Lacrimal
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In Pre & Post Surgical Conditions

Gatifloxin 0.3% + Keterolac 0.4%

Safer alternative to corticosteroid combination

Effectively combats stubborn pathogens MRSA & MRSE

Restabilizes blood-aqueous barrier

Controls post-surgical inflammation

Reduces ciliary flush & anterior chamber flare

No risk of Elevated IOP

Combats Infection, Controls Inflammation

Avesta
Monocanalicular Versus Bicanalicular Silicone Intubation in Congenital Nasolacrimal Duct Obstruction

Dr. (Mrs) Kasturi Bhattacharjee, Dr. Harsha Bhattacharjee, Dr. Ganesh Kuri

Congenital nasolacrimal duct obstruction (CNLDO) occurs in approximately 5% of normal newborn infants. The blockage occurs most commonly at the valve of Hasner at the distal end of the duct due to an imperforate membrane which usually resolves spontaneously at the time of birth but sometimes may persists into adulthood. Rarely it may be associated with more proximal nasolacrimal system obstruction.

It has been reported that more than 90% of CNLDO undergo spontaneous resolution by one year of age. Treatment of congenital lacrimal duct obstruction consists of initial observation and lacrimal sac massage for resolution followed by probing of children with persistent duct obstruction. Though there are various reports regarding the success of lacrimal sac massage, however positive pressure lacrimal sac massage performed with occlusion of the common canaliculus and firm downward pressure on the lacrimal sac results in higher rates of resolution of the symptoms and signs of CNLDO. Probing failures should be treated with more aggressive surgical procedures including balloon dacryoplasty and nasolacrimal duct intubation.

The nasolacrimal intubation can be done through both the puncta or through a single punctum. Bicanalicular (BCI) nasolacrimal duct intubation involves passage of the silicon stent both through the inferior and the superior puncta and then through the nasolacrimal drainage system into the nose. Monocanalicular (MCI) nasolacrimal duct intubation involves a single pass preferably through the inferior punctum into the nasolacrimal drainage system and the nose. It has been reported that MCI is more advantageous than BCI due to easier technique of insertion and removal of the stent and as it involves manipulation of one canaliculus only.

The aim of the present study was to compare success rate of monocanalicular (MCI) versus bicanalicular (BCI) silicone intubation in congenital nasolacrimal duct obstruction (CNLDO).
**MATERIALS AND METHODS**

A Prospective interventional study of 64 eyes of 62 children between 18 to 30 months of age and treated for CNLDO. The diagnosis of CNLDO was based on history of tearing and Fluorescein Dye Disappearance test. Children who had failed probing were included in the study. In all the children silicone stent intubation was done between Jan 2005 to Dec 2009. MCI was done in 32 eyes of 32 children and BCI done in another 32 eyes of 30 children, randomly. Fluorescein dye disappearance test was done for monitoring of lacrimal drainage function. It was performed by instillation of a drop of 2% Fluorescein Sodium into the conjunctival sac and assessed after 5 mins to check for the amount of dye retained in the tear meniscus. The Monocanalicular intubation was done with the self retaining Monoka system (FCI Ophthalmics, Marshfield Hills, MA) and Bicanalicular Intubation was done with the Ritleng intubation system which consists of a Ritleng probe (a rigid hollow tube with a narrow slit through its length) and a Ritleng tube (a silicone tube attached firmly to a Prolene monofilament at each end).

