also shows that females are most commonly affected than males[12].

Table 6 Gender distribution among study participants

Gender	Number	Percentage
Male	17	68.0 %
Female	8	32.0 %
Total	**25**	**100.0%**

Figure 6: Gender distibution among study participants

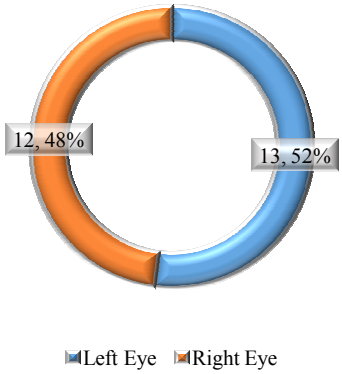


In our study 13(52%) participants out of 25 were operated on left eye. Alberto Galvez – Ruiz *et al* study signifies that 28(60%) out of 47 participants left eye was predominantly involved[12]. Joseph A. Mauriello *et al* study results signifies that 19 out of 25 participants were operated on left eye[5].

Table 7 Distribution of surgery performed based on side of the eye

Side of the eye	Number	Percentage
Left Eye	13	52.0 %
Right Eye	12	48.0 %
Total	25	100.0 %

Figure 7: Surgery performend based on the side of the eye



Most common indication for dacryocystectomy in our study was chronic dacryocystitis out of 25 participants only 2 indications was for failed endoscopic DCR remaining 23 cases was for chronic dacryocystitis[1,4,9,10]. Joseph A. Maurellio *et al* study shows that out of 25 dacryocystectomies done indications were as follows 8 for chronic dacryocystitis, 8 for recurrent exacerbation of acute dacryocystitis, 6 for irreducible lacrimal mucocele, 3 for acute dacryocystitis[5].

In our study post dacryocystectomy patients were followed up at 1 month and 6 month interval to look for complications. In one month follow up period out of 25 participants 12 (48%) were presented with post operative tearing 13(52%) were free of symptoms. In 6 month follow up period 10(40%) patients presented with prominent facial scarring and the remaining 15(60%) patients were free of symptoms. Alicia galindo-ferreiro *et al* study signifies that 38(80.8%) patients out of 47 were free of symptoms 4(8.5%) patients presented with post-operative watering and 3(6.4%) patients presented with dryness and 2(4.3%) patients presented with discharge[11]. Raffaele nuzzi *et al* study signifies that out of 39 participants 14(36.84%) patients presented with persistence of epiphora and of these patients 10(26.31) presented with occasional lacrimation even at 6 month follow up period[12].

CONCLUSION

To conclude, although the incidence of DCT has reduced drastically, it has its own unique indications. Elderly patients with chronic dacryocystitis, failed endoscopic DCR are the common indications of DCT in our study population. The ideal indication currently for DCT is lacrimal sac tumours, although our study did not include this indication.

However DCT technique is cost effective and easier than DCR, less time consuming procedure, minimal intraoperative haemoerrhage, no need of nasal packing like in cases of DCR, no need of hospital admissions can be done as a outpatient procedure, as it is done under local anaesthesia it is safer in cases of frail elderly patients with systemic illness and comorbidities.

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