

NESOS E-MAG

Volume 1, No. 1, Jan-Jun, 2021

*“The
Highway
of
Tears”*



an Official biannual
e-Magazine by:





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NESOS e-Mag is the official biannual electronic magazine of the Nepalese Society for Oculoplastic Surgeons (NESOS). This e-Magazine will be a concoction of scientific publications such as articles, reviews, opinions, tips and tricks, interesting cases, and out-of-the-track contents like interviews of eminent Nepalese oculoplastic surgeons, success stories, photo gallery and oculoplastic news.

The aim of the e-Magazine is to provide a platform for the oculoplastic surgeons from Nepal and abroad to discuss and engage on topics related to orbit, ophthalmic plastic and reconstructive surgeries, oculofacial aesthetics and ophthalmic oncology. This will also provide a platform for young oculoplastic surgeons and aspirants to learn from the experienced ones in the field. The e-Magazine also aims to disseminate important information and messages regarding the NESOS activities including the news and events.

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Courtesy Ben Limbu, MD

Bilateral Simultaneous DCT: A sacrifice to restore vision in a 87 years elderly blind patient due to cataract during COVID Pandemic. Lacrimal sac demonstrating inner lining of sac with common enlarged canalicular opening

MESSAGE : FROM THE PRESIDENT OF NESOS

I would like to congratulate the NESOS e mag team for the successful launch of its maiden issue.

Dacryology has grown as a separate entity in Oculoplasty in recent years. Different surgeries dedicated to the lacrimal system have always intrigued Oculoplastic surgeons and general ophthalmologists alike. This issue dedicated to dacryology with the theme of “the highway of tears” has been justified by the writers. I am glad to see renowned Oculoplastic surgeons like Milind Naik and Kakizaki contribute to the first issue. Research, opinions and teaching learning process should always go hand in hand with clinical practice.

I believe NESOS emag will be a sustainable, permanent platform for Oculoplastic surgeons and enthusiasts to share and learn their knowledge and experience.

My best wishes to the editorial team.



BEN LIMBU, MD
President
*Nepalese Society for
Oculoplastic Surgeon*

EDITORIAL

It is with profound pleasure and anticipation that we celebrate the launch of the maiden issue of “NESOS e-Mag”: an official biannual e-Magazine of the Nepalese Society for Oculoplastic Surgeons (NESOS). The objective behind the introduction of the e-Mag is to provide an ideal forum for exchange of information on oculoplasty through research papers, reviews, case study/ series, reports on promising developments, practice articles written by prominent oculoplasty surgeons/ experts, tutorials on newer technical breakthrough, etc.

The theme for this issue is “The highway of Tears” which signifies the lacrimal drainage system. As it is evident, lacrimal drainage pathway disorders result in a myriad of ocular problems ranging from persistent watering and discharge to corneal ulcer and blindness! In fact, dacryocystitis, if severe and untreated may lead to orbital cellulitis and complications arising thereof may even lead to the loss of life! Besides, lacrimal problems need to be addressed before any ocular surgeries can be performed to avoid postoperative infections such as sight threatening endophthalmitis. Thus, this seemingly small issue of disorder in the lacrimal drainage system may have serious sight and life threatening consequences! Hence, this e-Magazine hopes the readers regarding importance and the ugly eventuality of the ostensibly naïve blockage of “the highway of tears”!

This issue is a concoction of original articles, reviews, opinions, tips and tricks, interviews and much more interesting stuff as you would expect from a magazine. Articles from Prof. Milind Naik (India) and Prof. Hirohiko Kakizaki (Japan) have certainly added essence to this issue. As the founder president of NESOS and an ever supportive senior colleague, we decided to have a heart to heart talk with Professor Dr Rohit Saiju which we hope will be an interesting and insightful read to our readers.

We appreciate the efforts of all the members of the NESOS executive committee, our esteemed authors, designers, and the sponsors for the tremendous support. Feedbacks and suggestions are always welcome. You can contact us at nesosemag@gmail.com.

Hope you have a happy reading.



Jyoti B Shrestha, MD
Editor-in-Chief
NESOS e-Mag

Bloodless External Dacryocystorhinostomy: TIPS AND TRICKS

Srujana Laghmisetty, MD, Milind N Naik, MD

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ABSTRACT

Dacryocystorhinostomy (DCR) is one of the commonest surgical procedures performed by Ophthalmologists and Oculoplastic surgeons. Bleeding during DCR surgery can affect visualization and the surgical outcomes. It also can demotivate a budding ophthalmologist from choosing a career in Oculoplasty. Performing a bloodless DCR is simple to achieve. This article highlights simple steps to perform an external DCR, and the ways to minimize blood loss during the procedure.

INTRODUCTION

A bloodless surgical field during an external DCR surgery is any oculoplastic surgeon's dream. Efforts to minimize blood loss during DCR surgery are highly rewarding. For optimum surgical outcome the surgeon should make an effort to maintain adequate blood flow to the tissue and at the same time should try to avoid excessive blood loss. In this article we will discuss various tips and tricks to perform an almost bloodless external DCR surgery.

PREOPERATIVE ASSESSMENT

Patients with hypertension can bleed more, hence adequate con-

trol of blood pressure helps minimize blood loss. Patients who are on blood thinners like Aspirin, Clopidogrel need to discontinue these medications well before the proposed surgery date as per physician's advice.

Before taking up the patient for DCR presence of any bleeding or coagulation disorder needs to be ruled out. Investigations to look for bleeding time, clotting time and prothrombin time is important. In known cases of bleeding disorders adequate backup measures like reserving coagulation factors/ whole blood / blood products should be undertaken. Have the backup of an anesthesia team to help deal with any intra-opera-

tive emergencies in special cases.

SURGICAL STEPS: Nasal packing:

Preparing the nasal mucosa is another important step to perform a bloodless DCR. Nasal mucosa is one of the most vascular tissues in the human body. Attaining adequate vasoconstriction and blanching the mucosa minimizes bleeding. This can be achieved by spraying the nasal mucosa with 10% lignocaine 1-2 puffs followed by packing the nasal cavity with 4% lignocaine and 0.5% xylometazoline soaked gauze. Alternatively topical lignocaine spray along with topical xylometazoline can be used without packing the nasal cavity.

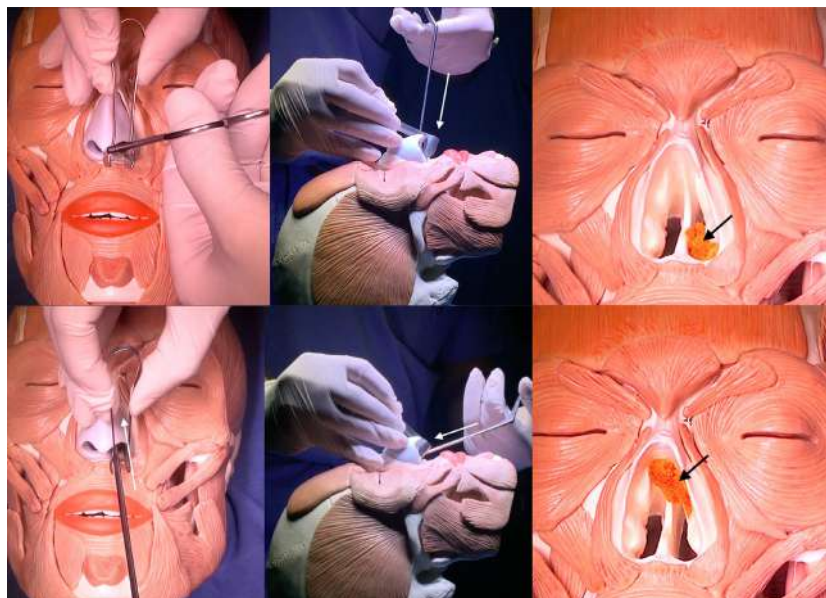


Figure 1: Nasal packing technique. Top panel shows the wrong technique, where the roller gauze is inserted vertically. Note that the pack lies in inferior meatus (arrow), away from the location of DCR ostium. The correct technique is to direct it upwards, towards the medial canthus (lower panel), where it currently lodges in front of the root of middle turbinate.

The technique of packing is important, when performed with a roller gauze. The correct method of packing is to direct the roller gauze upwards towards the medial canthus, rather than posteriorly (Figure 1). This ensures that the part of the lateral nasal wall just anterior to the root of the middle turbinate (area of the DCR ostium) receives the adrenaline well.

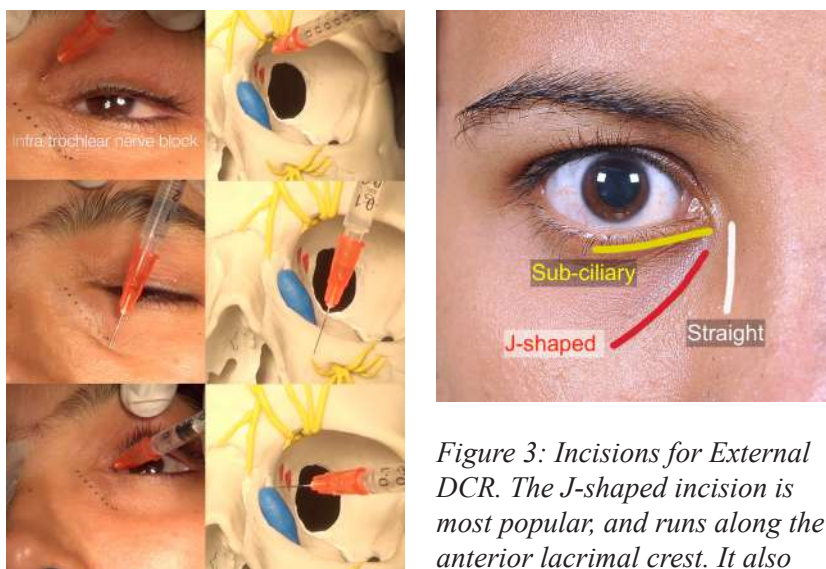


Figure 2: Nerve blocks for External DCR surgery. Intra-trochlear nerve block is given between the two palpable landmarks: medial canthal tendon, and the trochlea (top panel). Infraorbital nerve block is given after palpating the infraorbital foramen, and centered slightly medially to target medial branches (middle panel). Anterior ethmoidal nerve can be easily blocked trans-caruncular, directing the needle tip towards posterior lacrimal crest (bottom panel).

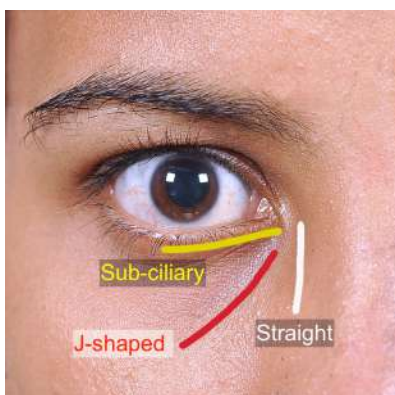


Figure 3: Incisions for External DCR. The J-shaped incision is most popular, and runs along the anterior lacrimal crest. It also is the least aesthetic one, and can cause webbing of the scar. The straight incision is placed more medially, is cosmetically superior, but can be bothered by the spectacle nose-pad. The sub-ciliary incision is technically difficult, requires practice, but gives the best camouflage for the scar.

Local anesthesia

The infiltration anaesthesia can contain a short acting and long acting local anesthetic along with a vasoconstrictor agent like adrenaline to have a bloodless surgical field. A preparation commonly used is a combination of 2 % lignocaine with 0.5% Bupivacaine with or without adrenaline. The nerves to be blocked include the infra-trochlear, the infra-orbital (medial branches), and the anterior ethmoidal (Figure 2). In addition, local infiltration along the anterior lacrimal crest helps.

