

**Retrospective Study of Endoscopic Dacryocystorhinostomy under Local Anaesthesia with Sphenopalatine Block**V Sudhir Babu<sup>1</sup>, V Somashekhar<sup>2</sup>, Parvathi R<sup>3</sup><sup>1</sup>Professor & HOD, Department of ENT, GGH/GMC, Guntur<sup>2</sup>Assistant Professor, Department of ENT, GGH/GMC, Guntur<sup>3</sup>Post Graduate, Department of ENT, GGH/GMC, Guntur

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Corresponding Author: Dr. V Somashekhar

Conflict of interest: Nil

**Abstract:**

**Purpose:** Primary acquired Nasolacrimal duct obstruction is a common pathology in adults, the primary treatment being Dacryocystorhinostomy. The aim of this study is to evaluate the outcome and tolerability of Endoscopic endonasal DCR done under local anaesthesia.

**Method:** From June 2022 to January 2024, a total of 29 patients diagnosed with primary acquired NLD block underwent Endoscopic endonasal dacryocystorhinostomy under local anaesthesia. Anaesthetic was administered to nasal mucosal flap and lacrimal crest in addition to Sphenopalatine block to achieve local anaesthesia. NSAIDS were administered for pain relief post operatively. Intraoperative pain was evaluated based on visual analogue score.

**Results:** The mean intraoperative pain score was 0.79 and postoperative score was 0.96 for 29 patients.

**Conclusion:** Local anaesthesia with sphenopalatine block is an effective method to control intraoperative bleeding as well as intra op and post op pain in endo der.

**Keywords:** Dacryocystorhinostomy, Endoscopic Dacryocystorhinostomy, Sphenopalatine block in Endo Dcr.

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**Introduction**

Almost 70% of nasolacrimal system obstruction is due to anatomic while a minority (30%) is due to functional cause. Dacryocystorhinostomy is indicated when there is a symptomatic NLD block which is not relieved with syringing or probing.[1] A Toti first described external dacryocystorhinostomy in 1904. Since then, various techniques for endoscopic DCR have also been developed for which overall success rates are over 95 %. [2]

General anaesthesia (GA) is often preferred for endo DCR as pain is eliminated especially during creation of osteotomy. Owing to systemic complications of general anaesthesia and difficulty due to increased intraoperative and post-operative bleeding due to GA, various techniques of regional anaesthesia were developed which in addition to elimination of risks associated with GA, also allowed a shorter operation time and faster recovery.

Hamal et al. conducted a study on 100 patients within the age range of 13-41 years in which 51% patients had no pain during the procedure, 26.08% reported mild pain (3-4) and 20.65 patients reported moderate pain (5-6) on verbal rating scale [1]. In

the study by Hurwitz et al, it was observed that surgical goal was not compromised by performing the surgery in local anaesthesia [3]. Fanning, in his study in 2000 described multiple injection technique to block infratrochlear, anterior ethmoidal and infraorbital nerves along with infiltration of lateral nasal wall [4].

This study focuses on evaluating the effect of sphenopalatine block along with infiltration of lateral nasal wall in endoscopic endonasal dacryocystorhinostomy.

