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Endoscopic Dacryocystorhinostomy: A Prospective Study

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Abstract: ***A clinical study was undertaken to evaluate pre-operative, conditions prevailing atsurgery (prevalence in different ages and sex), symptomatology , per-operative conditions (DNS, hypertrophied turbinate , pre-existing sino-nasal disease), post-op complications, &analyze result of the (technique) used. It's a Prospective study done in a tertiary referral hospital. A total of 50 patients with chronic nasolacrimal duct obstruction underwent endoscopic Dacryocystorhinostomy and were assessed at 1month, 3 months & 6 months post-operatively.6 months post-operatively total relief fromepiphora was 90% (N=50) with few complications. Endonasal endoscopic Dacryocystorhinostomy shows promise in long-term management of Nasolacrimal duct obstruction.***

Keywords: Lacrimal sac, Syringing, Dacryocystorhinostomy (DCR),, Epiphora , Nasolacrimal duct

1. Introduction

The surgical procedure of diversion of lacrimal flow, within the nasal cavity, through an artificial fistula, made at the level of lacrimal sac isdacryocystorhinostomy."Excessive watering of eyes" is a common complaint among these patients. Even though various causes produceepiphora, dacryocystitis – commonest. Obstruction of lacrimal pathways whether congenital or acquired, corrected with dacryocystorhinostomy. Recent advances in endoscope have led to development of endoscopic approach for DCR.In this paper, we analyze results of Endonasal Endoscopic DCR in management of chronicdacryocystitis .

2. Objectives

The aim of study is evaluate pre-operative, conditions prevailing at surgery (prevalence in different ages and sex), symptomatology, per-operative conditions (DNS, hypertrophied turbinate , pre-existing sino-nasal disease), post-op complications, & analyze result of the (technique) used.

3. Materials &Methods

A prospective study was carried out from Sept.2012 to Sept. 2014 atDept. of Otorhinolaryngology at SVS Medical College & Hospital, Mahabubnagar. Total of 50 patients were selected for the study.

Inclusion criteria: All patients, attending our OPD with recurrent Epiphora/ Dacryocystitis& diagnosed to have NLD obstruction based on symptomatic, clinical & radiological back ground.

Exclusion criteria: Patients below 20 yrs and above 70 yrs of age. Cases with pre-saccal block, lacrimal sac tumours, and lacrimal passage tumours, those with bleeding disorders were excluded. History of patient was noted (with age, sex, occupation, presenting complaints, and duration). General physical examination was done, to all patients included in the study. Anterior & posterior rhinoscopy , diagnostic nasal endoscopy, , x-ray PNS were recorded . Investigations routinely performed were, complete blood picture, X-ray PNS, probing & syringing , regurgitation of fluid on pressure over lacrimal sac , with local examination around the eyelids for any swellings, scars, fistulas).

4. Observations

Table 1: Distribution of patients according to age:

Age (yrs)	*No. of patients*	*Percentage of patients*
20- 30	10	20%
31- 40	15	30%
41- 50	18	36%
51- 60	05	10%
61- 70	02	4%
Total	50	100%

On age wise distribution, it was observed that majority of cases, were in 31- 50 yrs age group (66%)

Table 2: Gender distribution

Gender	*No.of Patients*	*Percentage*
Females	39	78%
Males	11	22%
Total	50	100%

The above table shows, females constituted 39(78%), while males constituted 11 (22%) of total 50 patients.

Table 3: Side distributions of eyes

Side	*No. of eyes*	*Percentage*
Lt.eye	36	72%
Rt.eye	14	28%
Total	50	100%

The above table shows 36 (72%) were left sided, & 14(28%) were right sided of 50 eyes.

Table 4: Symptom distributions

Symptom	*No.of Patients*	*Percentage*
Watering	50	100 %
Swelling	17	34%
Pain	04	08%

The above table shows, out of 50 patients, all 50(100%) were having watering of eye, 17(34%) had swelling at lacrimal area, 04(08%) were having pain.

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Table 5: Surgical outcome

Surgical outcome	*No.of cases*	*Percentage*
Success	45	90%
Failure	05	10%
Total	50	100%

The above table shows out of 50 cases operated, 45 cases were successful & 5 cases were failure.

Table 6: Post-op complications

Complications	*No.of eyes*	*Percentage*
Haemorrhage	04	8%
Subcutaneous emphysema	01	2%
Epiphora	01	2%
Total	06	12%

04 eyes had hemorrhage, 01 had subcutaneous emphysema, & 01 had epiphora post-oply.

Table 7: Other surgeries along with Endo-DCR.

DCR + Septoplasty	07
DCR + Conchoplasty	03
Total no. of cases	10

Out of 50 cases, 07 cases had DCR with septoplasty& 03 had Conchoplasty with DCR in the same sitting.