Incision

The incision can be planned as per the need of the patient. There are three possible skin incisions

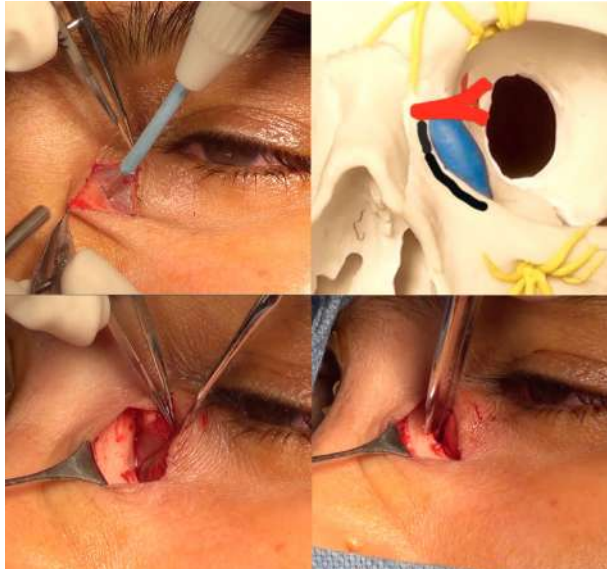


Figure 4: Exposing the lacrimal sac. J-shaped incision is extended deeper with monopolar radiofrequency cautery (top left). Periosteal incision just along the anterior lacrimal crest (top right). Exposure of the lacrimal fossa by retracting the sac laterally (bottom left), Bone punching begins at the junction of frontal process of maxilla, and lacrimal bone (bottom right).

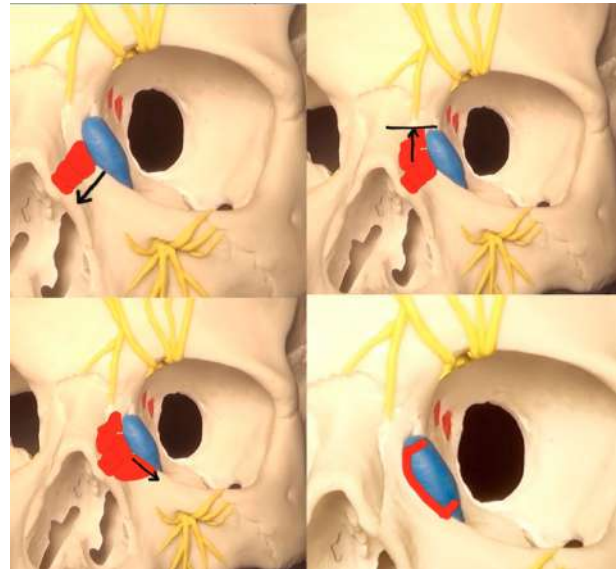


Figure 5: Extent of the bony ostium. Anteriorly, the ostium can extend 10-12mm anterior to the anterior lacrimal crest (top left). Superiorly, the medial canthal tendon can be the limit (top right). Inferiorly, the ostium can extend upto the sac-nasolacrimal duct junction. Anterior flap of the lacrimal sac created by one vertical, and two horizontal incisions (bottom right).

in external DCR surgery (Figure 3). The classic J-shaped incision is marked along the anterior lacrimal crest. A more vertical incision medially is cosmetically superior, but may come under the nose-pad of most spectacles. The best cosmetic external incision is sub-ciliary, and has been published earlier.

Exposure of lacrimal sac and fossa

After the skin incision (J-shaped in this case), a layered approach should be followed in the direction of the anterior lacrimal crest (ALC). The orbicularis fibres can be separated either by a monopolar cautery (Figure 4a), or by blunt dissection with a Q-tip. Angular vessels and their branches are encountered in this region and can

be separately coagulated. Monopolar radiofrequency cautery is the author's choice, as it coagulates small vessels while cutting the tissues. If required, cotton pellets dipped in dilute adrenaline can also be used during this step to obtain a bloodless surgical field. A well powered suction apparatus with appropriately sized metal suction tips will help in keeping a clean surgical field.

Once the ALC is reached, a periosteal incision is placed 1-2mm away from the sac, starting from the medial canthal tendon, extending down for 12-15mm along the ALC (Figure 4b). The periosteum is lifted off the bone as one enters the lacrimal fossa (Figure 4c). Any bony perforator/bleeder at this stage is promptly identified

and cauterized.

Creation of the bony ostium

The lacrimal fossa is exposed upto the maxillary-lacrimal suture (identified as a junction of white and blue bone). This is where the ostium creation begins. Kerrison bone punch is then inserted to make the first bone punch at this suture line. At the onset of this step, there is always a concern about accidental punching of nasal mucosa. Options to minimize this complication include removal of nasal pack at this step, and gentle insertion of Kerrison punch. The size of the ostium determines the success rate, and therefore it is important to create a large ostium. The extent of the ostium is explained in Figure 5. Sometimes one may encounter bleeding from

the bony edges. Manual pressure, broad-tipped monopolar cautery, or minimal bone wax can help.

Creating flaps and anastomosis

Bleeding is commonly encountered while making nasal mucosal flaps owing to the highly vascular nature of nasal mucosa. Infiltrating the nasal mucosa with lignocaine and adrenaline mix will blanch the mucosa making it a bloodless and pain-free procedure (Figure 6a).

Distending the lacrimal sac with fluorescein-impregnated viscoelastic helps create a sac flap.

A vertical incision is first placed along the length of the sac, as far posteriorly as possible (to create an anterior flap). At either end of

this incision, a horizontal incision is to be placed to create anterior flap (Figure 6c). Passing a probe to ensure its visibility within the sac lumen confirms anterior flap creation. A similar anterior nasal mucosal flap is raised, as a mirror image (Figure 6d). Bleeding from the cut mucosal edges is usually temporary, but if in excess, can be controlled with gentle surgical packing. If Mitomycin C is planned (recommended), Q-tips soaked in it can be placed at this stage for the desired duration of time (Figure 7a). Similarly, if intubation is planned (for canalicular pathology), it can be done prior to flap suturing.

Closure

The sac flaps are approximated, excess if any is trimmed, and they

are sutured with 2-3 interrupted 6-0 Vicryl sutures (Figure 7b). Orbicularis fibers can be approximated or left alone, and skin incision is closed (Figure 7c,d).

Postoperative care

Nasal packing with roller gauze soaked in Betadine ointment, and dilute oxymetazoline will help prevent nasal bleeding. Deep packing should be avoided to prevent inadvertent damage to the anastomosis. Topical antibiotic drops for 1-2 weeks,



Figure 6: Creation of flaps. The nasal mucosa is blanching with local anaesthetic to minimize bleeding and improve patient comfort (top left). Anterior lacrimal sac flap is then created by incising the sac as posteriorly as possible (top right). Sac flap creation is confirmed by passing a probe from the upper canaliculus (bottom left). Anterior nasal mucosal flap is then created (bottom right).



Figure 7: Wound closure. Mitomycin-C pledgets can be placed prior to flap suturing (top left). Flaps are checked for excess/laxity, and after trimming the excess, are sutured by 2-3 6-0 Vicryl sutures (top right). Orbicularis and skin is then closed separately (bottom left and right).

CONCLUSION

In order to perform a DCR with minimal blood loss, a surgeon should have a good knowledge of anatomy, and proper preoperative evaluation of the patient for potential bleeding causes. And one should be equipped with a well powered suction, a monopolar cautery machine and topical hemostatic agent. With good preparation, the surgery is uneventful, and a delight to watch!

Suggested reading:

1. Ali MJ, Naik MN, Honavar SG. External dacryocystorhinostomy: Tips and tricks. *Oman J Ophthalmol* 2012;5:191-5.
2. Jane M. Olver (2005) Tips on How to Avoid the DCR Scar, *Orbit*, 24:2, 63-66
3. Hart R.H., Powrie S., Rose G.E. (2006) Primary External Dacryocystorhinostomy. In: Cohen A.J., Mercandetti M., Brazzo B.G. (eds) *The Lacrimal System*. Springer, New York, NY
4. Dave TV, Javed Ali M, Sravani P, Naik MN. Subciliary incision for external dacryocystorhinostomy. *Ophthalmic Plast Reconstr Surg*. 2012 Sep-Oct;28(5):341-5.

Anatomical Considerations for Successful External DCR Surgery: A Review

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ABSTRACT

Dacryocystorhinostomy (DCR) has various surgical success rates being reported in the literature, and osteotomy size and position are the most important factors influencing the surgical outcomes of DCR. For increasing the success rate of DCR a proper understanding of the updated relevant anatomy is necessary along with making a bony window as far as the common canalicular orifice is completely exposed. External dacryocystorhinostomy (ex-DCR) is considered as a gold standard procedure for treating nasolacrimal duct obstruction, with success rates of more than 90%. Hence, in this review article we present the various updated anatomical considerations for increasing the success rate of ex-DCR.

Keywords: *External dacryocystorhinostomy, nasolacrimal duct obstruction, common canalicular orifice, medial canthal tendon, osteotomy*

INTRODUCTION

The approach to external dacryocystorhinostomy (ex-DCR) was first mentioned in the literature by the Italian surgeon Toti, who described exposure of the sac via a small skin incision and absorption of that part of the sac adjacent to the canaliculi into the nasal cavity.¹ Later, Dupuy-Dutemps and Bourguet modified this technique, who recommended an edge-to-edge anastomosis between the lacrimal sac and the nasal mucosa (via flaps) over the bony margins of the formed ostium, hence, constructing an epithelium lined tract.²

Ex-DCR has been the gold standard procedure for most cases of lacrimal drainage obstruction, including distal canalicular obstruction, common canalicular obstruction, and nasolacrimal duct obstruction (NLDO).^{3,4} The success rates for DCR, whether performed externally or endonasally, range from 69.9%

to 100%, depending on many factors.^{5,6} Although endonasal DCR (en-DCR) has become more popular over the last decade, many oculoplastic surgeons still do external over en-DCR, reporting a higher success rate in the former.⁷ Also, the ex-DCR allows good exposure of the surgical area to accurately identify anatomical landmarks, allowing the surgeon to create a well-positioned osteotomy and formation of the mucosal anastomosis.⁸

Success in DCR surgery also depends on the condition of the mucosal anastomosis at the bony ostium.⁹⁻¹¹ Exposed bone marrow without mucosal lining results in granulation tissue formation, causing re-obstruction at the osteotomy site.^{9,10,12}

Common variations of this surgery include a transcutaneous external approach with anterior- and posterior-flap anastomosis (2-flap ex-DCR), 3-flap ex-DCR, 8-flap ex-DCR and an endonasal approach without mucosal flap (no-flap en-DCR)^{13,14} In this review article, we will be talking about the various updated anatomical considerations for the successful outcomes of ex-DCR surgery.

