Original Article

Surgical Outcome of Endoscopic Dacryocystorhinostomy (EDCR) With and Without Silicon Intubation

Endoscopic Dacryocystorhinostomy

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ABSTRACT

Objective: To compare the results of Endoscopic DCR with silicon intubation and without silicon intubation.
Study Design: Cross sectional study
Place and Duration of Study: This study was conducted at the Lyari General Hospital Karachi from June 2011 to May 2014.
Materials and Methods: Total 100 patients were included in this study. They were divided into 2 groups. Group A consisted 50 (50%) patients operated for EDCR with silicon intubation and 50 (50%) included Group B patients underwent EDCR without use of silicon. Age difference was also seen among both groups. Patients aged 15 to 30 years were in majority.
Results: This age group included 40(40%) patients. 29(29%) patients aged from 31-40 years. 21(21%) had age of 41-50 years. 10(10%) patients were of age between 51 to 70 years. Female ratio dominated over male in gender incidence. 60 (60%) females and 40 (40%) males were sufferrers.
Conclusion: EDCR with Silicon Intubation was seen to be better as compared to the procedure without intubation as the former had least complication rate and higher success rate as compared to the latter.
Key Words: Dacryocystorhinostomy, Nasal Cavity, Lacrimal Sac, Endoscopic.

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INTRODUCTION

Dacryocystorhinostomy (DCR) is a method to provide drainage between the nasal cavity and lacrimal sca. External DCR is the best method to treat NLDO as it is cheap and has higher success rate. The learning period is short and does not require high technology. Older was the first who described DCR in surgery.[1] Some surgeons use tubes routinely and others prefer only in complicated cases. It is believed that these tubes hinder the blockage of ostium. The use of silicone intubation is reported as the effective method to enhance success rate but truth is that it is still the controversial issue.[2]

This procedure is performed by two methods viz traditional and endoscopic. In traditional, a small incision is given to perform the surgery. In another, endoscopy is used to perform the surgery.

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The use of nasal endoscope has become popular now a days due to some advantages as compared to traditional one. It has less peroperative morbidity and no scar.[3]

History of DCR dates back to 1883 when Caldwell reported the first case of intranasal DCR. In 1904, Toti invented the external approach of surgery that was considered to be the gold standard approach in this connection. In 1980s, Steadman, McDonagh and Meiring introduced the endoscopic procedure in the that got popularity soon due to its merits over others. Massero et al presented the first report of Argon Laser in this filed. Gonnering et al later on reported the use of CO2 and KPT in Lasers.[4]

Indications for DCR are the symptomatic distal obstruction of nasolacrimal duct that is not treatable by probing and syringing.[5]

The merits of endoscopic DCR keep it superior procedure to others. It is better aesthetically having no external scar. It also allows a one stage procedure to correct associated pathology. It avoids injury to medial canthus. It preserves the pumping mechanism of orbicularis oculi. It is not contraindicated in active infection of lacrimal system. It is also superior to external approach in revised surgery. It is less bloody.[6,7]

DCR is contraindicated in atrophic rhinitis.This operation is also not performed immediately in patients suffering from acute dacryocystitis.[8,9] There are certain conditions in which this procedure fails.

These are inadequate osteotomy, incomplete sac marsupialization, cicatricial closure of the ostium and granuloma formation. [10,11]

The rationale of our study is to compare the outcome of EDCR with silicon intubation and without it so that the better procedure be applied in patients for providing good results postoperatively.

MATERIALS AND METHODS

This study was done at lyari General Hospital Karachi in ENT Department. This is a cross sectional study done from June 2011 to May 2014. Total 100 patients were included in this study. They were divided into 2 groups. Group A consisted 50 (50%) patients operated for EDCR with silicon intubation and 50 (50%) included Group B patients underwent EDCR without use of silicon.

Patients suffering from NLDO either male or female were included in this study. Patients of age more than 10 years were kept in inclusion criterion. Patients of 10 years or less were excluded from the study. Those patients having canalicular obstruction, lacrimal sac carcinomas, traumatic obstruction, congenital dacryocystitis, post radiation epiphoria and immuno compromised patients were also kept in exclusion criterion.

A complete history and clinical examinaton was done in addition to routine blood investigations. Probing and syringing of sac was done to maintain the patency of the lacrimal system. All patients had undergone a rigid nasal endoscopy in order to evaluate the additional nasal pathologies so that these may be corrected simultaneously. Silicon stents were used in Group A patients and Group B were operated without silicon stents. Later on results were assesed in terms of complete resolution of epiphora, free flow of syringing or saline and the presence of a patent stoma. These were seen in follow up.

RESULTS

Total 100 patients were included in this study and divided into two groups viz Group A and Group B. Group A had 50 (50%) patients whom silicon intubation wa done. Group B had 50(50%) patients without silicon intubation.

