

COMPARISON OF OUTCOME BETWEEN ENDONASAL DACRYOCYSTORRHINOSTOMY WITH AND WITHOUT SEPTOPLASTY

Vindhya Nadgoud¹, Arun Ingale², Vinayak Kuradagi², Sharath Babu K³

¹Final Year Resident, Department of ENT, Gadag Institute of Medical Sciences, Gadag, Karnataka, India.

²Assistant Professor, Department of ENT, Gadag Institute of Medical Sciences, Gadag, Karnataka, India.

³Professor and HOD, Department of ENT, Gadag Institute of Medical Sciences, Gadag, Karnataka, India.

Received : 02/12/2023
Received in revised form : 08/01/2024
Accepted : 25/01/2024

Keywords:
Septoplasty, Endonasal DCR.

Corresponding Author:
Dr. Sharath Babu K,
Email: entgimgadag@gmail.com

DOI: 10.47009/jamp.2024.6.1.183

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2024; 6 (1); 932-934



Abstract

Background: To compare the outcome of endonasal dacryocystorhinostomy with and without septoplasty. **Materials and Methods:** A retrospective study that included 26 consecutive patients diagnosed with chronic dacryocystitis secondary to nasolacrimal duct system obstruction, who underwent endonasal dacryocystorhinostomy with or without concomitant nasal septoplasty in our tertiary care hospital between January 2023 and September 2023. **Result:** A total 26 patients underwent surgeries with 61.53% females, mean age + SD is 34.96 + 11.61 in years. 17 patients underwent only endoscopic dacryocystorhinostomy and 9 patients underwent concomitant septoplasty. The success rate of endonasal DCR alone and endonasal DCR with septoplasty is similar. **Conclusion:** Septoplasty will not alter the outcome of endonasal DCR but when done in cases of gross DNS which was hampering the access to the lacrimal sac area it aids in the endo DCR.

INTRODUCTION

The nasolacrimal duct obstruction is the commonest cause of epiphora. It commonly arises from proximal obstruction in the drainage system at the punctum, upper or lower canaliculi, common canaliculus or nasolacrimal duct. In majority of cases the cause of obstruction is unknown. Such idiopathic obstruction becomes more common with increasing age and shows a female preponderance. Other less common causes include surgical trauma, midface fractures, malignancy and granulomatous conditions such as Wegener's granulomatosis and sarcoidosis.^[1] Adeo Toti first described the external dacryocystorhinostomy (DCR) in 1904. West performed modified endonasal DCR in 1910.^[2] Endoscopic intranasal DCR was first performed by Rice in 1988. Advances in nasal endoscopic surgeries gave new hopes of overcoming the failures of external DCR. Umer et al. in their large series of endonasal endoscopic non-laser DCR found that 21.5% of cases require additional endonasal procedures like septoplasty and FESS. Therefore it is advisable that otolaryngologists are involved in this procedure.^[3]

MATERIALS AND METHODS

This is a retrospective study with 26 consecutive patients who underwent endonasal dacryocystorhinostomy with and without septoplasty in Department Of Otorhinolaryngology (ENT) at Gadag Institute of Medical Sciences, Gadag, Karnataka, India over a period of Nine (09) months between January 2023 to September 2023.

All patients diagnosed with chronic dacryocystitis with nasolacrimal duct block underwent endoscopic endonasal DCR. 17 patients underwent only endoscopic endonasal DCR. 9 patients underwent endoscopic endonasal DCR with septoplasty. Indications in them were 4 patients had anatomical obstruction of nasolacrimal duct secondary to DNS impinging on inferior turbinate and 5 patients had DNS which was obscuring the access of lacrimal sac area so to aid the endo DCR procedure [Figure 1].

Surgical technique: Adequate decongestion of nasal cavity is done with 4% lignocaine and 1:2,00,000 adrenaline. DNE done. Any associated nasal pathology like DNS is identified and dealt by carrying out septoplasty before DCR. The middle turbinate and uncinat process are identified. The area anterior to the uncinat process is the lacrimal sac region. Local infiltration given. An incision made using sickle knife. A square shaped mucosal flap is elevated using freers elevator and reflected backward

on middle turbinate. The anterior lacrimal crest is identified. Bone covering the lacrimal sac is removed using Kerrison bone punch. The frontal process of maxilla and lacrimal bone are removed for exposing the lacrimal sac. The medial wall of the sac is excised and the mucosal flap is split into upper and lower half and is used to cover the raw area created by bone removal. Once the lumen is visualized, sac syringing is done to check for adequacy of the lumen created. Nasal packing done to achieve hemostasis. The nasal pack is removed after 24 hours. The patient is followed up for 1 week, 1 month and 3 months subsequently and lacrimal sac syringing is done to see for the patency of the nasolacrimal pathway and the success of the surgical procedure.



Figure 1: Arrow indicates axilla of middle turbinate and square indicates deviated nasal septum.

RESULTS

A total of 26 patients underwent endonasal DCR with mean age + SD is 34.96 + 11.61 in years (minimum age 16 and maximum age 65) [Table 1]. Total of 16(61.53%) patients were female and 10(38.46%) patients were male. Out of 26 patients 17(65.38%)

patients underwent only endo DCR. 9(34.61%) patients underwent endo DCR with septoplasty. Out of 9 patients 4 patients had gross DNS which was impinging on inferior turbinate leading to nasolacrimal duct obstruction and 5 patients had DNS obscuring the access to lacrimal sac area hence had to undergo concomitant septoplasty. On follow up of 1 week, 1 month and 3 months the success rate between both the groups were found to be similar [Table 2 and 3] [Figure 2 and 3].