Anatomy of the Lacrimal Sac and Its Fossa

The lacrimal sac and the nasolacrimal duct are a continuous structure.¹⁵ The part of the sac superior to the medial canthal tendon (MCT) is called the fundus, which has a vertical length of 3–5 mm.¹⁵ The body of the sac lies inferior to the MCT with its length about 10 mm. The sac is lined by a stratified

columnar epithelium¹⁶ and contains goblet cells, cilia, and serous glands.¹⁷ Microvilli are found over the epithelial surface.^{18,19} Although the sac wall consists of a cavernous structure, it is fairly thin and less developed than that of the nasolacrimal duct.^{17,20} The lateral aspect of the sac wall is covered by a fascia, and its posterior portion consists of a common fascia with the Horner's muscle, which is called the "lacrima diaphragm".¹⁵

The lacrimal sac fossa comprises of the anterior frontal process of the maxillary bone and the posterior lacrimal bone.²¹ There are ridges anteriorly and posteriorly, which are called the anterior and posterior lacrimal crests (Figure 1), respectively.²² The superoinferior length of the lacrimal sac fossa is 12–15 mm, anteroposterior 4–9 mm, and the width 2–3 mm.^{21,23} The lacrimal sac fossa has a shorter anteroposterior length superiorly.^{24,25}

As the lacrimal bone is too thin with its thickness around 0.1 mm,²² an osteotomy is made from the lacrimal bone in both ex- and en-DCR. When a lacrimo-maxillary suture is situated

close to the posterior lacrimal crest, a surgeon occasionally feels difficulty to perform the osteotomy. However, it is better not to extend the osteotomy toward the ethmoid sinus to prevent bleeding from the ethmoid mucosa.²³

Anatomy of the Nasolacrimal Duct (NLD) and Canal

Anatomically, the "nasolacrimal duct" (mucosal portion) is the part inferior to the superior opening of the nasolacrimal canal (bony portion).¹⁵ The nasolacrimal canal is formed by the lacrimal bone superonasally, the inferior turbinate bone inferonasally, and the maxillary bone temporally.²² The nasolacrimal canal empties into the superior part of the inferior meatus. The NLD usually continues for several millimeters beneath the nasal mucosa after leaving its osseous channel^{20,26-28} and this part has a valve called the valve of Hasner (Figure 2).²³ The total length of the NLD is 15–18 mm and it is longer than its bony canal.²³ The shape of the NLD opening into inferior meatus are of 4 types: adhesive type (66%), sleeve-like type (14%), wide-open type (12%) and valve-like type (8%).²⁸

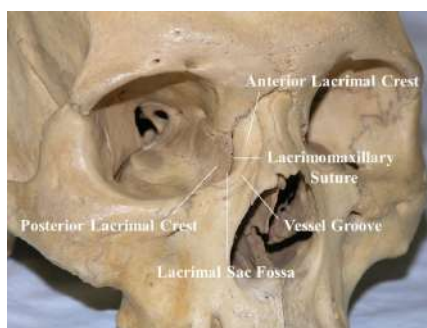


Figure 1. Anatomy of lacrimal sac fossa and its surroundings.

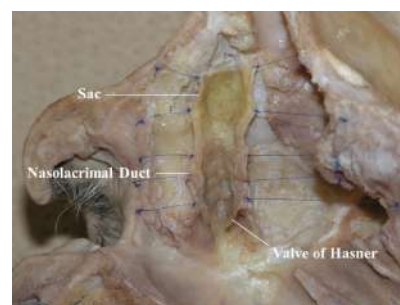


Figure 2. View of lacrimal sac, nasolacrimal duct and valve of Hasner on cadaveric dissection.

Anatomy of the Medial Canthal Tendon (MCT)

Classically, MCT is known to have two limbs, i.e., the anterior and posterior.¹⁵ Although many anatomists have worked on the anatomy of the MCT, we re-explored the anterior limb and found out that it consists of two lamellae, i.e., the anterior and posterior.²⁹ The anterior lamella is the tendon of the pretarsal part of the orbicularis oculi muscle (OOM) whereas the posterior lamella is the musculotendinous junction of the preseptal and orbital parts of the OOM.²⁹ A thick fibrous lacrimal diaphragm,¹⁵ namely, the common fascia between the lacrimal sac and Horner's muscle, was noted around the posterior lacrimal crest (Figure 3), which appeared to be continuous with Horner's muscle fascia and was indistinguishable from the muscle's tendon.²³ This thick, fibrous diaphragm, similar to Horner's muscle tendon, may have been regarded mistakenly as the posterior limb of the MCT.²⁸

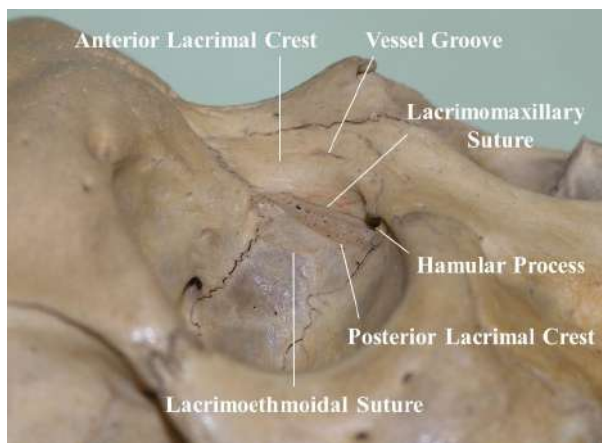


Figure 3. Important bony landmarks around the medial canthal tendon.

ANATOMICAL CONSIDERATIONS DURING EX-DCR SURGERY

DCR has various surgical success rates being reported in the literature, and osteotomy size and position are significant factors influencing the surgical outcomes of DCR.^{14,35-41} Success in DCR surgery also depends on the condition of the mucosal anastomosis at the bony ostium.⁹⁻¹¹ Occasional failures are also experienced because of various conditions such as untreated common canalicular obstruction, fibrosis of a small anastomosis, and obstruction of the bony window with new bone formation.⁴²

The size of the ostium has often been described as an important factor in determining the success in DCR surgery^{33,35,43,44} and creating a large osteotomy is one of the considerations for increasing the success rate for ex-DCR.⁴⁴ Theoretically, the created defect should be large enough to facilitate the flap anastomosis during the operation and maintain the long-term

opening, but be narrow enough to prevent any facial or medial canthal deformity. Such a defect can be referred to as a 'critical size bone defect', which does not heal spontaneously.⁴⁵ The study done by Argin et al. proposed creation of a 2×2 cm bone defect by detaching the anterior crus of the medial canthal tendon.⁴⁶ At the end of the procedure reinsertion of the anterior crus should be carried out to avoid the risk of a deformity, and to ensure there is no damage to orbicularis oculi pump function.⁴⁶

The absence of a posterior flap does not adversely affect surgical outcome in ex-DCR.^{9,14,47-49} On the other hand, the anterior, superior, and inferior portions were the most common sites of granulation tissue formation with the no-flap technique, and they

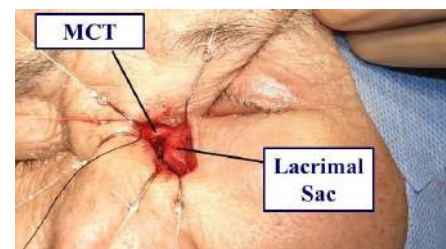


Figure 4. Intraoperative photo showing medial canthal tendon (MCT).

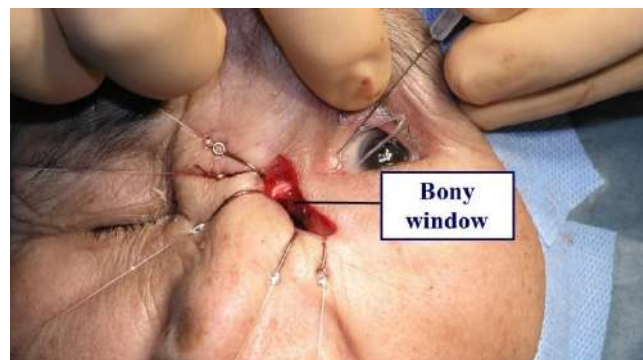


Figure 5. Intraoperative photo showing bony window up to the medial canthal tendon.

need to be completely covered with the mucosal flaps for successful outcome.¹⁴

During ex-DCR, some oculoplastic surgeons prefer to use the MCT as a reference of the superior limit of creation of the bony window (Figure 4),^{10,14,47,50} although this is not routinely practiced worldwide.

However, occasionally we encounter cases in which the common canalicular orifice (CCO) is not exposed after making the bony window up to the MCT (Figure 5).

The cadaveric study done by Vaidya et al.⁵¹ found out that the CCO was located above the lower edge of the MCT in 62 orbits (82.7%), which was in contrary to the previous notion of some oculoplastic surgeons that creation of the bony window superiorly up to the inferior margin of the MCT is sufficient in ex-DCR to completely expose the CCO.^{10,14,47,50} For this purpose, it is better to temporarily disinsert the MCT to remove the bone more superiorly during ex-DCR.^{48,52-55}

The studies done by Rootman et al.⁵⁵ and Welham and Wulc⁴² also tend to suggest that the position of the ostium is more critical than the size. Cerebrospinal fluid (CSF) leakage is one of the severe complications during DCR,⁵⁹ and some oculoplastic surgeons might be hesitant to go much above the MCT because of the risk of fracturing the cribriform plate (Figure 6) and causing CSF rhinorrhoea.

Normally, regarding the bound-

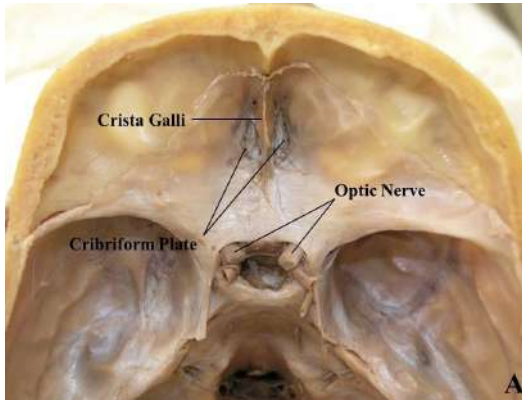


Figure 6. Appearance of the skull base showing cribriform plate, crista galli and optic nerve.

aries of the DCR ostium, the bone removal is recommended to extend superiorly to the lower margin of the MCT, inferiorly to the entrance of the bony nasolacrimal canal, anteriorly to the medial part of the vascular sulcus of the frontal process of the maxilla, and posteriorly to the posterior lacrimal crest.^{14,47} But, a previous study by Kumar et al.⁵⁶ recommends to extend the ostium at least 2–3 mm beyond the posterior edge of the sac in order to create a 5 mm border around the CCO.⁴² For increasing the success rate of DCR, there is a need to make a bony window as far as the CCO is completely exposed (Figure 7).^{11,43,51,57,58} Therefore, the bone removal superiorly till the level of around 3 mm above the

upper edge of the MCT can be safely done for complete exposure of the CCO without CSF leakage.^{51,60}



Figure 7. Complete exposure of common canalicular orifice (CCO).

CONCLUSION

A bony gap of an appropriate size and location, along with a technically correct anastomosis, are expected to lead to a long term anatomical and functional success in ex-DCR. The various anatomical considerations including the updated findings have been briefly presented in this review article, which will be helpful for performing a safe and successful ex-DCR surgery.

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Post-COVID Rhino Orbital Mucormycosis: A Case Report

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INTRODUCTION

The havoc of the COVID-19 pandemic seems to have no end with definitive treatment yet to be discovered till date. Although vaccination seems to be promising, prevention is still the best option. Numerous cases of COVID-19 pneumonia have been reported with secondary infections in around 10-30 % of the admitted cases, fungus being 10 times more common. [1] Drugs like corticosteroids which inhibit the inflammatory cascade, and reduce the progression to respiratory failure have been the mainstay for the management of moderate to severe COVID-19, but there are several downsides of steroid therapy such as diabetes mellitus, weight gain, and dizziness. [2] We describe a case of Rhino-Orbital mucormycosis in a 32 years old male teacher from Janakpur with recently diagnosed diabetes with acute interstitial pneumonia and COVID-19.

CASE DESCRIPTION

A 32-years male presented to the outpatient department of our hospital with complaints of decreased vision in left eye (LE), forward bulging of the LE and inability to move the eye. He was a known case of recently treated COVID-19 with oxygen therapy, steroids and Remdesivir for Interstitial pneumonia. He was also a known Diabetic presenting with Diabetic Ketoacidosis at the time of COVID-19 pneumonia diagnosis.

On ophthalmic examination, the visual Acuity in RE was 6/6 & LE

was 6/36 with no improvement on refraction. There was complete ophthalmoplegia and proptosis of the left eye. There was left sided nasal bleed with left nasal pain. Magnetic Resonance Imaging of the Brain/orbit/paranasal sinuses revealed sinusitis involving maxillary, ethmoid and sphenoid sinuses. Nasal swab for KOH mount microscopy from the inferior turbinate was suggestive of Mucormycosis. Functional Endoscopic sinus surgery and debridement of nasal turbinates was performed with biopsy for culture revealing Fungal culture - Rhizopus spp.



