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Original Research Article

Problems and there management in Endoscopic Dacryocystorhinostomy –A case series

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Abstract: To evaluate the problems which we encountered during our surgical experience of 350 cases and what was done to get past them and also to evaluate the future prospects which will aid in decreasing the failures and making the procedure much simpler. A prospective study of 350 patients Undergoing Endoscopic Dacryocystorhinostomy (DCR) surgery and the problems faced during the surgical procedure and there management. Tertiary Referral Centre (RUHS College of Medical Sciences, Jaipur). 350 patients operated upon with acquired Nasolacrimal duct obstruction. In our study with 350 cases we encountered problems in 75 cases some of them big enough to make the surgeon abandon the procedure but with years of experience and practice we have been able to counteract these problems and progressively reduce the recurrence and failures. So far we have achieved a success rate of 96% in first attempt and 100% after revision process. Endoscopic Dacryocystorhinostomy a revolution in lacrimal surgery is still fraught with few problems but with proper case selection, meticulous preoperative workup and preparation and a good amount of experience makes the associated difficulties easier to identify and handle appropriately.
Keywords: Nasolacrimal duct obstruction, Endoscopic Dacryocystorhinostomy, Anatomical alterations, lacrimal sac.

INTRODUCTION

Dacryocystorhinostomy is a procedure that involves creating a passage of lacrimal sac into the nose by bypassing the obstructed nasolacrimal duct. Endoscopic dacryocystorhinostomy is a safe, fast and effective method to relieve a stenosis distal to the common cannaliculus. Endoscopic procedure give a direct and enhanced view, less complications and aesthetically better cosmetic result. Endoscopic Dacryocystorhinostomy should also be considered for revision surgery in the patients who have failed external dacryocystorhinostomy.

Addeo Toti first described the external approach in 1904; West described the endonasal approach in 1911[1, 2]. The latter approach fell out of favor because of difficult visualization and endonasal access to the lacrimal sac. However, with the newer, rigid telescopes and now with use of lasers these difficulties have been overcome, resulting in a resurgence of the endoscopic technique [3, 4].

Endoscopic instrumentation provides excellent visualization within the nasal cavity for the identification and removal of adhesions that commonly cause dacryocystorhinostomy failure. Other intranasal factors that contribute to failure of dacryocystorhinostomy such as middle turbinate hypertrophy, septal deviation and ethmoid sinusitis may also be corrected endoscopically

Inspite of so many years and procedure being done regularly even at a very basic level it is fraught with problems, some of them may be solvable but some may require abandoning of the procedure or revision.

The main aim of our study is to evaluate these problems which we encountered during our surgical experience of 350 cases and what was done to get past them and also to evaluate the future prospects which will aid in decreasing the failures and making the procedure much simpler.

MATERIAL AND METHODS

A study of 350 patients undergoing endoscopic dacryocystorhinostomy for acquired nasolacrimal duct obstruction was performed in the ENT department of the RUHS College of Medical Sciences, Jaipur, Rajasthan, India. Primary evaluation was conducted by an ophthalmologist; a regurgitation test was performed in the ENT department in all cases, and syringing was done in doubtful cases. Ropla's regurgitation test (i.e. expression of mucopurulent material through the puncta and canaliculi if the canaliculus and valve of Rosenmuller are patent and healthy) was considered to be the most reliable test of acquired nasolacrimal duct

obstruction. Surgery was performed under topical anaesthesia with sedation, as all patient were 16 years or older [3].

A 30degree endoscope was used. The area anterior to the maxillary line, just anterosuperior to the uncinate process, was infiltrated with 2 per cent Xylocaine and 1:100 000 adrenaline [11]. Curved incision starting 5mm above the axilla curving forward going approximately 1 cm anterior to the base of uncinate process vertically down till the upper attachment of inferior turbinate. The overlying mucosa is separated using a blunt dissector and this strip of mucosa is reflected back and down Bone was removed with the help of Kerrison punch forceps to create a window approximately 1–1.5 cm. The nasolacrimal sac was identified and its medial wall distended by applying external pressure. The medial wall of the sac was incised and the opening enlarged, using scissors and Kerrison punch forceps. Finally a cut of about 1.5 cm is made on the reflected mucosa just above the rhinostomy site and is reposited back making a window. A final rhinostomy diameter of about 1.8 mm was considered sufficient to ensure long term success [5].