All operations were performed under general anaesthesia. The nose was prepared by placing a cotton tipped applicator soaked with adrenaline 1/1000 in the inferior meatus 20 minutes before the start of the procedure. At first the standard technique of probing was done in all the cases. If required the inferior turbinate was pushed medially or fractured with a Freer elevator to facilitate the insertion of the endoscope. In case of BCI, probing was done with the Ritleng hollow probe down through the nasolacrimal duct into the inferior meatus and through it the prolene part of the Ritleng intubation system was passed initially and retrieved through the inferior meatus. Then the Ritleng probe was removed and the prolene thread was pulled from the nasal side which drags the attached silicon tube into the nose. After passing the silicon stent through both the puncta down through the nasolacrimal duct into the nasal cavity, the two ends of the silicon tubes were tied up in 5-6 knots and sutured and fixed to the nasal mucosa with a 3’O’ polyglactin suture. In MCI, the silicon stent was passed through the inferior punctum down through the nasolacrimal duct into the nasal cavity. The nasal end of the silastic stent was cut and fixed to the nasal mucosa with 3 ‘O’ polyglactin suture. Patients were instructed to use Nasal decongestant drops 4 times per day for 10 days postoperative. The followup was done 1 week, 1 month, 3 months, 6 months and 12 months postoperative. All tubes were removed at 3 months postoperative period. For removing the tubes in case of BCI, the proximal end was cut in the loop between the superior and inferior puncta and the stent pulled under endoscopic guidance through the nose. In MCI the Monoka tube was removed by grasping the flange at the lacrimal end. After removal of the tube diagnostic probing and controlled minimal syringing
done to ascertain the success of the procedure.

The datas were analysed statistically by using the SPSS software.

RESULTS

The age ranged from 18 months to 30 months with mean age of 22 months; SD, 4.4. There were 22 females and 40 males. Children with CNLDO and failed probing were taken up for silicon stent intubations. BCI was done in 32 eyes and MCI in another 32 eyes. Mild nasal bleed occurred in both the MCI and BCI groups and were controllable. Full resolution of symptoms at the time of tube removal was 24 of 32 in MCI group and 25 of 32 in BCI group. 6 months after tube removal, the success rate was 28 of 32 in MCI and 29 of 32 in BCI group. However at the end of one year the success rate was 28 of 32 each in both the groups. In the initial 3 months 3 eyes in BCI and 4 eyes in MCI had extrusion of the stents. Other complications included 4 cheese wiring of puncta with BCI and 3 temporary corneal punctate erosion after MCI which was managed with topical lubricants for 1-2 weeks.

There was no statistically significant effect of type of silicone intubation and the associated complications with the success rate (p<0.91).

In conclusion though Congenital nasolacrimal duct obstruction undergoes spontaneous resolution in most children, however a small percentage requires aggressive interventional procedures. Probing done within the first year of life gives a higher success rate. However failed probing are best managed with either nasolacrimal duct intubation or balloon dacryoplasty, though worst cases require dacryocystorhinostomy operation. In the present study the children with failed probing gave a reasonably good success rate with probing and tubing with silicon stents. However the effect of MCI versus BCI on CNLDO are comparable with same success rate.

REFERENCES

Canalicular Recanalizations with Sisler's Trephines

Dr. Mohd Javed Ali, Dr. Santosh G Honavar, Dr. Milind N Naik

To present our experience in canalicular recanalizations using sisler’s trephines.

(i) Sisler trephines; (ii) Smaller diameter and (iii) Distal blocks

MATERIALS AND METHODS

Prospective case series, including 18 completely obstructed canaliculae of 12 eyes (10 patients). Canalicular blocks were divided as proximal (1-3 mm), mid (4-6 mm) and distal (beyond 6 mm). Lubricated trephine is inserted to the point of obstruction with its accompanying stylet in place to minimize trauma to the proximal, patent canaliculus. The syringe is then affixed to trephine’s luer-lock hub and trephination is carried out by gentle rotation of the assembly. When the sac is entered, the syringe will pop indicating achievement of the desired passage and a plug of scar tissue is seen either within the lumen of trephine or barrel of the syringe. This is followed by stenting of the new passage with mono or bicanalicular stents. Data collected included demographic data, clinical presentation, laterality, status of lids and punta, syringing findings, probing interpretations, types and duration of intubation. Exclusion criteria included nasolacrimal duct obstruction following successful trephination. Main outcome measures were anatomical patency of the passage and resolution of symptoms.
Postoperative Management: (i) Antibiotics, (ii) Steroids, (iii) Stents duration

Complications: Healthy canaliculi – trauma and false passages

Prevention of Complications:
- Prior proximal dilatation
- Trephine lubrication
- Normal anatomical course
- No forceful entries!
- Finalization in sac

Advantages:
- Office procedure
- Surgical microdissections avoided
- Sculptured passage creation
- Smooth edges- less reclosures

RESULTS
There were 3 males and 7 female patients. Mean age was 17.1 years (range 5-35).