Ophthalmic management included Retrobulbar injection of liposomal Amphotericin B (1 ml= 3.5 mg), every alternate day till 5th dose. Further intervention was done by the ENT and Ophthalmology team which included FESS with Orbital decompression in Left side and nasal debridement only in the right side. Internal medicine team kept the patient on intensive insulin therapy for blood sugar control and IV Amphotericin B 300mg/day. Al-

per million person globally and fatality rate is 46 percent [3]. But if it involves orbit and intracranially, the fatality rate rises to 50-80 percent. [4] If the diagnosis and treatment is delayed by a week, the mortality rate doubles from 35 to 66 percent [3]. Even with early combined surgical and medical therapy, prognosis is very poor in mucormycosis. [4]

CONCLUSION

Timely diagnosis and appropriate multidisciplinary management involving Ophthalmologists, ENT surgeons, Physicians and neurosurgeons is the most important aspect of management of Rhino-orbital-cerebral mucormycosis patients.



though the patient lost his vision in LE, the patient responded well to the systemic therapy with the patient's life salvaged due to the multidisciplinary team approach.

DISCUSSION

Rhino orbital cerebral Mucormycosis [ROCM] is a rare, opportunistic, invasive, fatal infection caused by a filamentous fungus belonging to the order Rhizopus affecting immunosuppressed patients such as those suffering from diabetes mellitus, cancer, organ transplantation, leukemia, etc. It is rapidly fatal without an early diagnosis and treatment. Incidence of ROCM is 0.005-1.7

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TO DO or NOT TO DO: Non Endoscopic Endo Nasal DCR (NEENDCR)

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As ophthalmologists we have enjoyed this unique perspective by virtue of which majority of the time we have the privilege of direct observation of pathology and their management, whether in the form of surgery or otherwise.

Any time we have to deviate from this behaviour we are uncomfortable as we are so accustomed to visualization of ocular disease up front. For example, though the retina sits way back in the eye but still we are able to visualize it pretty easily and develop our initial management and diagnosis by direct observation. On the other hand those not trained in Orbital disease management tend to get baffled by the various pathological presentations where the disease is not quite apparent and you need a battery of tests to get to a provisional diagnosis and may require further interventional procedures before we can clinch the diagnosis. These ideas of simplicity may not sound appealing but that is the whole idea of NEENDCR, to simplify things and at the same time maintain the standard

of the procedure and surgical outcomes that are comparable to other procedures.

External DCR (EXDCR) is seen as the gold standard and still remains the most widely performed in Nepal. But we are not here to argue the advantages and disadvantages of EXDCR or for that matter Endoscopic ENDCR, because as far as Nepal is concerned, the fact remains that EXDCR is the preferred choice of surgery for Naso Lacrimal Duct Obstruction. There should always be a realization among young surgeons that we live in a country with limited resources, the issue is not the adoption of newer but appropriate technology that is most beneficial for our patients and can be implemented widely. No point in propounding a procedure that will be limited to few institutions in the country.



Figure 1. General OT set up for NEENDCR

Having said that, we still need to move ahead in our medical practice, and that is where the role of NEENDCR lies. It provides the option of a non expensive alternative to Endoscopic DCR that is cost effective, with the learning curve being shorter and less steep. Nevertheless work still needs to be done, of which the first and foremost is getting used to the nasal anatomy, you will literally have to work from the opposite end of what you were doing in EXDCR (Figure 1, 2). Furthermore one will need to swap ophthalmic instruments for ENT and Neurosurgical ones, hence will require some getting used to. I feel that these would be the primary hurdles for adopting NEENDCR, which is surgical anatomy and instrumentation.

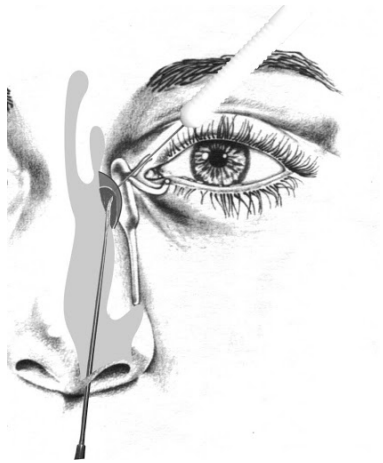


Figure 2a. Nasal mucosal opening



Figure 2b. Creating bony opening



Figure 2c. Fashioning Lacrimal sac flaps



It is not possible to describe all the steps of the procedure here, nor is it possible to discuss the pros and cons of NEENDCR. Those interested can look up the articles given below and other texts that are available. These articles not only deal with the steps of the surgery in detail, but shed light on our past experiences with NEENDCR, and also compare surgical outcomes with EXDCR (Figure 3: Surgical outcome NEENDCR).

Suggested reading:

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Figure 3a. Preoperative lacrimal abscess

Figure 3b. First post-operative day

Figure 3c. Two weeks post-operative

Non-Endoscopic Endonasal DCR (NEENDCR), The Learning Curve: My Experience

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Curiosity is the hunger of the human mind. My first posting was in Department of Oculoplasty as a new resident at Lumbini Eye Institute (LEI) nine years back. I was excited by the plethora of procedures performed in the department led by Dr Basanta Raj Sharma. He used to try alternatives of classic external DCR. After he left the institution, Curiosities brew within me as we were bound to do External DCR for all cases with no alternatives. My dreams materialized with the arrival of Dr Peter Dolman 5 years later, an expert on Non Endoscopic Endonasal DCR (NEENDCR), all the way from Vancouver. NEENDCR sounded fascinating and I was not sure if I could do it. Under Dr Peter's supervision we performed few cases every day. When he left after a week, he was confident that we could do it independently. We started doing NEENDCR gradually and since I was confident with external DCR, I could easily convert it if I couldn't complete it or if any complications happen midway.

We needed some additional instruments as a nasal speculum, a thin long needle, light source, retinal light pipe, a suction machine, head light, ethmoid forceps and sickle knife (Fig 1). We were lucky to have these instruments available in our hospital. To start with we should always stand opposite to the site we are operating

Xylocaine and 0.5% Bupivacaine injection is injected in nasal mucosa and nasal packing is done. We then keep nasal pack for five minutes. We can now do the scraping for the procedure. The light source is a retinal light pipe through upper canaliculi which is held in place by an artery forceps over the drape. This illuminates surgical



this makes the visibility good, but since we are right handed we can do it standing on right side too. With the help of headlight and nasal speculum for better view, 2 %

site and will guide the procedure. Nasal speculum is held in place for better access to surgical space. This is important for good visibility and passage of instruments.

We need a sickle knife to cut the nasal mucosa. It can be difficult as the site is distant from where we hold the handle and the cut can be small, misplaced or multiple and bleeding may occur leading to blurring. Once we cut the mucosa we hold it with ethmoid forceps and pull it out. For beginners the mucosa can slip from the forceps or the cutting may not be enough. After we remove the mucosa, the site will look brighter making us more comfortable with the field of surgery. Then we clean the site by suction. Once the surgical site is clean and we start nibbling the bone towards the light source. We can move the light source to confirm our site. The light pipe can be poked out from the bone deficient part. It should look brighter at the side of bone loss. We then free the sac site by nibbling 3-4 times that is less than what we do for external DCR. One should be careful not to break the retinal pipe while nibbling. The probe should be freely moving horizontally (straight to the canaliculi). Next step is cutting the sac. We make a prick at the point where the protrusion of retinal pipe is seen with sickle knife. The knife is inserted through the prick and whole length of the sac is cut. It was the

most difficult step for me as it was difficult to see the location of small prick. Once we find it, we cut the whole length with the sickle knife. Due to limited visibility, beginners tend to tent sac at different angle and repeat the procedure with multiple cuts. We can push the retinal pipe through and confirm that the sac is completely cut. Syringing both from upper and lower punctum will also confirm the complete opening of sac. Silastic tubes are intubated as in external DCR. We didn't encounter any problem during this step. In difficult cases with squeezing the nose, we can use the tip of metallic suction pipe to retrieve the silastic tube through nose. Initially the procedure takes longer time than for external DCR. We are used to doing external DCR working on bigger area, where anatomy is on display and our hand movements are free. Endonasal approach has a longer learning curve because the operating site is a bit distant and area is limited. It is very hard to hold the nasal speculum in place for uncooperative patients who keep squeezing their nose. The retinal light pipe is obscured even with slight bleeding making it difficult. Complete cutting of the sac can be missed sometimes

and can lead to failure later on. If we do not handle the instruments properly there can be bleed from medial turbinate.

With time and experience we will learn to deal with all minor difficulties. The same small surgical space will feel like enough to deal with. Cutting the sac will be clearer and complete. Wound healing will be faster as there will be limited manipulation, less bone nibbling and minimal injury to surrounding structures. We could do the procedure even in saddle shaped nose with success. No scar is an added bonus. With proper supervision and guidance, NEENDCR is a doable, cost effective and useful skill for all oculoplastic surgeons. I would like to thank my mentor Dr Peter Dolman and Seva Foundation for the opportunity.

“I could do it, so you can too.”

INTERVIEW

Heart to Heart with Prof Dr. Rohit Saiju

Founder President of Nepalese Society for Oculoplastic Surgeons (NESOS). Currently, he is the President of Nepal Ophthalmic Society (NOS). A great human being and a superb mentor to many of us.

Prerana Kansakar, MD
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Your work in Oculoplasty is exhilarating. What inspired you to take up Oculoplasty as a subspecialty?

It was never planned as such. I was inspired to become a Vitreo-Retinal surgeon initially. Things took a turn when a visiting SICS trainee, Dr Ivan Gan from Rotterdam Eye Institute, Netherlands, and I crossed paths. I got to witness many eyelid surgeries and new techniques that grabbed my attention; I learnt from him the levator resection procedure for ptosis correction. He was a good friend of well-known Dutch oculoplastic surgeon Dion Paridaens. At that point, Tilganga Eye Center was expanding subspecialty services and all complicated cases were being referred to TUTH. My mentor, Dr. Sanduk Ruit, offered me to pursue my career either in Oculoplasty or Neuro-Ophthalmology. I was always interested in

surgery and I wanted to do frontier job in a virgin land. Tilganga was in dire need of Oculoplasty services so I chose Oculoplasty and I am fortunate to be the first one year Fellowship trained Orbit and Oculoplastic Surgeon for the country. And since then there has been no looking back!

How has your journey as an Oculoplastic surgeon been?

I should say it's been rather luxurious. I was awarded a highly competitive and prestigious fellowship at the Royal Victorian Eye Hospital in Melbourne affiliated to Melbourne University. I

*“Mission to
establish
Oculoplasty in
Nepal”*



Prof Dr Rohit Saiju
Founder President
(NESOS)
President (NOS- Nepal
Ophthalmic Society)

had excellent mentors like Alan McNab who is so well known for his orbital skills and other teachers were Charles Su, Roger Davis, Peter Henderson and Mary Lastelmach who are pioneers in the field of lacrimal and endoscopic surgeries. On my return, I established an independent Orbit, Plastic and Lacrimal (OPAL) unit at Tilganga Eye Center in the year 2004. I gave my heart and soul to the department and with the belief that hard work pays off, I moved on. The more good work you do, the more appreciation you get hence you get more referrals! I used to see around 60-70 OPAL cases a day. And spending a day at OPD would yield enough surgical cases for the next 2 weeks so you can imagine the workload then. That's when I decided I need to build colleagues because it could not be done single handedly. Knowledge should always be shared and I've always aspired to be a good mentor. In the year 2006, we started short term training programs and in the earlier days, I trained a couple of surgeons from East Timor, Bangladesh and Nepal. Finally in 2008-2009 we started a structured Fellowship Program (Short and Long term). Our programs have been extremely successful because we have enough resources in terms of patient numbers with a wide variety of cases. My fellows hence get ample cases to work up and operate on. Oculoplasty is one such field where hands-on training is of utmost importance and



I am glad I have been able to provide that to them. I am very proud of the fact that many of my trained fellows are now prominent surgeons in NESOS and overseas.

Being an aesthetic

OUTSIDE THE BOX

SINGER YOU LOVE LISTENING TO?