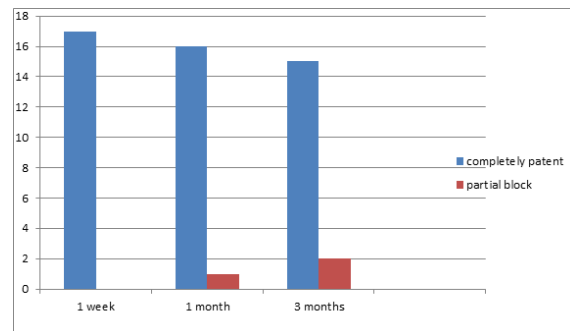


Figure 2: Patency Of Nasolacrimal Fistula In Only Endo Dcr Cases

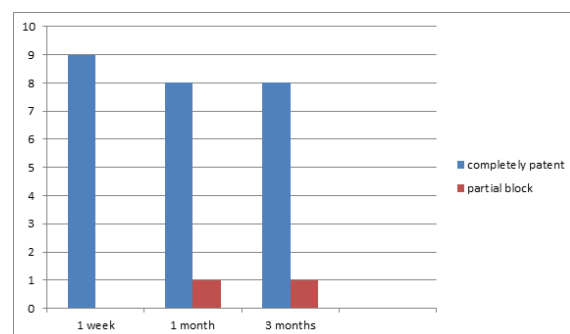


Figure 3: patency of nasolacrimal fistula in endo dcr with septoplasty cases

Table 1: Demographic data for all patients included in the study

		Endoscopic DCR without septoplasty	Endoscopic DCR with septoplasty	Total
AGE (Mean + SD*)		36.82 + 13.89	31.44 + 8.63	34.96 + 11.61
Gender	Male	6(35.29)	4(44.44)	10(38.46)
	Female	11(64.70)	5(55.55)	16(61.54)
Right Dacryocystitis		4(23.53)	2(22.22)	6(23.07)
Left Dacryocystitis		13(76.47)	7(77.77)	20(76.92)

*SD-Standard Deviation

Table 2: patency of nasolacrimal fistula in only endo DCR cases

	1 week	1 month	3 months
Completely patent	17(100)	16(94.12)	15(88.24)
Partial block	0	01(5.88)	02(11.76)

Table 3: patency of nasolacrimal fistula in endo DCR with septoplasty cases

	1 week	1 month	3 months
Completely patent	09(100)	08(88.89)	08(88.89)
Partial block	00	01(11.11)	01(11.11)

DISCUSSION

Chronic dacryocystitis is one of the commonest causes of chronic excessive tearing. External DCR

was the standard surgical procedure for chronic dacryocystitis for most of the years in the 20th century. But external DCR has failure rate ranging from 3 to 15%.^[4] After the advances in the nasal

endoscopic surgeries, endonasal endoscopic DCR gained more popularity. Endoscopic DCR avoids external incision, hence avoids the scar. It preserves the pumping action of the orbicularis oculi muscle. It can be performed in active infection of the lacrimal sac, which is a relative contraindication for external DCR. It is particularly useful in the revision of the external DCR as it avoids another external incision and subsequent further scarring.^[5] Endoscopic endonasal dacryocystorhinostomy (EN-DCR) is a modern and effective method for the surgical treatment of distal part obstruction of lacrimal pathway. Unsuccessful outcome and dacryocystitis relapses may be associated with concomitant rhinological pathology. Deviation of the nasal septum in the surgical area can affect the operation and contribute to stenosis. Additional correction of the nasal septum is necessary to obtain free surgical approach to the lacrimal sac. Endoscopic septoplasty provides high-quality surgical approach to the lateral wall of the nasal cavity.^[6] Our sample size and study period is less as compared to Karpishchenko SA et al study where 212 patients evaluated in a period of 5 years. The average age at the time of the operation was 34.96 years (Ranging 16- 65). Female preponderance with 16 out of 26 cases was seen same as Tal Koval et al,^[7] study. Umer et al,^[3] performed 256 endonasal non-laser endoscopic DCR between 1994 and 2002, out of which 55 cases (21.5%) required additional endonasal procedures. In our study out of 26 cases 9 cases required additional endonasal procedure. Figueira et al,^[8] reported a large series of 576 patients who underwent endo DCR, of whom 81 had concomitant endonasal procedures (septoplasty, turbinectomy, and polypectomy): the results were similar to those for the non-concomitant procedures, but there was no reference to septoplasty alone. D Deviprasad et al,^[9] study the Endoscopic assessment with lacrimal syringing, showed partial block of the nasolacrimal fistula in 2 cases (08%) at 3 months. Concomitant sinonasal surgeries had no negative influence on the outcome of endoscopic

DCR, as only one patient had partial block of the nasolacrimal fistula at the 3rd month follow-up, as did the patients who did not undergo any concomitant sinonasal surgeries and our results were comparable with this study.

CONCLUSION

Septoplasty will not alter the outcome of endonasal DCR but when done in cases of gross DNS which was hampering the access to the lacrimal sac area it aids in the endo DCR. Hence concomitant septoplasty should be done in indicated patients only and not a part of regular endonasal DCR. This study is limited due to the lesser sample size and shorter duration of study period.

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