Two patients had bilateral lower canalicular block, two patients had bilateral bicanalicular block and six of them had unilateral bicanalicular block. Of the 18 canaliculae, 10 were lower canalicular blocks and 8 involved the upper canaliculus. 3 canaliculae had proximal block, 5 had mid canalicular block and 10 had distal canalicular block. One patient had subsequent nasolacrimal duct obstruction and was excluded from the study for the outcome analysis. One patient with bicanalicular block developed a false passage during upper canalicular trephine. Following trephination 3 canaliculae underwent mini-monoka stents and the rest were bicanalicular Crawford stents. All the bicanalicular stenting was primary and under endoscopic guidance. All Stents were retained for a period of 16 weeks. A minimum follow up of 3 months following removal was considered for final analysis. Follow ups ranged from 3 months-1 year following tube removal. Final analysis of 16 canaliculae showed 13 (76%) were patent 3 months after stent removal. Among the patent canaliculae, one patient with earlier bicanalicular involvement did not have resolution of symptoms and dye disappearance test showed +2 retention. One canaliculi had false passage, 2 canaliculae which were patent after tube removal reoccluded at 3 months follow-up.

In conclusion canalicular recanalization using Sislers trephines are an effective way to manage canalicular obstructions with an anatomical success in 76% and functional success of 64%.
Comparison of Outcome of Probing and Probing +Intubation in Naso Lacrimal Duct Obstruction

Dr. Chintan, Dr. Shreya Shah, Dr. Mehul Ashvin Kumar, Dr. Omprakash Yadav

Obstruction in the lacrimal passage, is, usually the forerunner of infections/inflammations in this region. Continuous epiphora with or without infection is not only a constant hazard for the eye, but a spiteful social malady also. The correct treatment, obviously lies in removing or by-passing the site of obstruction.

Obstruction of the nasolacrimal drainage system is extremely common in the paediatric age group, occurring in as many as 20 - 30% of newborns. (1,2). But only 1% to 6% of these children become symptomatic. (1,3) Spontaneous resolution occurs in 80-96% of affected infants by one year of age. (1,4).

Prior to Toti (5), who envisaged, communicating the lacrimal sac with nose, the best we could do for these patients, was to extirpate the infected sac; which no doubt removed the infection but left the patient condemned for the rest of the life with constant epiphora.

MATERIALS AND METHODS

A randomized controlled trial—a prospective study was done of 66 patients of age between 6 months to 60 years from January 2008 to March 2011. The patients were divided into two groups, Group 1 (33 patients for probing) and group 2 (33 patients for probing with intubation).

The initial examination included looking for the lacrimal puncta, assessing anomalies of the lids or face, ruling out conjunctivitis, allergic inflammation and other causes of epiphora in children. The diagnosis of congenital nasolacrimal duct obstruction was based on history of tearing and/or discharge and on clinical examination as evidenced by epiphora, recurrent mucopurulent discharge and reflux of the contents of lacrimal sac on pressure. Sac syringing pre operatively done by a qualified person if possible.

Patients with other reason of excess lacrimation, Acquired NLD blocks, Trauma to lacrimal passages and High risk for general anesthesia.

We have defined a probing alone and probing and intubation group under LA or GA.

Probing

A Bowman’s probe was used in all cases. Bowman’s probes are available in
various sizes ranging from the size 0000 (0.7 mm diameter) to size 1 (1.1 mm diameter).

The probe was introduced into the canaliculus until medial wall of the lacrimal fossa was felt; at this point it was turned and introduced into the nasolacrimal duct and gently advanced till resistance was felt. The breaking of the membrane was felt as the probe advanced into the obstruction. The patency of the nasolacrimal system was checked by obstruction of the upper puncta using a punctum dilator and irrigation with saline from the lower puncta. Flow of saline in the throat was confirmed by placing a paediatric size suction catheter in the throat.

**Probing with Intubation**

Initial steps are same as in probing. The upper and lower canaliculi were probed and dilated. A fine silicone tube about 15 cm. long was taken and its one end was slipped over the canaliculus introducer. This was introduced in the lower canaliculus. A similar procedure was practised for the upper canaliculus. Both ends of silicone tube were pulled and fixed with the lateral wall of nose.