DISCUSSION

Out of 350 cases operated various problems were faced in 75 cases .The problems were as mentioned below (Table 1)

Table-1: Problems and Number of cases

Problem	No. of cases
Limited access	
• Severe Deviated Nasal Septum	12
• Turbinate hypertrophy	5
• Concha bullosa	6
• Prominent Agger Nasi	4
• Hypertrophied uncinate	3
Excessive bleeding(inspite of proper preparation)	6
Orbital fat prolapsed	4
Thick and hard bone	16
Difficult sac	
• Contracted and small	4
• Failure	
• Restenosis	8
• Flap sagging	2
• Granulation	3
• Synachiae	2

Anatomical and pathological variations limited the access in 30 cases. Deviated nasal septum was the culprit in majority of cases which was managed by endoscopic septoplasty. Turbinate hypertrophy seen in 5 cases was managed with submucosal cauterization. Concha bullosa and enlarged Agger nasi cells were removed endoscopically to increase the access. A formal uncinectomy was done in cases with enlarged uncinate limiting the approach.

Inspite of proper preparation in 6 cases we encounters excessive bleeding on incising the mucosa in these cases majorly it was seen due to anxiety of the patient the patient was calmed, extra packing with xylocaine adrenaline was done for 10 minutes.Inspite of all these measures in 2 cases bleeding still continued in these cases the overlying mucosa was cauterized and then removed.

Thick and hard bone which was difficult to remove with the punch was found in 16 cases, in some of them we were able to remove the lower thinner part but the thicker upper part remained. Progressively chisel and hammer was used which removed the problem in 5 cases but in rest 11 cases drill had to be used .Drill has to be used with precaution not to touch the endoscopes which disturbs its optical axis .Also the rotation may damage the vestibular skin this was avoided by covering the shaft with plastic sheath.

Small contracted sac seen in 4 cases made visualization even with proper push on the sac externally difficult; this problem was encountered by filling the sac with saline and passing the probe through the lower canaliculi into the nose. The bone and mucosa around the probe tip is removed to make a clear communication of lacrimal sac with the nasal cavity.

In 4 cases we encountered orbital fat prolapse where lamina was breached. In these cases fat was further left untouched and care was taken not to breach anymore of the lamina. The crest bone was removed carefully around the prolapse, blindly catching and removing any part of bone, flap or sac was completely avoided. One way to recognize fat was to place the removed tissue in a bowl of saline, the fat floats on the surface while the tissue sinks.

Failure or recurrence was seen in 15 cases due to various reasons such as Restenosis which was mainly due to inadequate bone removal and inadequate mucosal window these were refashioned and a piece of merocoel was placed at the fistula site which was removed after 72 hours. In 2 cases fashioned flap sagged down which was redone .Granulation formed in 3 cases in which gel foam was used to keep fistula patent, granulations were removed and topical Mitomycin at a dose of 0.5mg/ml was used [9]. Synachiae was the reason for recurrence in 2 cases they were removed and topical Mitomycin was applied.

RESULT

Dacryocystorhinostomy surgery a few years back had been a domain of ophthalmologists but now it has been completely overtaken by ENT surgeons .Due to the ease of endoscope having a direct approach with less bleeding, no scar, high success rate and better patient compliance Endoscopic Dacryocystorhinostomy has become a standard treatment [3,8,10] .

But limited maneuverability, anatomical variation and sometime inadequate procedure may make this procedure fraught with problem.

In our study with 350 cases we encountered problems in 75 cases some of them big enough to make the surgeon abandon the procedure but with years of experience and practice we have been able to counteract these problems and progressively reduce the recurrence and failures. So far we have achieved a success rate of 96% in first attempt and 100% after revision process.

Only in 2 cases which were recurrence cases referred from other otorhinolaryngologists we did not get desired result .Both of these patients were very old and on clear evaluation both of these patients had ectropin justifying the diagnosis of functional nasolacrimal obstruction .These patients were referred back to ophthalmologist and after appropriate management revision Endoscopic Dacryocystorhinostomy was done with a successful result.

Generally the follow-up of all cases was done with repeated syringing on day 1, day 7, after one month and then after 3 month but special care was taken in these cases where syringing was done on day one and then weekly for one month and biweekly for next 3 months [6-8].

Along with this Nasal endoscopy was mandatory at least on the first visit and then as and when indicated or required.

CONCLUSION

Endoscopic Dacryocystorhinostomy a revolution in lacrimal surgery is still fraught with few problems but with proper case selection, meticulous preoperative workup and preparation and a good amount of experience makes the associated difficulties easier to identify and handle appropriately.

Summary

- Endoscopic Dacryocystorhinostomy gives better view, less complication and aesthetic results.
- Surgical procedures fraught with problems can lead to abandoning of the procedure.
- Limited access,bleeding,difficult bone or sac ,fat prolapsed and failures ca cause obstacles in normal flow of the procedure
- Proper case selection, meticulous preoperative workup and preparation, and a good amount of experience overcome these obstacles.

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