Rahat Fateh Ali Khan/ Nusharat Fateh Ali Khan

FAVOURITE ACTOR/ACTRESS?

There are many. Some of them are Natalie Portman, Kevin Costner, Chiyaan Bikram

STRESS BUSTER?

Just sleep with soothing music

ROOTING ANY TEAM IN EURO 2020?

Italy

BEST DIET YOU CAN COOK AT HOME?

Kheer

HEALTH, WEALTH OR HAPPINESS?

Health and happiness, sometimes wealth

QUOTE YOU LIVE BY?

"You only live once, but if you do it right, once is enough" - Mae West

ANY HIDDEN TALENT PEOPLE DON'T KNOW ABOUT YOU?

I can predict the time of few hours after looking once at the watch
Pencil sketch

surgeon, how would you define beauty?

Beauty I believe is a feeling or perception. It's not just visual but begins from the soul. Beauty grows from a life of giving yourself to others, it is an attraction to those who value and seek it.

If not an Ophthalmologist, what would Rohit Saiju be?

Probably an Engineer! As a kid I was interested in making houses/ cars/ assembling things and I was pretty good in mathematics too. But god had different plans. My parents wanted me in the medical field and I enrolled at TUTH. I worked as a Health Assistant for a few years until I was awarded a government scholarship to pursue MBBS in Russia. I remember just 2 days after my return; I joined TUTH as a medical officer in the General Surgery department. There were no residency programs

then and with limited manpower we had very hectic duty schedules sometimes extending 36 hours and beyond!

How do you maintain a work-life balance?

Time management is crucial for work-life balance. As years pass by, responsibilities add up both in professional and personal life. My advice would be to divide time proportionately for family, work, social relations as well as leisure. We Nepalese are very hesitant to say no even in situations where we are not able to fulfill it. But once you learn to say “no”, you will be in comfort and become a happy person.

As a Founder President of Nepalese Society for Oculoplastic surgeons (NESOS), what are your dreams and expectations from this society?

My mission was to establish Oculoplasty in Nepal. It is indeed a proud and happy moment for me as I see NESOS flourishing the way I had imagined when we founded it back in July 2014. In Oct 2010, we organized the first National Oculoplastic meeting along with Nepal Ophthalmic Society. I was the Joint Secretary and the then president Dr. Jeevan Shrestha, encouraged me to promote our society at national and international level. With the help and support of international colleagues like Dr. Naresh Joshi, Dr. Garry Davis, Dr, A.K Grover, Dr. Kasturi Bhattacharya, we were able to conduct a successful meeting and promote our services in the international platform. Many young graduates fell in love with Oculoplasty after that and saw a future possibility in this field. Since then we've organized second and third National Oculoplasty Conferences in 2014 and 2017 respectively with renowned oculoplastic surgeons from all around the world. The aim of NESOS is not only

to protect and facilitate society members but to contribute in academics nationally/internationally. NESOS is one of the most active Nepalese societies in the Asia Pacific region and I could not be more proud!

What is the future of Oculoplasty in Nepal and your advice to junior colleagues?

Oculoplasty is a brilliant subspecialty in Ophthalmology with a bright future. Also it is the most diverse one ranging from orbit to lacrimal to eyelids to esthetics and reconstruction which connects many parts of the body like bone to brain or nose to the eye. It involves a lot of interdisciplinary work with maxillo-facial, plastics and neurosurgery team. It is an excellent subject if you love it and are passionate in this field. Like cataract surgery, we get instant results on table. DCR surgery I feel is the most rewarding surgery in Oculoplasty. There are many competent oculoplastic surgeons coming up in the country who are being trained by mentors from all around the world. If we work hard and love what we do, we will definitely go a long way. When you're able to get satisfaction and happiness from professional life, you will be happy and content in life!



Tips for Traumatic Canalicular Lacerations Repair

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1 Mechi Netralaya

2 Biratnagar Eye Hospital

Repair of canalicular injury, in itself, is a great challenge for any experienced oculoplastic surgeon, let alone for general ophthalmologist. Timely and meticulous repair of canalicular injury forms the basis for successful outcome.

One can experience a frustrating time while exploring an injured canaliculus especially when the injury occurs deep within the medial canthal complex close to the lacrimal sac. However, one can follow the following tips for successful outcome of canalicular laceration repair:

1. Always rule out multiple/occult injuries or other life-threatening problems

- Evaluate and confirm ABC (Airway, breathing and circulation).
- Perform a complete eye examination.
- For full-thickness eyelid injuries, be sure to check for globe perforation.

2. Try to preserve as much eyelid tissue as possible

- Save all eyelid tissue as much as possible, as high vascularity often allows for viable approximation.

3. Wound inspection, cleaning and documentation.

- Wounds should be copiously irrigated and explored, with removal of any foreign material.
- The presence of orbital fat raises the risk of deeper injury and foreign bodies.
- Photograph all preoperative injuries and immediate postoperative results.

4. Use of prophylactic antibiotics +/- Tetanus prophylaxis

- Based on attending physician's expertise and opinion, broad spectrum antibiotics can be used.
- Tetanus prophylaxis depending upon vaccination

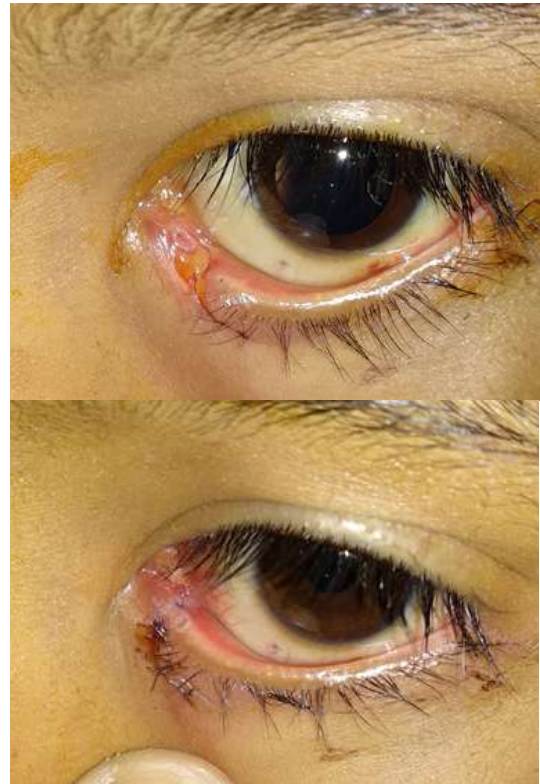


Figure 1. Canalicular injury repair with mini-monoka stent

status of the patient is advisable.

5. Check integrity of the tear outflow system.

- Blunt injury to the medial eyelid with resultant eyelid laceration almost always tears the canaliculus,
- In eyelid lacerations medial to the puncta, the canaliculi should be probed to assess integrity.

6. Identify severed canalicular ends

- Canalicular Injury! Injured distal canaliculus identification – An Enigma!

- Great mimicker! Canthal tendon fibers convincingly mimic the cut edge of the canalicular mucosa during exploration.

Few tips for identification of canalicular ends are:

- Magnified view under sur-



Figure 2. Left lower lid laceration with canthal injury pre and post repair

gical microscope with tilting of head increases the likelihood of finding the distal canaliculus .

- Avoid using an excess amount of local anesthetic infiltration. General anesthesia may be beneficial as no local anesthetic infiltration is used.
- Use cotton-tipped applicators for any exploration of the deeper soft tissue injury.
- Use of toothed forceps and retractors should be limited to skin retraction alone as their use during deeper soft tissue exploration results in further splaying and distortion of the medial canthal complex.
- Resist the temptation to pass a Bowman probe in an impatient and haphazard fashion into soft tissue that looks like it might be the canaliculus – May create false passage
- Severed canalicular ends

can also be found by injecting air, fluorescein-dyed hyaluronic acid or non-staining colored irrigant through the uninvolved canaliculus.

7. Repair injured canalicular ends using the canalicular stent in layers

8. Follow-up.

- Keep the canalicular stent for at least 6 weeks to 3 months. Always attempt stent repositioning in case of stent migration.



Figure 3. Left upper lid laceration with canalicular injury pre and post repair

(Picture Courtesy: Diwa Lamichhane, MD)

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“DCR on DCT” and lacrimal surgery practices during COVID-19 pandemic: An experience of an oculoplastic surgeon from a tertiary eye care center of eastern Nepal

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The Corona Virus Disease 2019 (COVID-19) which has rampaged the lives of many around the world through the first and second waves, and further counting, needs no introduction. More than 183 million infections and 3.9 million deaths worldwide speaks volumes (Worldometer, 2021). Nepal is 40th most affected country in the world with more than 64000 cases and 9100 deaths as of 30th June 2021 (Worldometer, 2021). This novel strain of the coronavirus has not only affected the lives of people worldwide but also severely affected the healthcare delivery system. Ophthalmic services, which are often non-life threatening, were mostly halted during the first national lockdown in Nepal. Like the mutations leading to change in the strains of coronavirus - since it was first isolated by Tyrell and Bynoe in 1966 - the healthcare service delivery system during COVID-19, specifically ophthalmic, has also

gone through several phases with new evidence redefining our practices at such times. This article intends to take the readers through this journey/ experience of an oculoplastic surgeon working at a high volume tertiary eye care centre at eastern region of Nepal regarding the lacrimal surgical practices during the COVID pandemic. The article also discusses the possibility of “DCR on DCT” being useful in such scenarios.

Ophthalmologists are at high risk of contracting coronavirus during routine ocular examinations such as slit lamp examination and direct ophthalmoscopy due to the proximity needed for examinations. Another mechanism could be contact through the ocular secretions during examinations. First doctor to die due to COVID was a 33-year young ophthalmologist, Dr Li Wenliang (12 October 1985- 7 February 2020) who worked at the Wuhan Cen-

tral Hospital of China, popularly known as the “Chinese whistleblower doctor”. Oculoplastic surgeons are at much higher risk due to the lacrimal procedures such as syringing & probing and Dacryocystorhinostomy surgery which directly exposes them to the nasal cavity, at a shorter distance and with chances of induced sneezing and coughing during the procedures. DCR has a further increased risk due to the long exposure time. (Kowalski LP et al, 2020)

Mechi Eye Hospital is a not-for-profit community-based eye hospital catering services to the needy patients of eastern region of Nepal and India (238,468 patients in OPD and 28,714 patients in OT in 2018). The COVID lockdown started in Nepal from March 24th, 2020, and the situation has not been better since then regarding lacrimal surgeries. This hospital has also been performing

huge volumes of lacrimal surgeries – 663 DCRs, 617 DCTs and 22 other lacrimal surgeries in a single calendar year. (Mechi Eye Hospital Annual Report, 2019). In the 15 months of the COVID era (1 April 2020 till 30 June 2021); only 148 cases of DCT and 121 cases of DCR were performed in the Mechi Eye Hospital which is on stark contrast to 771 DCT and 828 cases of DCR in the preceding 15 months before the COVID pandemic and lockdown (Mechi Eye Hospital Internal audit data).

The effect of COVID-19 and its consequences on lacrimal surgeries at Mechi Eye Hospital is shown below in figure 1.