Each patient received topical and systemic Antibiotics combined with steroid if infection is not there. Patients were seen in the clinic at one week, one month, third month and then at six months after surgery.

Success of probing was the main outcome measure and was defined as complete remission of watering, discharge and reflux of contents of the lacrimal sac on pressure and sac syringing.

All the data exported in excel sheet and analysed with SPSS 15 specially designed software.

**RESULTS**

Total 66 patients included in the study and 33 patients in each group. From which 38 patients are female and 28 are male. Our main age of group of concerned is paediatric, they are 63 out of 66 (95.45%). (Table 1).

<table>
<thead>
<tr>
<th>Table 1: Demographic Detail</th>
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<tr>
<td>Sex</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>0 TO 5</td>
</tr>
<tr>
<td>6 TO 10</td>
</tr>
<tr>
<td>11 TO 20</td>
</tr>
<tr>
<td>41 TO 50</td>
</tr>
<tr>
<td>61 TO 70</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
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</table>
The results of probing and probing with intubation are presented in (TABLE 2). Success rate in group 1 (e.g. probing) is 78.78%, out of 33 patient 26 patients are patent. Success rate in group 2 (e.g. probing with intubation) is 90.90%, out of 33 patient 30 patients are patent.

<table>
<thead>
<tr>
<th>Table 2: Final Diagnosis (Surgery Wise)</th>
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<tbody>
<tr>
<td>Surgery Name</td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Block</td>
</tr>
<tr>
<td>Patent</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

P value : 0.152

The results of probing and probing with intubation in adult and paediatric are shown in (Table 3). Success rate in paediatric patient is 84.12%, out of 63 patient 53 patients are patent. Success rate in adult patient is 100%, all 3 patients are patent.

<table>
<thead>
<tr>
<th>Table 3 : Final_dx (Age Wise)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric</td>
</tr>
<tr>
<td>Block</td>
</tr>
<tr>
<td>Patent</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

P value: 0.606

DISCUSSION

The probing has been a time proven treatment for Nasolacrimal Duct obstruction. In our study success rate of probing is around 79%.

This cure rate is comparable with Yap’s (11) study which shows success rate of 90%. Halepota et al (12) reported a success rate of 95%. Havins and Wilkins (13) demonstrated a success rate of 94% for probing done in less than 8 months compared to 56% in children age 18 months and older. Sturrock (14) reported 86% success when probed under one year compared to 72% between 1 and 2 years of age and 42% for more than 2 years of age. The main reason of failure is infection, which is in 3 cases out of 7.

Management of nasolacrimal duct obstruction possesses unusual problems and has largely been unsatisfactory. The use of silicon tubes for intubation has
significantly improved the prognosis in these cases. The surgical procedure maintains relatively physiological lacrimal passages, avoiding the difficulties associated with Jones’ tube intubation.

The success rate of initial silicone intubation in relieving signs and symptoms of nasolacrimal duct obstruction is 50% to 100%. While our success rate is 91%. The failure is due to infection in 2 cases and tube removal in 1 case.

In conclusion there is no statistically significant difference in outcome of both surgeries.

REFERENCES

Functional Endoscopic Dye Test (FEDT): The True Success Story of Dacryocystorhinostomy (DCR) Surgery

Dr. Santanu Mitra

External Dacryocystorhinostomy (E-DCR) has still remained the gold standard in curing Primary Acquired Nasolacrimal Duct Obstruction (PANDO). The average osteotomy size tends to be 15x15 mm. But E-DCR has the disadvantages of a prolonged surgical and post-operative recovery period, may be associated with excessive intra or post-operative bleeding, and produces a visible external facial scar. Newer approaches like laser assisted transcanalicular DCR (TC-DCR) are gaining popularity by overcoming these disadvantages, but tend to create a relatively smaller osteotomy, averaging 5x5 mm.

The success story of DCR surgery by any route has 3 criteria to fulfill:

- a marked improvement in tearing
- ability to irrigate the artificial passage
- endonasal endoscopic visualisation of rhinostomy with free flow of dye through it

To compare the anatomical and functional outcomes after external (E-DCR) and transcanalicular diode laser dacryocystorhinostomy (TC-DCR).