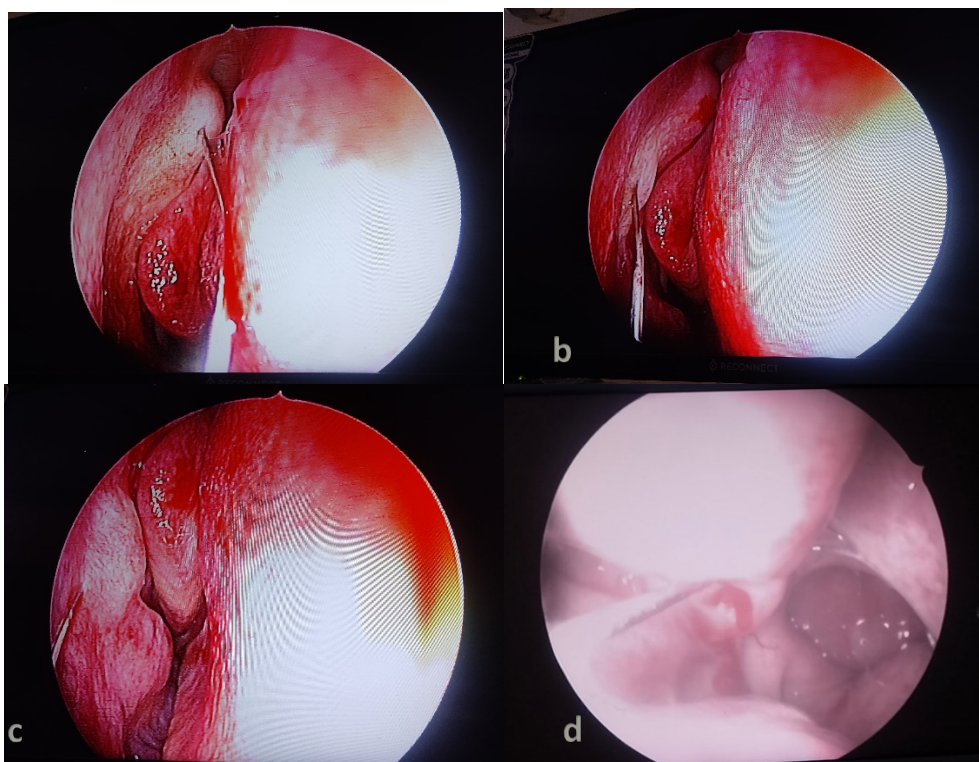
**Methods**

29 patients between age range of 35-72 years, presenting with epiphora were diagnosed with nasolacrimal duct obstruction and were treated with Endo DCR under local anaesthesia. The mean age of the patients was 48.3 years.

Patients were placed in leaning position (head end elevated to 30o) and intramuscular promethazine and pentaocin injections were given prior to the procedure. 4% lignocaine with adrenaline soaked gauze was used to pack the middle turbinate and nasal cavity for 15 minutes. After adequate decongestion of nasal cavity, local infiltration

(1% lignocaine mixed with 1:100000 Adrenaline) was given over axilla of middle turbinate, lacrimal

crest and immediately posterolateral to posterior end of middle turbinate.



**Figure 1: Infiltration given over (a) Axilla of middle turbinate (b), (c) Lacrimal crest and (d) sphenopalatine block**

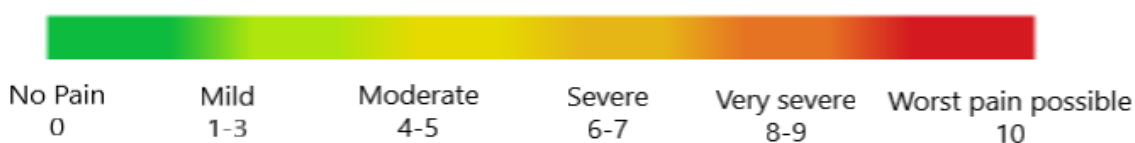
Incision was give over mucosa starting around 5mm above the axilla of middle turbinate and a posteriorly based flap elevated using Rosen circular knife. Nasal mucosa was elevated till junction between lacrimal crest and uncinat process. Kerrisons punch is used to remove the lacrimal crest and lacrimal sac is exposed.

After applying pressure on medial canthus, incision was given over the sac and extended superiorly and inferiorly. Horizontal incisions were given superior as well as inferior to the anterior and posterior lacrimal sac flaps to open like a book. The large anterior flap is reflected over lateral wall to cover the bare bone while posterior flap is reflected

posteriorly to cover the uncinat process. Mucosal flap was divided and placed above and below the osteum to cover the bare bone taking care not to cover the stoma created. The flaps were then stabilized using gelfoam. Post operatively patients were instructed to restrain from excessive physical activity, avoid blowing nose for 3 days and sleep with head end elevated. Moxifloxacin eye drops were applied 3 times a day for 2 weeks.

Post-operative pain was managed using oral NSAIDs. Syringing was performed on day 7 and then weekly for one month. Intraoperative pain score was assessed on day1 while post-operative pain score was assessed on post-operative day 7.