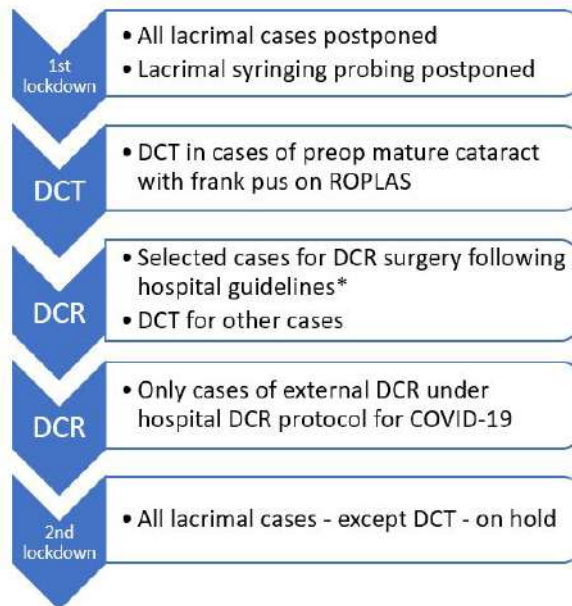


Figure 1. Timeline of consequences of COVID-19 in lacrimal practice at Mechi Eye Hospital

The problems created by the lack of evidence for restarting lacrimal surgeries led to delayed start of such surgeries at MEH. Notably, DCT was started earlier and promoted as an alternative to DCR in needful situations as there was no exposure to nasal cavity. However, this led to DCT in even earlier age group especially young adults, especially in sight threatening conditions. Based on the preliminary results of a lateral prospective study being conducted at Mechi Eye Hospital, the Mechi Eye Hospital DCR/ DCT on DCR Stusy (ME-DODS) (Pant AR, 2021), we started DCT now - DCR later protocol for even young adults with relative confidence. Whether this will be a

success or failure is yet to be seen with second wave coming very soon.

What is ME-DODS? DCR after DCT?

This is an ongoing prospective lateral study exploring the causes

of failed DCR at OT table and effect on outcomes after variations in revision DCR surgeries such as Silicone Tube, Flap recreation, Mitomycin use, etc. Interestingly, we also explored the outcomes of DCR after previous DCT in patients less than 60 years of age who were unsatisfied due to the persistent watering after DCT. The ‘DCR after DCT’ was a Toti’s surgery (no flap technique) modified with use of Mitomycin C (injected at remnant nasal mucosa circumosteally, total 0.4 ml of 0.04% MMC) followed by lacrimal intubation with Silicone tube removed after 3 months.

The finding till date regarding DCR after DCT has been promising. Out of 11 cases of repeat DCR over previous DCT who fulfilled the criteria for the study, all of them had anatomical success and 9 cases yielded functional success (81.81%) at 3 months of follow-up. ST was removed at 3 months. During the COVID pandemic, we performed ‘DCR on DCT’ in 2 cases. A complete success (anatomical and functional) was achieved on follow-up at 3 months when the tube was removed. A few others did not come for follow-up/ did not opt for second surgery probably due to the COVID restrictions being continued/ restarted.

To conclude, COVID-19 pandemic has severely affected the lacrimal surgical practices. Innovative techniques such as ‘DCR on DCT’ can be helpful in sight threatening cases with dacryocystitis or recurrent acute dacryocystitis where ‘DCT now – DCR later’ can be of huge importance considering

*DCR in adults during COVID-19 pandemic: Protocol of Mechi Eye Hospital:

Selection of cases - Only cases of ROPLAS positive (pus or mucopurulent). CC block and clear fluid on regurgitation were postponed.

1. Negative PCR test report for COVID-19 obtained within 48 hours before hospital admission for surgery.
2. The patient should gargle with Povidone-Iodine (PVP-I) 1% mouthwash (commercially available) for 5 minutes at ward before entering the OT.
3. Surgeon and assistant should wear the disposable gown and wear N95 masks, goggles, and face shield for the surgery.
4. Whole face to be painted with PVP-I 5%, once at preop room and again before OT, leaving for 5 minutes each time.
5. Use of 0.5% PVP-I (2ml 5% PVP-I added to 18 ml of NS in a 20ml syringe) at OT table for:
 - Soaking the nasal packing ribbon (dried before packing)
 - Preoperative lacrimal sac syringing
 - Preoperative use of PVP-I for drop-by-drop nasal irrigation through the externally visualized ribbon gauze tip (appx 0.5-1ml). Counsel the patients thoroughly.
6. If lacrimal intubation needs to be done, immediately place fresh ribbon gauze (as prepared previously) after intubation.
7. Avoid splashes of blood, syringe fluids, etc. Use suction as required. Counsel the patient to avoid coughing or sneezing and be calm.
8. COVID-19 precautions should be taken, and guidelines made by the hospital and local authorities should be always followed.

the lower risk of COVID in DCT compared to DCR.

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Endoscopic Endonasal Dacryocystorhinostomy Experience: A learning curve in the Eastern Nepal.

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ABSTRACT

Introduction: Dacryocystorhinostomy (DCR) is the treatment of choice for nasolacrimal duct obstruction (NLDO). While some studies have shown external DCR as the gold standard, many others have established comparable or greater success rates with endoscopic endonasal DCR (EEDCR). The study aimed to evaluate the surgical outcome of EEDCR surgery with tubes done by oculoplastic surgeons immediately after completion of the fellowship.

Methods: This is a retrospective, descriptive cross-sectional study conducted at a tertiary eye care centre from 2018 Jan- 2018 Dec after ethical approval from the ethical review board of the institute. All the patients diagnosed with primary acquired nasolacrimal duct (PANDO) who underwent EEDCR and completed 6 months' follow-up examinations were included whereas previously failed DCR, lacrimal fistula, acute dacryocystitis, severe nasal deviations, and failed to consent for the study were excluded. Data based on demographic profile, types of anaesthesia, intra and post-operative complications, duration of surgery were entered into customized data spread of Microsoft Excel 2016 and analyzed using statistical package for the social sciences (SPSS) version 19.

Results: A total of 200 eyes in 196 patients had undergone EEDCR. Of the total, 147 (73.5%) operations were done in females and 53 (26.5%) males. Out of the total, Ninety-four (47%) operations were done in the right eye, 102, (51%) left eye, and 4 (2%) both eyes. More than 80% of patients were adults, and the rest of the patients were paediatric. However, more than 80% of cases were operated under local anaesthesia (LA), only 4% of cases required general anaesthesia (GA), and 15% cases under assisted LA. Only 3% of cases encountered intra-operative complications and 4.5% of cases had post-operative complications. The overall success rate was 194/198 (98 %) and the failure rate 4/198 (2%).

Conclusions: EEDCR can be done under GA or LA depending on the surgeon's comfort level and the patient's choice. The success of Endonasal DCR entirely depends on the experience of the surgeon.

Keywords: DCR, Endoscopic Endonasal DCR, Nasolacrimal duct obstruction.

INTRODUCTION

Dacryocystorhinostomy (DCR) is the treatment of choice for nasolacrimal duct obstruction (NLDO). While some studies have shown external DCR as the gold standard, many others have established comparable or greater success rates with endoscopic endonasal DCR (EEDCR). [1] Although there are different surgical techniques, all create an anastomosis between the lacrimal sac & the nasal cavity through a bony ostium. The difference in techniques is whether one utilizes an intranasal or transcutaneous approach. [2]

EEDCR is a simple, less time-consuming, safe but skilful, scar-free, and highly satisfying surgery. There has not been any study on the surgical outcome of EEDCR for PANDO from Eastern Nepal to date. So we conducted this study to evaluate surgical outcome and complications of EENDCR surgery done by surgeons in the early stage of their career post-fellowship.

METHODOLOGY

In this retrospective cross-sectional study, all the consecutive cases diagnosed with PANDO who underwent EEDCR from January 2018 to December 2018 in one of the tertiary centres in eastern Nepal were reviewed. The study was conducted after ethical approval from the ethical review board of our institute and well-informed consent was taken from each participant. However, patients with acute dacryocystitis, previously failed DCR, lacrimal fistula, severely deviated nasal septum, failed to complete 6 months' fol-

low-up, and were not willing to participate were excluded from the study.

Surgical procedure- All the EEDCR were performed by two oculoplastic surgeons in our hospital using Karl Storz endoscope with a telescope of 4mm diameter. Marathon drill with diamond burr was used to smoothen the bony irregularities and remove the maxilla's hard frontal process. All the steps of endonasal endoscopic DCR are as shown in Figure 2.



Figure 1. Shows instruments used for endoscopic endonasal DCR surgery

local anaesthesia) as per decided, nasal mucosal flap preparation, osteotomy, opening the lacrimal sac, and intubation. Nasal packing was done with 4% Xylocaine

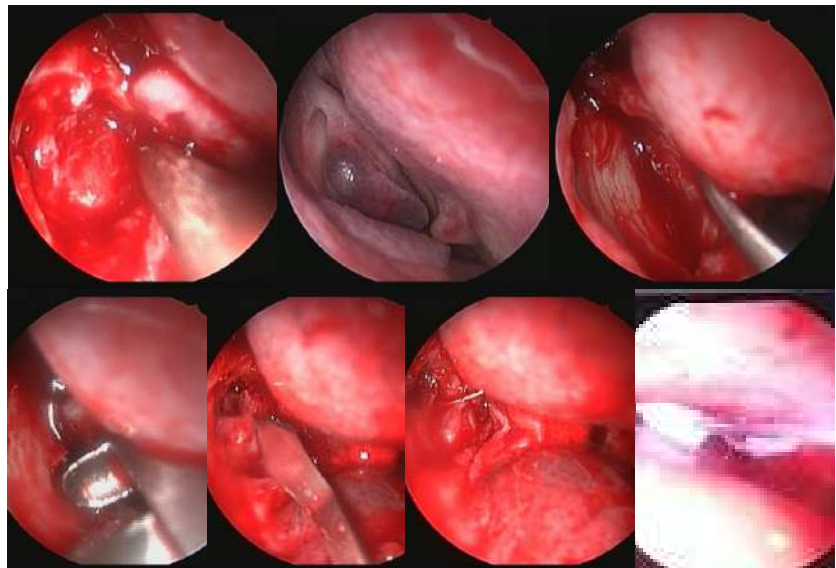


Figure 2. Shows the steps of endoscopic endonasal DCR surgery. After removal of nasal pack local anaesthesia, formation of nasal mucosal flap, osteotomy, making sac flap with crescent blade, intubation with Crawford's bicanalicular stent, placement of gelfoam and injection with triamcinolone diacetate at the end of surgery.

The procedure included anaesthesia (general, local, assisted

with Adrenaline 1:10000 IU for 30 minutes before surgery. Local anaesthesia was given with 2%

xylocaine, 0.5% bupivacaine with adrenaline 80,000 IU, and hyaluronidase for blocking the infraorbital, infra trochlear, and dorsal nasal nerve trans-cutaneous and anterior to axilla of the middle turbinate, above the inferior turbinate and over the nasal septum intranasal five minutes before the surgery. Assisted local anaesthesia was given with iv Pethidine 1mg/kg & Ondansetron 0.15 mg/kg. General anaesthesia was given with Pethidine 1mg/kg, propofol 2.5mg/kg, vecuronium 0.1mg/kg, and maintenance with isoflurane 1 MAC. Lacrimal irrigation was done to confirm the site of obstruction on the table.

The nasal mucosal flap was made 10 mm superior and 10 mm anterior to the middle turbinate and up to the junction of upper one-third and lower two-thirds of the inferior meatus. The flap was excised. Lacrimomaxillary suture was identified, cracked and bone punched with the Kerrison's rongeur exposing the whole of the lacrimal sac. The superior frontal process of the maxilla was removed by a drill when it was not possible with a rongeur. The lacrimal sac was incised vertically down extending from the fundus to the nasolacrimal duct after tenting by a Bowman's lacrimal probe. The anterior flap was excised. Crawford's double-armed intubation system was used to intubate the lacrimal system from the punctum to the nasal cavity. Gelfoam was put at the site of the ostium and 1cc of injection triamcinolone diacetate was injected. Nasal packing was done and was removed the next morning. Systemic antibiotic (Ampicillin

250mg and Cloxacillin 250mg), topical antibiotic with steroid (Ciprofloxacin 0.3% and dexamethasone 0.1%), analgesics (Paracetamol 325mg with Ibupro-

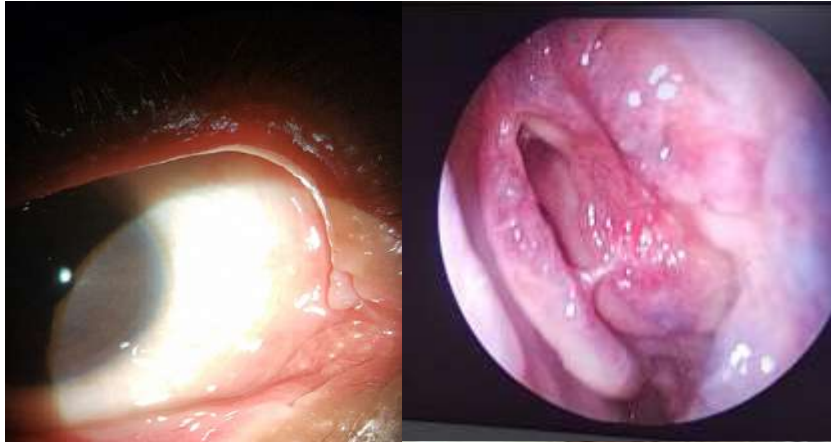


Figure 3. Shows canalicular laceration, nasal mucosal granuloma, punctal granuloma in upper punctum.

fen 400mg), nasal decongestant (Oxymetazoline Hydrochloride 0.05%) drops were advised with advice to review after 2 weeks, 1 month, 3 month then every 6 months. The Silicon tube was removed after 3 months. At each visit, slit lamp examination was done and syringing was only done when the patient complained of watering.