Methods: Prospective, randomised, comparative case series.

Endonasal endoscopic evaluation of 129 postoperative DCR with a 0 degree rigid endoscope was done in an OPD basis. Functional Endoscopic Dye Test was performed by instilling 5% Betadine solution in lower conjunctival fornix and its functional transit time (FTT) to the rhinostomy site was measured with a stop watch.

Anatomic patency by irrigation with betadine solution visualised endoscopically was done after that.

- Patients were divided into two groups: E-DCR 57, TC-DCR 72
- Subjective evaluation of symptoms of epiphora was assessed from the history of patients.

The patients were in the follow up period of 1-12 months, 90% falling in between 3-6 months.
MATERIALS AND METHODS

- Under topical anaesthesia 2-3 drops of 5% betadine solution were instilled in the lower conjunctival fornix, and the stop watch started.
- Middle meatus and the rhinostomy were visualised with 0 degree rigid nasal endoscope.
- The stop watch recorded the TT of the betadine solution, or the air bubble preceeding it, first appearing at the rhinostomy. This was called Functional Endoscopic Transit Time (FETT/FTT).
- Patency of the passage was tested by irrigating with the betadine solution.
- Subjective symptoms of epiphora was noted from patient’s history.

RESULTS

Table 1: Patient’s profile

<table>
<thead>
<tr>
<th></th>
<th>E-DCR (n=57)</th>
<th>TC-DCR (n=72)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M:F</td>
<td>23:34</td>
<td>26:45 (1 bilateral)</td>
</tr>
<tr>
<td>Age Range</td>
<td>10 – 68 years</td>
<td>18 – 71 years</td>
</tr>
<tr>
<td>RE:LE</td>
<td>29:28</td>
<td>39:33</td>
</tr>
<tr>
<td>FETT (recordable)</td>
<td>39 (68.42%)</td>
<td>46 (63.88%)</td>
</tr>
<tr>
<td>Rhinostomy (visible)</td>
<td>33 (57.89%)</td>
<td>36 (50%)</td>
</tr>
</tbody>
</table>

Table 2: Objective and Subjective Results

<table>
<thead>
<tr>
<th></th>
<th>E-DCR (n=57)</th>
<th>TC-DCR (n=72)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Patent on irrigation</td>
<td>52 (91.22%)</td>
<td>62 (86.11%)</td>
</tr>
<tr>
<td>• FETT</td>
<td>39</td>
<td>46</td>
</tr>
<tr>
<td>• Range</td>
<td>13.2 sec – 1.45 min</td>
<td>21 sec – 2.50 min</td>
</tr>
<tr>
<td>• Mean</td>
<td>38.88 sec</td>
<td>1.14.69 min</td>
</tr>
<tr>
<td>Subjective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Asymptomatic</td>
<td>08</td>
<td>06</td>
</tr>
<tr>
<td>• Marked improvement</td>
<td>34</td>
<td>21</td>
</tr>
<tr>
<td>• Unchanged/ symptomatic</td>
<td>05</td>
<td>35</td>
</tr>
<tr>
<td>• Worse</td>
<td>05</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 3: Functional Endoscopic Transit Time (FETT)

<table>
<thead>
<tr>
<th></th>
<th>E-DCR (n=57)</th>
<th>TC-DCR (n=72)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FETT mean</td>
<td>38.38 sec</td>
<td>1.14.69 min</td>
</tr>
<tr>
<td>FETT mean &lt; 1 min</td>
<td>28/39 (71.79%)</td>
<td>14/46 (30.43%)</td>
</tr>
<tr>
<td>FETT mean &gt; 1 min</td>
<td>11/39 (28.2%)</td>
<td>32/46 (69.56%)</td>
</tr>
</tbody>
</table>
Though anatomically patent, a slower dye transit time indicates more ‘watery eyes’ as evidenced from higher numbers of symptomatic cases in TC-DCR group.

**Complications:** Narrow ostium, synechae and granulation tissue at ostium, soft tissue membrane formation are the various complications noted.

**Study Limitations:** Prospective study, insufficient number of cases and follow up. No masking done, so possibility of inherent bias. No proper control study done with normal subjects. The study was not age and gender matched.