Table 8: Causes of failure

Complication	*No. of Patients*	*Percentage*
Granuloma	03	06%
Adhesions	01	02%
Synechiae	01	02%
Total Patients	05	10%

Table 9: Results of Syringing (Post-op)

	1 month	*3 months*	*6 months*
Patent	46(92%)	45(90%)	45(90%)
Regurg.of clear fluid	02(04%)	03(06%)	03(06%)
Regurg. Of mucopurulent fluid	02(04%)	02(04%)	02(04%)

Total no. of cases (n=50) in each follow up.

5. Discussion

A total of 50 patients with chronic dacryocystitis were taken in the present study. In the present study age group of patients ranged from 20 -70 yrs, youngest was 21 yrs old, andeldest 62 yrs old. No patient in pediatric age group was included in the study. Our study correlates with studies of Young &Hardmann(1989) , Heikki&Sappa (1994)[5]. In a study done by Neeraj Singh, RatnadeepGhosh& Rajesh between jan 1996- jan 2004, patients between 31- 50 yrs age group constituted 68.7% (187/222) which nearly correlates with our study . There is a decreasing trend towards both extremes of age. In addition specific infection , is also more common in the age group (31-50 yrs). In our study , male to female ratio was found to be 1:3 & our data correlates with studies of Heikki(1994) , Young and Hardman (1989) & Heshman Ali (2001)[5].Chronic dacryocystitis has been reported to be more common, in women of low-socio economic group, due to their bad personal habits, long duration of exposure to smoke in kitchen . In addition use of kajal& other cosmetics , increase chance of transmission of infection (Garfin 1942)[5].

In the present study, most of the cases, presented with disease on the left side (72%). It was observed that nasolacrimal duct & lacrimal sac , formed greater on right side than on left side. In our study, there were 7 cases of deviated nasal septum, & 3 cases of enlarged middle turbinate which were taken up for septoplasty&conchoplasty respectively in the same sitting. In few of our cases , associated with septoplasty, septal bleeding was encountered which hampered the endoscopic view. It is suggested that ,incision for septoplasty is to be given on opposite side of deviation, so that soakage doesn't hamper the endoscopic view.

In our study hemorrhage was constituted in about 8% of cases .Hemorrhage was controlled in most with nasal packing which was removed following day. Uncinectomy wasn't performed in any of our cases and the results were much better. Comparing success rates of Lacrimal sac surgery which were published is a difficult task, because different studies use different criteria. The guidelines published by Royal college of Ophthalmologists suggest that lack of tearing 3 months after surgery, is a good indicator of successful surgery[2,4]. In our study post-op review at three months was definitely taken upon for follow up apart from 1 month & 6 months.

Mucosal flap wasn't preserved in majority of our cases, & our success rates coincides with Mahesh, S.Pillai, V.Jain[3] which was 93.3%.Ramakrishnan et al in a study performed without mucosal flap preservation noticed a success rate of 100% for anatomic patency & 93% for complete resolution of Epiphora .Concomitant sinonasal surgeries have no negative influence on outcome of Endonasal DCR. Comparison of Endoscopic DCR with& without concomitant nasal surgeries .

Relief from epiphora	*Total no. of cases*	*Complete recovery*	*Partial recovery*
No concomitant sinonasal surgery	40	38	02
Concomitant sinonasal surgery	10	07	03
Total cases	50	45	05

Though laser wasn't used in any our cases, disadvantages with laser include small rhinostomy site, high recurrence rate, use of very expensive equipment with a difficult learning curve. Endonasal DCR widens the scope of surgery. It is cosmetically more acceptable as it avoids cutaneous scar incision & scar. It can be done as day care surgery where external approach isn't possible. It preserves lacrimal pump mechanism with less morbidity, short operative time, enhanced recovery. Nasal & paranasal sinus pathologies can be corrected in the same sitting[5]. The difficulty in limited visualization of lacrimal sac & Nasolacrimal duct, difficulty in suturing adjacent mucosal flaps, can be overcome with improved nasal endoscopes.

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6. Conclusion

In our study of 50 patients over two years, most of the patients presenting were in age group of 31-50 yrs (66%). Male to female ratio was found to be 1:3. 72% of the eyes presented with Nasolacrimal duct obstruction on left side. Commonest presenting symptom was epiphora, commonest sign of disease is regurgitation of purulent material on compression of sac. Correction of septal deviation improves results of surgery. Concurrent nasal & sinonasal pathologies can be corrected in same sitting. It is far more superior in revision cases. Endonasal DCR has a definite role in chronic dacryocystitis. It has many advantages over standard External DCR. With a good success rate it avoids external scar, produces minimal post-operative discomfort, maintains pumping action of orbicularis oculi & procedure of choice ifrevision is necessary. Regular follow up is very important.

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