The surgical failure was defined as subjective complaint of watering and regurgitation of saline on lacrimal irrigation while surgical success was defined as no subjective complaint of watering and patent on irrigation. The duration of surgery from nasal mucosal incision to silastic intubation was recorded. The surgical success and failure rates were calculated.

Data based on demographic profile, types of anaesthesia, duration of surgery, intra and post-operative complications were collected in customized proforma in Mi-



crosoft Excel and analysed using statistical package for the social sciences (SPSS) version 19.

The surgically failed cases were evaluated endoscopically while performing revisional EEDCR and causes of failure were noted.

RESULTS

Two hundred eyes of 196 patients within the age range of 12-45 years of age had undergone EEDCR. Out of the total, 174 (87%) operations were performed on adults and 26 (13%) pediatric patients. More than two-thirds of operations were performed in fe-

males. Ninety-four (47%) surgeries performed in RE, 102 (51%) left eye, and (4, 2%) both eyes. Nearly 90% of cases were symptomatic for more than 6 months. The majority of operations were performed under LA 162(81%) followed by assisted LA 30(15%) and GA 8(4%). However, 6 (3%) cases encountered intraoperative bleeding and 2 were converted to external approach. Of the total, 9(4.5%) operations had post-operative complications that included bleeding in 6(3%), granuloma formation in 2(1%) and cheese wiring 1(0.5%) as shown in Figure 3. The overall success rate was 194/198(98%) and failure rate 4/198(2%). Most of the failed cases were female and the most common cause of failure was nasal mucosal fibrosis.

DISCUSSION

Endonasal DCR is much superior to external DCR. [3] We had 73.5% female eyes included in this study. Most NLDO patients are females so if we can do scar-free surgery will be a better option. [4] Females have significantly smaller dimensions within the lower nasolacrimal fossa and middle nasolacrimal duct. Hormonal changes that bring about a generalized de-epithelization in the body can cause the same within the lacrimal sac and duct. An already narrow lacrimal fossa in women can be obstructed by the sloughed-off debris. [5] In external DCR medial canthal ligament may be incised to approach the sac, the pumping system has interfered. [6] The circumferential orbicularis oculi muscle and the lacrimal muscle acting on the medial canthal ligament suf-

fer an external approach. In the external approach, the nasal side is not taken care of. Endoscopy helps to visualize the anatomy of the lateral wall of the nose that determines the anatomical variation of the sac helping in achieving near 100% success. In this study, there were 200 eyes of 196 patients within the age range of 12-45 years of age. One hundred and seventy-four (87%) patients were adults and 26, (13%) patients were of paediatric age group. There were 147, (73.5%) female patients and 53, (26.5%) male patients. According to many kinds of literature published most NLDO patients are females, and they prefer an external scar-free endoscopic endonasal DCR surgery having given the choice of Endoscopic endonasal or an External DCR. Females have significantly smaller dimensions within the lower nasolacrimal fossa and middle duct. Hormonal changes that bring about a generalized de-epithelization in the body can cause the same within the lacrimal sac and duct. An already narrow lacrimal fossa in women can be obstructed by the sloughed-off debris. [5] In this study, Crawford's silicon tubes were placed in all the eyes and that was removed after 3 months with a success rate of (194/198) 98 %. We had tube-related complications in 3 eyes. Punctal granuloma in two eyes each one with upper and lower punctum involved, canalicular laceration by tube in one eye. Routine use of stents is beneficial especially in cases of ENDSCR as it helps to maintain the patency of the internal ostium and keep the flaps of the lacrimal sac from sealing together. [7-10]

Studies reported that the placement of the tube increases the success rate. [11] Syed MI et al, 2013 [12], reported that they achieved a success rate of (31/33) 94% in END-DCR in which they used a silicone tube and a success rate of (25/30) 83% in END-DCR in which no silicone tube was used; however, this difference was not statistically significant. The removal of the silicone tubing earlier than 2 months had a positive effect on the success rate [13] There are also studies reporting that the granulation tissues around the tube depending on keeping the silicone tube for longer than 3 months are among the causes that increase failure.[14] Whether to preserve or not to preserve the mucosal flap of the lateral nasal wall over the lacrimal sac area has always become the topic of discussion. In this study, the nasal mucosal flap was removed. Ramakrishna et al, 2007[15] performed 27 Endoscopic DCR's in 20 patients without mucosal flap preservation. There was 100% anatomic success and 93%functional success. They concluded that mucosal preservation isn't essential to realize an honest success rate.

In our study, six (3%) had intraoperative complications that included bleeding in three cases. Two of them had to be converted to an external approach and one case needed a power drill. It is essential to remove the bone overlying the lacrimal sac until the entire medial wall and most of anterior wall of the lacrimal sac is visible to achieve a high success rate in Endoscopic DCR. [16] However, by using a Kerrison punch

one can achieve this with ease just like in our technique, helping us to achieve a high success rate. Sometimes the hard frontal process of maxilla may not be removed by the rongeur alone, in such cases bone drill is the choice.

The current study revealed a surgical failure rate of 2% and success rate of 98%. The failed cases were 3 females and 1 male eye within the age range of 25 to 33 years. One out of 4 failed surgeries one had difficulty in osteotomy with prolonged duration of surgery 50 minutes. The cause of failure was nasal mucosal fibrosis three eyes and granulation tissue formation one eye. Duration of surgery ranged from (15 min-60 min) gradually decreased from 1 hour to 15 minutes.

EEDCR has the best outcome. Nasal anatomy can be visualised clearly under endoscopic guidance. Every step of surgery is done directly under clear vision and so the result is known at the time of surgery. This study does not conclude that EENDCR surgeries done under a particular type of anaesthesia have a better success rate. Further comparative studies will be needed to reach this conclusion.

CONCLUSION

The EEDCR has several advantages like higher success rate and few minor complications. It can be performed under GA, LA and assisted LA as per patient's preferences and surgeon's comfort.

Conflict of Interest: Nil

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Dacryocystorhinostomy: An Update National and Global Scenario.

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ABSTRACT

This article aims to report and sensitize practicing ophthalmologists throughout the nation about the history, modification, and success rate of dacryocystorhinostomy(DCR) published in the literature. The advancement in technology and modification of surgical approach as well as steps of either external or endoscopic DCR, with complications and surgical outcomes are described in brief.

INTRODUCTION

Dacryocystorhinostomy (DCR) is a definite treatment for nasolacrimal duct obstruction. External dacryocystorhinostomy (Ex-DCR) was first described by Addeo Toti in 1904, as a procedure in which a conduit for tear flow was created between the nose and lacrimal sac. He modified the technique in some patients with the removal of a portion of the middle turbinate to make wider bony windows. Kuhnt in 1914 began to suture the nasal mucosal flaps to the periosteum to reduce granulation tissue. Dupuy-Dutemps and Bourget in 1920 further refined Toti's technique of dacryocystorhinostomy by reconstructing nasal and lacrimal sac flaps. The Ex-DCR has remained largely un-

changed since and has remained the gold standard in regard to its high success rates, rapid healing, and low equipment costs. [1] This procedure, however, is not free of complications like visible scar and disruption of medial canthal ligaments.

An intranasal approach was theoretically described by Caldwell, West, and Mosher. [2-4] Endonasal DCR was initially performed using rongeur and was therefore termed "mechanical" endonasal DCR. McDonogh and Meiring in 1989 described the first modern endo-nasal DCR. It is the evolution and expansion of several techniques over time that has led to improved outcomes of an endonasal approach. With the

development of new surgical instruments, endo-nasal endoscopic treatment has evolved as an approach of choice for many cases. [5] Nowadays, endoscopic dacryocystorhinostomy (En-DCR) can be performed using laser assistance [6-7] radio-surgical electrodes, [8], or other mechanical means including powered burr and rongeur.

The aim of this report is to sensitize all practicing ophthalmologists by providing a brief review of the literature on the modification of surgical technique and outcomes of dacryocystorhinostomy surgery.

METHOD

The author performed a Google

scholar, PubMed searches for all articles published in English on modification in Dacryocystorhinostomy surgery. The specific emphasis was laid on recent updates on DCR and its outcomes.

RESULTS AND DISCUSSION

The literature published independently by Dupuy-Dutemps and Bourget in 1920 has become a basis of truly modern external DCR. They advocated reconstructing both anterior and posterior flaps and reported a success rate of 94%. However, technical difficulties and fear of bleeding when angular vessels were encountered led to the modification being developed throughout the 20th century. [9,10] Several issues like the placement of the incision, raising medial canthal flap and use of chisel [11], rongeur or bone trephine [9,10], burrs [12], use of stent, flap sutures, and country of posterior flaps [13] (Veirs 1969) had been debated.

A prospective, comparative, interventional case series over a period of 18 months with patients managed by external DCR surgery with and without Pawar implant by Mishra D et al. showed that external DCR using Pawar implant is safer, faster, and had a higher success rate (97%) compared to conventional DCR. [14]

A modified technique of external DCR using a “U”-shaped single flap that was fixed onto the orbicularis muscle with combined silicone tube in dacryostenosis by Caglar C et al. showed an overall success rate of 97.4%. [15] This technique simplifies the surgical

procedure and is useful in cases with decreased visibility because of excessive bleeding during surgery, a small sac size, and difficulty in flap reconstruction.

A comparative study by Ekin M et al. comparing the effect of w-shaped and linear incision in bilateral external DCR reported the mean patient self-assessment score for the incision 2.44 ± 1.03 for the linear scar and 1.56 ± 0.73 for the WS group ($P < 0.001$). The study concluded that there is less chance of cutaneous scar tissue formation with the w-shaped incision. [16]

In a Prospective interventional study of 17 eyes with sub-ciliary DCR, the anatomical and functional success rate of 100% was reported and the final cosmesis outcome was excellent. [17] However, further study is needed to evaluate the outcomes in elderly people with lax lids and pediatric population.

Initially, it was considered that external DCR had a higher success rate of 85-100% as reported in a previous study. [18] With the advancement of technologies and nasal endoscopes, the endoscopic DCR has become the procedure of choice for many otolaryngologists and ophthalmic surgeons. The success rate following endoscopic DCR has become equal to or higher than external DCR. [19] However, a prospective, comparative study conducted in Nepal had shown a comparable surgical success rate but higher patient satisfaction of endoscopic DCR compared to conventional DCR surgery (Rasaily et al. 2018). [20]

In order to enhance surgical success rate, surgeons have been recently utilizing semiconductor diode lasers. [21] Several high-power solid-state lasers have been used mostly by the transnasal approach to creating osteotomy by using - Holmium: Yttrium-Aluminum-Garnet (Ho: YAG) laser, potassium-tytanyl-phosphate (KTP) laser, Neodymium: YAG (Nd: YAG) laser, and Erbium: YAG (Er: YAG). [21-24] The laser-assisted procedures are faster and provide excellent hemostasis during operation. However, the success rate of laser-assisted DCR is lower than non-laser DCR.