**DISCUSSION**

FTT provides a quantitative measure of lacrimal drainage function after DCR surgery. A successful DCR surgery means anatomical patency, functional drainage and no symptom of epiphora.

Jones’ primary dye test evaluates the functional ability of the normal nasolacrimal passage and the F.

EDT test is based on that principle. FEDT was extremely useful for understanding rhinostomy function after DCR.

FETT tries to correlate the functional success with symptoms in post DCR patients.

Functional Transit Time of ≤45 sec. has a statistically significant association with subjective success.

There is no correlation between the success of DCR surgery with a large intraoperative ostium.

In conclusion:

- There is no statistical significant difference between the anatomical patency of E-DCR and TC-DCR groups.
- Functional success rate is significantly higher in the E-DCR cases.
- Dye transit time more than 1 min. is associated with larger number of symptomatic ‘watery eyes’ in the TC-DCR group.
- The rhinostomy size between the two groups 3 months after operation shows no significant difference.

**REFERENCES**

3. Moore WM, Bentley CR, Olver JM. Functional and anatomic results after two types


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**To Evaluate The Role of Electrocautery in The Treatment and Subsequent Outcome in Oculosporidiosis Cases**

Dr. Sharmistha Behera, Dr. Swati Samant, Dr. Gunasagar Dash, Dr. Sulin Kumar Behera

Rhinosporidiosis is a chronic and localized infection of the mucous membrane caused by Rhinosporidium seeberi.¹ This etiological agent has been since long, a subject of taxonomic uncertainty. It was considered as a phycomycete since 1923, later classified as a prokaryotic cyanobacterium called Microcystis aeruginosa.¹⁰ Presently, it has been definitively classified using molecular biological tools in a new clade - the Mesomycetozoa, along with 10 parasitic and saprobic microbes.¹⁰ Ocular sites of involvement of this infection has been seen in lacrimal sac, conjunctiva, canaliculi, lids and sclera.² The disease has been endemic in Sri Lanka, Indonesia, Philippines, Bangladesh and in many parts of India.² As this organism is known to thrive in hot tropic climates, in Orissa this infection is seen in the western districts, namely Bolangir, Sambalpur and Sundergarh, where extreme climatic conditions are experienced.¹ Possible mode of infection is through taking bath in stagnant ponds which is shared by cattle who harbour this infection.² Local surgical excision with electro cautery has been recommended as the treatment of choice.⁶ Thus we retrospectively reviewed all the cases treated with electro cautery to review its role in removal of oculosporidiosis.

**MATERIALS AND METHODS**

This was a retrospective study from March 2008 to March 2010. The record of
all the patients who were diagnosed to have oculorhinosporidiosis and who were operated with the use of electro cautery were analysed. The review included total of 32 eyes of 32 patients with oculorhinosporidiosis in whom excision with electro cautery was done. The diagnosis of oculorhinosporidiosis was based on both clinical and histopathological definitions. In our study, clinically all patients who were presenting with a fleshy, polypoidal, soft, pink color growth of conjunctiva with rough surface and gray white spots on the surface were taken into account to suspect conjunctival rhinosporidiosis and those cases with soft, fluctuant swelling of the lacrimal sac and where pressure over the lacrimal sac area produced a reddish discharge from the upper punctum were suspected for lacrimal sac rhinosporidiosis. All the suspected cases were subjected to histopathological evaluation for confirmation. Haematoxylin-eosin staining were carried out in all cases. Histological examination revealed the characteristic sporangia of rhinosporidiosis at various stages of the life cycle, e.g. young trophocytes and mature sporangia embedded in the substantia propria to confirm the diagnosis.

All the cases were sent to review by otolaryngologist to exclude nose and upper respiratory tract involvement. The surgical procedure included excision of the mass in cases of conjunctival rhinosporidiosis and subcutaneous lower lid involvement. In involvement of lacrimal sac removal of the sac by dacryocystectomy was done. Electro cautery of the involved tissue was done under local anaesthesia in the 32 cases. Immediate postoperative management included pressure bandage over the operated eye for 24 hours to maintain haemostasis. Postoperatively antibiotic drops, steroid drops and ointment, oral analgesics were administered for a period of 1 week on an average. All cases were followed up the next day, after 1 week, after 1 month, every month for the next 6 months and every 3 months thereafter.

