

## Case Report

# Non-Endoscopic Endo-nasal Dacryocystorhinostomy in a Saddle shaped nose: A Case Report

Binita Bhattarai<sup>1</sup>, Koshal Shrestha<sup>1</sup>, Laxmi Devi Manandhar<sup>1</sup>  
<sup>1</sup>Lumbini Eye Institute and Research Centre, Bhairahawa, Nepal

### Abstract

**Introduction:** Non Endoscopic endo-nasal dacryocystorhinostomy retains the benefit of an Endo-nasal approach and can be done without using an expensive video endoscope or laser system.

**Case presentation:** A 22 years old female presented with epiphora and medial canthal mass in her left eye, accompanied by discharge and recurrent conjunctival congestion since childhood. Physical examination revealed loss of height of the nose with discharge in her left eye, and an immobile and non-tender mass below the level of medial canthal tendon. On applying pressure over the lesion there was mucopurulent discharge from both the upper and lower punctum. The bridge of the nose was very flat and external dacryocystectomy was a challenge. A non-endoscopic endo-nasal dacryocystorhinostomy with silicon tube intubation was planned. During the procedure, the bone was lower than normal requiring more bone nibbling. Epiphora was resolved immediately after surgery.

**Conclusion:** Non-Endoscopic endo-nasal dacryocystorhinostomy has the benefit of doing it through an endo-nasal approach without expensive and space consuming video-endoscope making more room for bone nibbling even in a narrow and deformed nasal cavity.

**Key words:** Dacryocystorhinostomy, Acquired Nasolacrimal Duct Obstruction, Non endoscopic endo-nasal dacryocystorhinostomy.

**Financial Interest:** Nil

**Conflict of Interest:** Nil

Received: 16.08.2020

Accepted: 28.12.2020

**Corresponding author**

Dr. Binita Bhattarai

Lumbini Eye Institute, Bhairahawa, Nepal

E-mail: bhattaraibinita28@gmail.com

**Access this article online**

Website: [www.nepjol.info/index.php/NEPJOPH](http://www.nepjol.info/index.php/NEPJOPH)

**DOI:** <https://doi.org/10.3126/nepjoph.v13i1.30663>

Copyright © 2021 Nepal Ophthalmic Society

ISSN: 2072-6805, E-ISSN: 2091-0320



This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND).

### Introduction

The standard procedure for acquired nasolacrimal duct obstruction (NLDO) is dacryocystorhinostomy (DCR). It is usually performed through a cutaneous incision, known as external DCR, or through a transnasal approach under either direct visualization or endoscopic guidance. (Ben Simon *et al.*, 2005) Non endoscopic endo-nasal DCR retains the benefit of an endo-nasal approach and can be done without using an expensive video endoscope or laser system. Non endoscopic endo-nasal DCR is a safe procedure with very few complications. (Singh *et al.*, 2004). External

scar is more common in young patients having flat nasal bridge or in those with dark skin thus making the endo-nasal approach more ideal for them. (Ozer and Ozer, 2014)

### Case Presentation

A 22 years old female presented with epiphora and medial canthal mass in her left eye, which was accompanied by discharge and recurrent conjunctival congestion since childhood. There was no history of trauma, surgery, or haemolacria. Physical examination showed a flat nasal bridge with discharge in her left eye, immobile and non-tender mass below the level of medial canthal tendon (Fig 1). On applying pressure over the lesion, there was mucopurulent discharge from both upper and lower punctum. The patient previously visited another eye hospital and was prescribed oral (cloxacillin and amoxicillin) and topical (ofloxacin) antibiotic eye drop with no improvement.

Patient preparation was done by injecting the nasal mucosa with Lignocaine with Adrenaline (1:80,000) and Bupivacaine Hydrochloride(0.5%) then the nasal cavity was packed with the solution.

The nasal cavity was very narrow and it was difficult to hold the speculum in place. On removing the nasal mucosa we noticed that the bony extension (nasal bone and frontal process of maxilla) was too low than normal, so the bone nibbling required nearly double the amount than that we would do for normal individuals. But we did not notice any nasal septum abnormalities. There was very minimal bleeding as compared to the external approach. The procedure was not that difficult as we thought it to be like. Since the nasal cavity was anomalous the nasal speculum was very difficult to hold in place and was extruded many times during procedure.

Once the retinal pipe was seen through the nose, irrigation through upper and lower punctum was done. Once patency was confirmed, silicon tube placement through upper and lower punctum was done. Silicon tube placement was a challenge as the nasal cavity was not normally oriented; it was very difficult using the nasal guard so we used the tip of the suction machine instead to retrieve it. Epiphora resolved immediately after the procedure.

Epiphora and discharge got resolved on examination on the first postoperative day. Patient was discharged with oral antibiotics (amoxicillin and cloxacillin), and topical drops (chloramphenicol and dexamethasone). The patient was asymptomatic in her first follow up at 2 weeks. We removed the silastic tube after 3 month. Lacrimal irrigation is free after the tube removal with no symptoms.