The transcanicular laser-assisted dacryocystorhinostomy (TCL-DCR) is considered a fast and simple alternative procedure with a success rate between 34% - 95.2% and an anatomical success rate up to 100% have been published by Kayank. [25] The functional failure rate of TCL-DCR is higher when compared to non-laser-assisted DCR methods and tissue necrosis and proximal lacrimal drainage trauma are reported. However, surgical modification to decrease the amount of laser energy has resulted in better anatomical and functional outcomes.

Various tools have been utilized for creating bony ostium. Burrs and trephine have been used in DCR for more than 100 years (Chandler 1936, Carter et al., 1996 and Pico, 1971). [9, 26, 27] An ultrasonic or piezoelectric-assisted or powered endoscopic DCR first performed by Krasnov in 1971 and reintroduced in 2005 by Sivak Callcotte. [28, 29] The latest version of the machine utilizing longitudinal and torsional movement of the tip has been

developed (Sonopet, 2010). [30] However, we rely on utilizing rongeur for bone removal as they are reliable, widely available, and do not require extra setup.

Recently, some surgeons have advocated using fibrotic agents like Mitomycin C (MMC) in both external and endoscopic DCR for enhancing success rate. In a hospital-based, prospective study, intraoperative application of Mitomycin C (MMC) during conventional DCR surgery provided a comparatively higher success rate (96.7% vs 86.7%). [31] Similarly, a retrospective study of endoscopic DCR using MMC reported a higher success rate of 95% without any complication. [32] Use of MMC is a novel technology in both external and endoscopic DCR, however further prospective randomized studies have to define the optimal concentration and duration of using MMC. In a retrospective study by Peng W et al., a modified preserved nasal and lacrimal flap technique in endonasal endoscopic (EE-DCR) of 27 eyes showed 100 % anatomical patency and 92.6% symptomatic cure without any intraoperative complication.[33] The study concluded that modified preserved nasal and lacrimal mucosal flap technique in EE-DCR is simple and safe, can effectively cover the bare bone around the opened sac, and provide a similar or even better clinical outcome compared with other routine treatment techniques.

Concerning the use of stents, some authors advocate the use of stents for the best result while others believe the formation of granulation tissue and extra cost. [1,34,35] In

a randomized control trial comparing early (2 weeks postoperatively) versus standard (6 weeks postoperatively) tube removal showed no significant differences in success rate. However, early tube removal is cost-effective for that patient who has traveled long distances for the operation. [36] The overall surgical success rate was found to be 96.6% in an interventional study of 32 eyes with modified DCR surgery with a new permanent lacrimal stent. The study concluded that DCR with a new permanent lacrimal stent is technically quick and easy and can be used for all age groups. [37]

CONCLUSION

In this article, the history, several modifications, and surgical success of dacryocystorhinostomy have been meticulously discussed. The external DCR is the gold standard for primary nasolacrimal duct obstruction with a higher success rate. With the advancement of technology, the endoscopic endonasal approach has gained popularity with comparable surgical success rates and satisfaction. However, the long learning curve, the extra cost of set-up, and the unavailability of equipment have limited the endoscopic DCR. In developing countries like Nepal, external DCR is the primary surgery of choice due to its high success rate and cost-effectiveness.

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NESOS in Pandemic

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General Secretary, NESOS

Ophthalmology in Nepal has a long and proud history. Nepal Ophthalmic Society (NOS) was established in 1985 and has become one of the leading professional organizations of the country. It has been contributing towards development of human resources, eye care advocacy and spreading ophthalmic services in the country. Although Oculoplastic surgery started in Nepal in the year 2004, Nepalese Society of Oculoplastic Surgeons (NESOS) was formed later in the year 2013 under the presidency of Dr Rohit Saiju. Since then, NESOS has been playing a crucial role in development and decentralization of Oculoplastic services, performing regular training, conferences and continued medical education (CME) in Oculoplasty. The presence and importance of Oculoplastic services has been advocated and Oculoplastic services have been established as separate branches in most eye hospitals.

COVID -19 was unexpected and has hit all. Nepal is no exception. NESOS executive

team conducted a hybrid annual general meeting on December 26, 2020. Dr Ben Limbu was elected new president by voting and a new executive committee was formed under his leadership for the term 2021-2023. In the last six months, we have conducted several virtual meetings and formulated a two years master plan. We are extremely proud to announce our first eastern regional webinar on 17th July 2021 with the theme dacryology "The Highway of Tears". Our colleagues from eastern Nepal have worked hard in the pandemic to make it come true. The webinar will be graced by distinguished speakers from the region and abroad. We have been working towards upgrading our website. Website is the face of any association in this digital world. A team of Oculoplastic surgeons are dedicated to making our website updated and appealing.

We are also pleased to launch the first edition of NESOS e-Mag, an official electronic magazine of NESOS. It will feature Oculoplastic works in and

abroad, promote researches and recent advances in Oculoplasty, create bonds among fellow Oculoplastic surgeons and felicitate senior Oculoplastic surgeons with their interviews. Oculoplastic photography is a part of Oculoplastic life; e mag will promote and complement works of fellow Oculoplastic surgeons with their photo stories.

The aim of NESOS also involves conducting various clinical researches in Oculoplasty and disseminating its result to the community. NESOS was successful in conducting a national survey on Retinoblastoma in 2019. We are disseminating the result of the study in various journals which are in the line of publication. We have incorporated Retinoblastoma in "Eye health education" in "One school one nurse training". The Ministry of Social Development, Bagmati Province is providing this training to school nurses of 13 different districts in Patan hospital. In this education program, the school nurses are also informed about symptoms,

signs, diagnosis and referral of Retinoblastoma cases along with other eye health topics. This is done keeping in mind that these school nurses from 13 different districts will have direct access to school children and have the best chance of early diagnosis and referral.

Within two years, we are planning to conduct a central and western regional virtual conference. We are also working to conduct a physical international conference post COVID. It will be a good platform to share knowledge among Oculoplastic surgeons within the country and abroad. I would like to thank all members for working hard to execute our plans. Together we will take NESOS to greater heights and bring the best among all our fellow Oculoplastic Surgeons.



Prof. Dr Ashok kumar Grover honoring our first NESOS conference along with founder president Prof. Dr Rohit Saiju

Retinoblastoma education in "One School One Nurse Program"

The I-STORIES: Oculoplasty in Photography

Photography is an asset to any oculoplastic surgeon. The work of an oculoplastic surgeon is an art which needs to be documented. The I -stories: Oculoplasty in photography section will feature the works of oculoplastic surgeons, their success stories and experiences. Consent should be taken from the patient by the respective author.

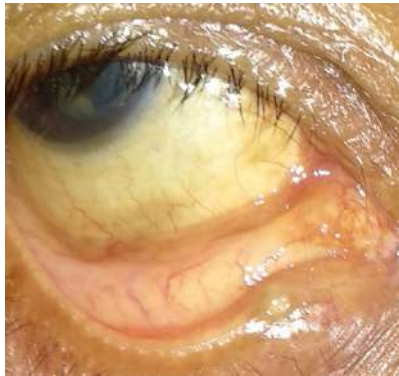


A case of RE upper eyelid congenital capillary hemangioma excision followed by median forehead flap performed at the age 8 years of the patient at Bir Hospital in 1964. Surgeons Dr ND Joshi and Dr Dinesh Nath Gangol (General surgeon).

Probably the first Documented Oculoplastic case in Nepal .

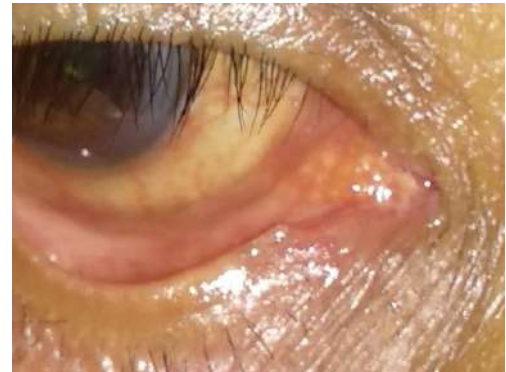
Photo Courtesy: Prof Dr Rohit Saiju

The I-STORIES



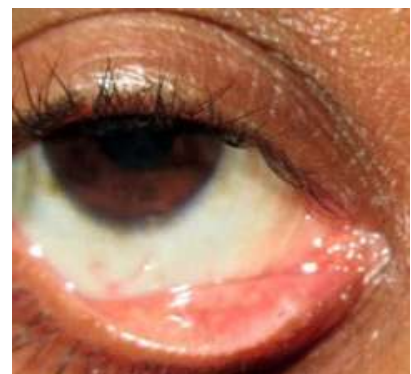
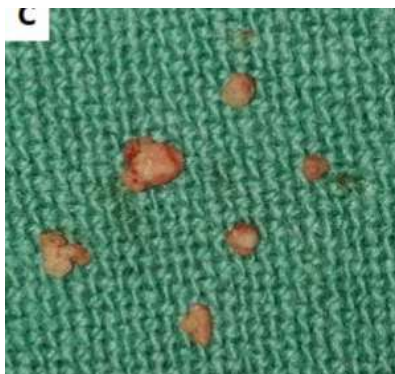
Canaliculitis : swollen protruding punctum (upper left), canalicular curettage with canaliculotomy(upper right) ; granules (lower left) and healed up canaliculitis (lower right)

Photo Courtesy: Dr Triptesh Raj Pandey



A middle aged female presented with recurrent lower lid canaliculitis with the characteristic protruding punctum lower lid (1). Frank purulent discharge could be expressed from punctum on pressure. Canalicular curettage with one-snip punctoplasty (2) revealed multiple calcified masses of varying size and shape along with debris (3). The patient had prompt resolution of the symptoms, good postoperative recovery and no recurrence was seen (4).

Photo Courtesy: Dr Sabin Sahu



DCR Surgery Revisited



REPLACEMENT OF OLDER TECH BY CURRENT PRACTICED TECHNOLOGY

I frequently perform Watery Eye Surgery on previously failed surgeries. Today, I performed it on a patient who had watery eye surgery almost 35-37 years back. To be honest, going back to his surgery time, I was not even a school boy. I heard about an old way of doing watery eye surgery where a tube is placed permanently between sac and nasal cavity.

Currently, we performed surgery where we placed a tube into the entire tear duct. I am so lucky to witness, and retrieve old day used tubes during surgery and replace it with a new tech tubing system.

Photo Courtesy: Dr Ben Limbu Global Eye Centre, Kathmandu



NOT JUST DCR (WATERY EYE)

Conjunctival DCR with Jones Tubing is an ultimate surgery when all other simple DCR procedures become hopeless procedures. However, Conjunctival DCR with Jones Tubing remains a challenging surgery due to unavailability of consumables, frequent extrusion of tube and lack of proper surgery set up.

I am proud to announce our second surgery at Eastern Region of Nepal.

Photo Courtesy: Dr Ben Limbu, Global Eye Centre, Kathmandu

The I-STORIES



Lower canalicular laceration repaired with 22 G angiocatheter tube as a stent.



Iatrogenic canalicular laceration (while syringing) was reconstructed with a 22 G angiocatheter tube as a stent.

Photo Courtesy: Dr. Suresh Rasaily



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TIMON
Timolol Maleate
0.5% w/v Eye
Drops

CHLORO
Chloramphenicol
0.5% w/v Eye Drops
5% w/v Ear
Drops

Moist Max
Carboxymethylcellulose
Sodium 1 % w/v
Lubricating Eye Drops

MIOX
Moxifloxacin
0.5% w/v Eye
Drops

SONIC
Sodium Chloride
5 % w/v Eye Drops

Proud supporters of the NESOS e-Mag "The Highway of Tears"



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