RESULTS
A total of 32 eyes of 32 patients of oculorhinosporidiosis in whom electro cautery was used were evaluated during the study period of 24 months. Of the 32, 21 cases (65.6%) had lacrimal sac involvement, 2 (6.2%) had subcutaneous lower lid involvement, 4 (12.5%) had papebral conjunctival and 5 (15.6%) had bulbar conjunctival oculorhinosporidiosis. The patients were followed at frequent intervals for an average period of 1 year in our study. Right eye was affected in 18 patients and left eye in 14 patients. The age of the patients presenting with this condition ranged from 7 years to 35 years with an average age of presentation of 12 years. The no. of males affected were 21 as against the females numbering 11 (2:1). In 1 year follow up, 6 cases presented with recurrence. All the cases that showed up with recurrence despite electro cautery had an history of lacrimal sac involvement. None of the cases that had conjunctival involvement and had undergone cauterisation with electro cautery had any signs of recurrence.
during the follow up period.

<table>
<thead>
<tr>
<th>Site</th>
<th>Total No. of Cases</th>
<th>Recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lacrimal sac</td>
<td>21</td>
<td>6</td>
</tr>
<tr>
<td>Bulbar conjunctiva</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Palpebral conjunctiva</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Lower lid</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>6</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Although cases of spontaneous regression have been recorded in rhinosporidiosis, they are rare, and the mode of treatment remains surgical. Pedunculated polyps may permit of radical removal while excision of sessile polyps with broad bases of attachment to the underlying tissues are sometimes followed by recurrence due to spillage of endospores on the adjacent mucosa.

It has been advocated that a wide surgical margin is necessary to reduce the risk of recurrence, though this may be associated with significant morbidity like haemorrhage. Thus wide, complete and meticulous excision of the polyp followed by thorough electro-cautery of the lesion’s base is recommended. It is hypothesized that cauterisation of the lesion’s base may abate recurrence resulting from spillage of endospores on the adjacent mucosa.

In our review of 32 cases of oculosporidiosis, undergoing electro cautery, those 9 cases involving conjunctiva and 2 others involving lower lid did not show up with any recurrence within 1 year follow up period.

Out of the 21 cases having lacrimal sac involvement, 6 cases had recurrence within the 1 year follow up. 2 cases that underwent repeat excision developed lacrimal fistula on follow up. Complete excision is very difficult in lacrimal sac infections, especially because of the severe bleeding. This may lead to increased frequency of recurrence in lacrimal sac lesions. Thus repeated excisions due to recurrence may leave behind a lacrimal fistula which is quite characteristic of this condition.

The low recurrence in rhinosporidiosis cases involving the conjunctiva and lid may be due to a short follow up period. Further the larger recurrence in oculosporidiosis of lacrimal sac despite electro cautery may be due to difficult surgical removal and easy extension to nasolacrimal duct. Our retrospective review by virtue of its small number of cases and limited follow up, does not allow general comment to be made which requires larger case series.

In conclusion meticulous excision using the electro cautery probably leads to good outcome in total removal of oculosporidiosis from all sites with lesser recurrence with the exception of lacrimal sac probably because of its easy extension to the nasolacrimal duct.
REFERENCES


Probing of Lacrimal Passage in Congenital Dacryocystitis

Dr. Dilip Kumre, Dr. Natwarsingh Parihar, Dr. Mona Deshmukh

Congenital nasolacrimal duct obstruction is the most common cause of epiphora in newborns and infants. The incidence of this condition has been estimated to be between 20-30% of newborns. But only 1% to 6% of these children become symptomatic. The most common form of congenital nasolacrimal duct obstruction is caused by persistent layer of lacrimal and nasal epithelial cells at the level of valve of Hasner. Spontaneous resolution occurs in 80-96% of affected infants by one year of age. In patients in whom the condition persists, the common cause is failure of the nasolacrimal duct to canalize.