**Figure 1:** Showing the saddle shaped nose and prominent swelling in left medial canthal area.



**Figure 2:** Infiltrating the nasal mucosa with Lignocaine with Adrenalaine and Bupivacaine injection.



**Figure 4:** At the end of the procedure retinal light pipe seen through the nose.



**Figure 3:** 23 gauge retinal light pipe inserted for the light source.



**Figure 5:** At 3 months follow up after silastic tube removal. There is no apparent swelling and tear film height is normal

### Discussion

Dacryocystorhinostomy (DCR) is a procedure where the bone lying between the lacrimal sac and the nose is removed and an anastomosis is made between the medial wall of the sac and

nasal mucosa. (Rizvi *et al.*, 2011). External DCR has been the choice of surgical approach in the treatment of acquired NLDO till now. (Ozer and Ozer, 2014). Though the Endo-nasal approach was proposed in the late 1800s, this technique

was renewed only in 1990, by Massaro et al. He started using a transillumination target within the lacrimal sac that guides the placement of the osteotomy (Dolman, 2003). Endo-nasal DCR has similar long term successful outcomes making it a popular treatment modality over the years. (Ozer and Ozer, 2014). Endo-nasal DCR allows direct observation of intranasal pathology and direct access to the rhinostomy site. It also creates a small ostium. Decreased equipment cost, faster learning curve, and minimum invasion of nasal cavity are the advantages over endoscopic approach. (Walker et al., 2011) Advantages of Endo-nasal DCR over the external approach are faster recovery, less intraoperative bleeding, faster operative time, and there is no damage to orbicularis oculi muscle, pre-sac fibers, and medial canthal tendon thus pump function is preserved (Eloy et al., 2009). Few reported complication are failure of the intranasal rhinostomy opening, epistaxis, injury to orbit, corneal abrasion, canalicular damage, and sump syndrome (Ozer and Ozer, 2014) We did not encounter any such complications during the surgery there was very minimal bleeding. There are few case reports on Saddle nose deformity in Wegener's Granulomatosis. Most of them suggest an external approach to be the best modality of treatment (Anthony SL Kwan, 2000, Esben Nasser, 2013). However, our case was not a diagnosed case of Wegener's Granulomatosis but had saddle shaped nose; and we could successfully do Non-Endoscopic Endo-nasal DCR. So, Non Endoscopic Endo-nasal DCR can be the primary mode of treatment for the majority of cases with NLDO. The time required for both the procedures are the same or even less in cases of non- endoscopic approach (Harugop et al., 2008, Ganguly et al., 2016).

### Conclusion

Non- Endoscopic Endo-nasal DCR under direct visualization has minimal complications,

is cosmetically better and gives surgical results comparable to those of external DCR. It adds the benefit of doing through the Endo-nasal approach without expensive and space consuming video- endoscope making more room for procedure even in narrow and deformed nasal cavities.

### References

- Ben Simon, G. J. et al. (2005) 'External versus endoscopic dacryocystorhinostomy for acquired nasolacrimal duct obstruction in a tertiary referral center', *Ophthalmology*. Elsevier Inc., 112(8), pp. 1463–1468. doi: 10.1016/j.ophtha.2005.03.015.
- Dolman, P. (2003) 'Comparison of External Dacryocystorhinostomy with Nonlaser Endolaser Endo-nasal Dacryocystorhinostomy' *Ophthalmology*. Elsevier Inc., 110(1), pp. 78-84. Doi.org/10.1016/SO161-6420(02)01452-5
- Eloy, P. et al. (2009) 'Successful endonasal dacryocystorhinostomy in a patient with Wegener's granulomatosis', *Clinical Ophthalmology*. Dove Medical Press Ltd, 3(1), pp. 651–656. doi: 10.2147/opth.s5920.
- Ganguly, A. et al. (2016) 'Nonendoscopic endonasal dacryocystorhinostomy: Outcome in 134 eyes', *Indian Journal of Ophthalmology*. Medknow Publications, 64(3), p. 211. doi: 10.4103/0301-4738.181749.
- Harugop, A. S. et al. (2008) 'Endonasal dacryocystorhinostomy: A prospective study', *Indian Journal of Otolaryngology and Head and Neck Surgery*. Springer, 60(4), pp. 335–340. doi: 10.1007/s12070-008-0112-z.
- Kwan, A., Rose, G. (2000) 'Lacrimal drainage surgery in Wegener's Granulomatosis' *Br J Ophthalmol.*, 84, pp. 329-331. doi: 10.1136/bjo.84.3.329
- Nasser, E., Friis, P., Hanson, T., Naeser, K. (2013) ' External Dacryocystorhinostomy in Wegener's granulomatosis' *Acta*



*Ophthalmologica*,91,pp.776-778.doi:10.1111/j.1755-3768.2012.02530.x

Ozer, S. and Ozer, P.A. (2014) 'Endoscopic vs external dacryocystorhinostomy-comparison from the patients' aspect.', *International journal of ophthalmology*. Press of International Journal of Ophthalmology, 7(4), pp. 689–68996. doi: 10.3980/j.issn.2222-3959.2014.04.20.

Rizvi, S. A. R. *et al.* (2011) 'Management of Traumatic Dacryocystitis and Failed Dacryocystorhinostomy Using Silicone Lacrimal Intubation Set', *Indian Journal of Otolaryngology and Head and Neck Surgery*.

Springer India, 63(3), pp. 264–268. doi: 10.1007/s12070-011-0230-x.

Singh, M. *et al.* (2004) 'Intranasal endoscopic DCR (END-DCR) in cases of dacryocystitis', *Indian Journal of Otolaryngology and Head and Neck Surgery*. Springer, 56(3), pp. 177–183. doi: 10.1007/BF02974345.

Walker, R. *et al.* (2011) 'Comparison of Non Laser Non Endoscopic Endonasal Dacryocystorhinostomy with external Dacryocystorhinostomy' *CAN J OPHTHALMOL*, 46(2), pp. 191- 195. Doi:10.3129/i10-096.