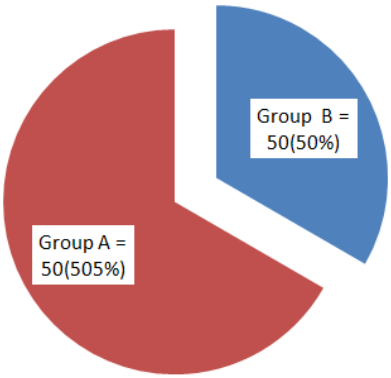
Female ratio dominated over male in gender incidence. 60 (60%) females and 40 (40%) males were sufferrers.

Age difference was also seen among both groups. Patients aged 15 to 30 years were in majority. This age group included 40(40%) patients. 29(29%) patients aged from 31-40 years. 21(21%) had age of 41-50 years. 10(10%) patients were of age between 51 to 70 years.

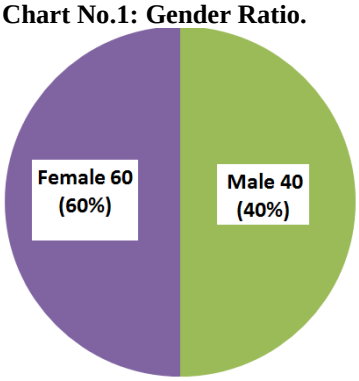
The success rate of Group A in follow after assessing the criteria was excellent. Out of 50, 48(96%) patients recovered completely but in Group B out of 50, 43(86%) was the success rate. The complications of EDCR were the echymosis of cheek 20 (20%) patients without silicon intubation and only 5 (5%) patients with silicn intubation. Another complication was bleeding in orbit seen in 3 (3%) patients of EDCR with silicon intubation and 8 (8%) patients without silicone intubation.

Table No.1: Age difference in both groups.

S.No.	Age in Years	No of Patients	Percentage
1	15-30	40	40%
2	31-40	29	29%
3	41-50	21	21%
4	51-70	10	10%
Total	15-70	100	100%



Pie Chart No.1: Gender Ratio.



Pie Chart No.2: Male, female Ratio.

DISCUSSION

The discovery of endoscopes with different degrees of angulation has dramatically enhanced the usage of endoscopic surgery as the otcomes of EDCR are not only encouraging but als has many predominat advantages over other procedures. Many modifications have been made in this connection like LASER assisted endoscopic DCR, use of silicon tube for stenting, mitomycin C application have bben introduced. Among all, the most commonly used method is keeping silicon stent in endonasal DCR. Many surgeons are of the opinion that silicon stent improves success rate. Some surgeons consider silicon stent as cause of failure.[12]

It is the common and famous procedure to be done for managing the nasolacrimal duct obstruction or chronic dacryostenosis. This procedure was initiated in the 7th decade of 20th century. [13]

Baig et al reported the success rate upto 87.09% with EDCR with silicone intubation whereas the same rate was reported by Delaney and Khooshabeh is 90%. This was also found out in case of using silicon intubation.

McLachian et al noted the rate at 94%. Talpur at el showed the success rate upto 98%. Advani et al reported 95% with silicon intubation. In our study the success rate of EDCR with silicon intubation was 96% whereas the rate witout silicone intubation was 86% in total study of 100 patinets in both groups.[14]

In several studies, the role of silicone intubation in DCR is discuused but has different thounghts or conflicting opinions. Some studies have showed the higher rates of failure of silicone use because of granulomatous inflamation.[15]

In a study done in 2011 regarding this procedure, it has shown equal success rate in silicne intubation and without silicone intubation.Rather and Singh did a large randomized controlled trial which showed the increased success rate of EDCR with silicone intubation.In one study, 70% patients were females but in our study 60% patients are females and 40% male.[16]

A study showed that the common complications after surgery were intranasal tissue granulation, adhesions, infection, hemorrhage and other complications. EDCR has two types of complications. Minor complications include ecchymosis or emphysema of cheek. Bleeding can occur during these procedures. During dissection of anterior spect of the lacrimal sac, intraoperative bleeding is more as compared to postoperative. Major complications include bleeding into orbit. If stent has tension, lacerations of the inferir cnaliculus may occur. Diplopia can also occur. Lesion of the nterior ethmoid artery is also the complication.[17]

CONCLUSION

In our study, the best method with excellent success rate is the endoscopic DCR with silicone intubation because it has higher success rate and has least complication rate.

Author's Contribution:

Concept & Design of Study:	Abdul Waheed
Drafting:	Ashok Kumar
Data Analysis:	Allah Bux Mushtaque
Revisiting Critically:	Abdul Waheed, Ashok Kumar
Final Approval of version:	Abdul Waheed

Conflict of Interest: The study has no conflict of interest to declare by any author.

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