Aim of the study is to investigate the effects of probing of lacrimal passage in congenital dacryocystitis.
**MATERIALS AND METHODS**

A retrospective study was done in 34 children who underwent probing for congenital nasolacrimal duct obstruction. Out of these 24 were male and 10 female. The study period was from 20th Sep. 2010 to 31st March 2011. Patients were in between 13 months to 4 years of age. Patients were initially examined for lacrimal puncta, assessing anomalies of the lids or face, conjunctivitis, allergic inflammation and other causes of epiphora in children. The diagnosis of congenital nasolacrimal duct obstruction was based on history of watering and/recurrent mucopurulent discharge beginning during the first few weeks of life, and on clinical examination by reflux of the contents of lacrimal sac on pressure. The procedure was performed under general anaesthesia. A Bowman's lacrimal probe was used in all cases. Probing in all cases was done through both upper and lower puncta. Bowman's probes are available in various sizes ranging from the size 0000 (0.7 mm diameter) to size 1 (1.1 mm diameter). Bowman's probe size 00 which measures 0.9 mm in diameter was used in all cases. The probe was introduced into the canaliculus until medial wall of the lacrimal fossa was felt and turned into nasolacrimal duct and advanced till resistance was felt. The breaking of the membrane was felt as the probe was advanced into the obstruction. The patency of the nasolacrimal system was checked by irrigation with saline from both upper and lower puncta. 2% fluorescein dye was added to normal saline. Patency was confirmed by placing a paediatric size suction catheter in the throat and detecting fluorescein stained saline through it. After probing each patient received tobramycin 0.3% eye drops four times daily for three weeks. Patients were followed at one week, one month, and then at three months after probing. Success of probing was defined as complete remission of watering, discharge and reflux of contents of the lacrimal sac on pressure at one week of the procedure.

**RESULT**

Two types of obstructions were encountered during probing - simple and complex. Simple obstruction is due to membrane at Hasner’s valve and the resistance could be easily bypassed with the help of the Bowman's probe and post probing syringing revealed a patent lacrimal system. Complex obstruction (non-membranous, firm, or complicated obstruction)
and submucosal passages are more resistant to probing and resulting in less success rates. Out of 68 eyes, 58 had congenital dacryocystitis. 45 eyes had simple obstruction and 13 had complex obstruction. 43(95.55%) eyes with simple obstruction were cured with probing of lacrimal passage while 11(84.61%) eyes having complex obstruction were cured. 3 eyes were having stenosis out of which 2(66.67%) eyes were cured. Subcutaneous edema was reported in one eye. Infection, asphyxia or aspiration was not reported in any patient.

**DISCUSSION**

Atresia of the nasolacrimal duct or dacyrostenosis is the most common cause of epiphora in infant. It is due to failure of the canalisation of the column of epithelial cells that form the nasolacrimal duct. The most common site of obstruction is at the mucosal entrance into the nose (valve of Hasner) under the inferior turbinate. Probing has been a time proven treatment for congenital nasolacrimal duct obstruction. Congenital nasolacrimal duct obstruction can be either membranous or complex. Children with membranous or simple obstruction had good success rate after probing irrespective of the age. The complex obstruction was identified as a major risk for the probing failure. All the failed cases in this study had a firm obstruction, explaining the cause for failure of probing in these cases. The possible complication of probing is creation of false passage or damage to the lacrimal epithelium which might produce stenosis and actually prevent later spontaneous resolution of the obstruction. The simple or membranous obstruction is cured by simple probing while complex or more severe obstructions might not open by simple probing and may require further surgical intervention at later age.

Kushner, Honavar et al showed success of probing in congenital dacryocystitis. Mac Ewen and Young, who followed a cohort of nearly 5000 infants and 96% children had spontaneous remission of their obstruction by the age of one year.

Probing should remain the primary surgical option for congenital nasolacrimal duct obstruction in children between 1 to 5 years of age. Kashkouli et al reported that bilaterality had no significant impact on cure rate.

In conclusion the effects of probing of lacrimal passage were related to the causes of obstruction of lacrimal passage and it is very important to scrupulously feel in probing lacrimal passage by palpation and determine site and cause of obstruction during probing in congenital dacryocystitis. Probing shows an effective result in simple obstruction.

**REFERENCES**

1. Dr.Rajat Maheshwari et al Step ladder approach for management of congenital nasolacrimal duct obstruction AIOC 2008 proceeding.


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