### VISUAL ANALOGUE SCALE



**Figure 2: Visual Analogue Scale used for assessment of pain score**

**Results**

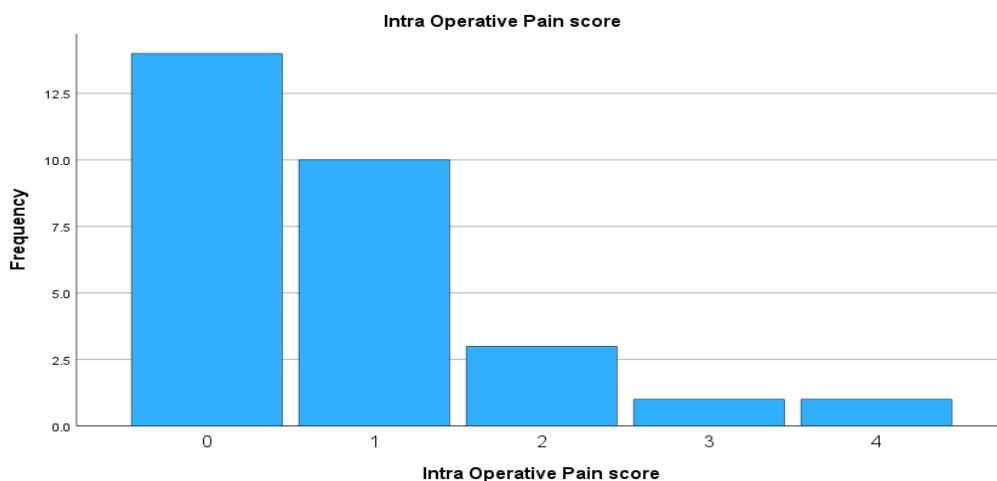
From June 2022 to January 2024, a total of 29 patients with epiphora were treated with endocr under local anaesthesia at Government general hospital, Guntur out of which 13 patients were males. Patients were aged between 35 to 72 years.

15 patients (51.72%) were older than 55 years and had systemic diseases which include Diabetes (4),

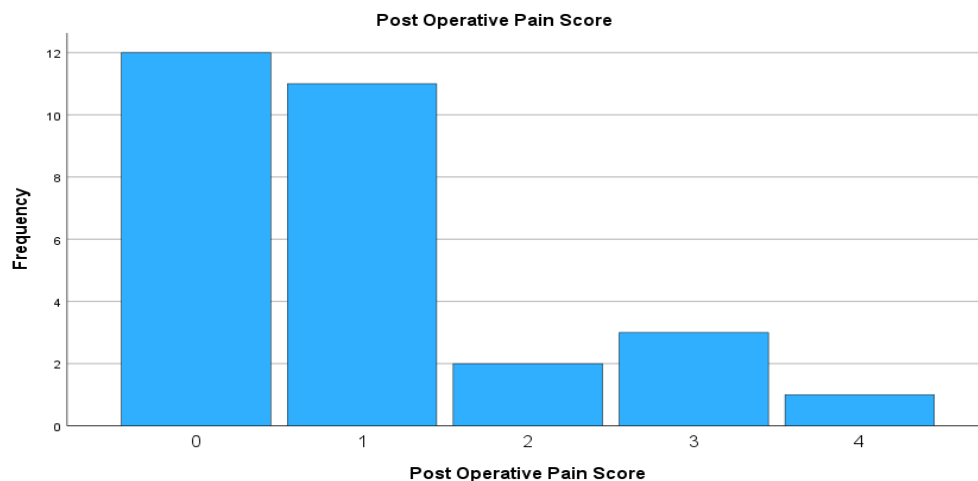
hypertension (10), deranged renal function (1). The use of local anaesthesia successfully controlled intraoperative pain and significantly reduced intraoperative bleed. Verbal feedback was taken during the procedure from the patient where in majority of the patients reported mild pain while removing lacrimal crest. On post-operative Day 1 and Day 7, intra op and post op pain score was assessed respectively.

**Table 1: Intraoperative and postoperative pain score**

Score	Intraoperative	Postoperative
0	14	12
1	10	11
2	3	2
3	1	3
4	1	1
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0



**Figure 3: Intraoperative pain score**



**Figure 4: Postoperative pain score**

Average score of intraoperative pain was  $0.79 \pm 1.013$  while that of post-operative score was  $0.96 \pm 1.117$ , allowing patients to prefer Endo DCR under LA again for the other eye. The intraoperative pain score was significantly lower than the mean post-operative pain score on a paired t-test ( $<0.001$ ) Surgical success, determined by subjective feedback of the patient as well as patency on syringing and DNE were followed up for 3 months. Rate of success was 93.1% (27/29). The cause for failure was granuloma formation (1) and lower canalicular obstruction (1). Post-operative complications include headache and nasal stuffiness which was resolved in one week and nasal bleed which subsided in 2 days' time.

### Discussion

General anaesthesia in patients with comorbidities causes significant intraoperative bleeding due to vasodilatation and venous engorgement. In patients with comorbidities, GA may be life threatening, requiring the presence of highly skilled anaesthetist and necessitating availability of an intensive care unit to manage severe complications.

When performed under LA with sphenopalatine block, there is relatively much lesser intraoperative bleed, thus giving a bloodless surgical field as compared to when done under GA. The life

threatening complications of general anaesthesia are also eliminated. Intra orbital posterior nasal influx is prevented by a posterior nasal packing and if present, airway aspiration is prevented by prompt suctioning.

### Conclusion

In conclusion, intraoperative bleed and post-operative pain is significantly less in Endo DCR done by giving sphenopalatine block.

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