

Probing For Blocked Nasolacrimal Duct in Adults (An Alternative to D.C.R)

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An investigation was conducted into the efficacy of probing syringing the blocked nasolacrimal ducts (NLD) in adults with epiphora. It was done under local anaesthesia. Watering improved subjectively in 42% of the cases after a single procedure. This improvement was seen in only 16% in cases with mucocele and not in cases with pus regurgitation.

Key words: Blocked nasolacrimal duct, probing and syringing.

Aims of study

1. To investigate the causes of epiphora in adults particularly in elderly patients, who are mostly unfit for prolonged general anaesthesia required for D.C.R.
2. Epiphora could be relieved by a simpler shorter inexpensive technique, particularly before embarking on intraocular surgery.
3. To bring symptomatic relief to adult patients with epiphora.

Historical Background

In 1713 Anet recommended probing for NLD blockage followed by irrigation.

In 1857 Browman revised the method and showed that puncta and canaliculi could be dilated for the passage of N.L.D. with probes of graduated size which bear his name today.

In 1920 Technique fell off favour with Ohn's first suturing the nasal mucosa to the sac anteriorly and posteriorly (proper D.C.R.)

In 1966 Carras irrigated the lacrimal sac with a solution of penicillin and in a few cases a probe was passed down the nasolacrimal duct.

In 1986 Bell of Oxford revived the procedure of probing and syringing under local anaesthesia and claimed good results.

Patients and Methods

This study was done at the Institute of Ophthalmology, Mayo Hospital, Lahore as an outpatient procedure. Period involved was June 88s to June 90. Adult patients with a complaint of excessive watering of eye/eyes visiting hospital with this complaint or were picked at glaucoma surgery. Follow up period was (5-24 months).

P.A sac wash-out procedure was done to assess the function of nasolacrimal duct. Punctum was dilated with Nettlehip dilator.

A canula was introduced into the lacrimal sac and saline injected.

If the saline failed to enter the nasal cavity and throat; while the upper punctum was occluded; nasolacrimal duct was considered to be blocked.

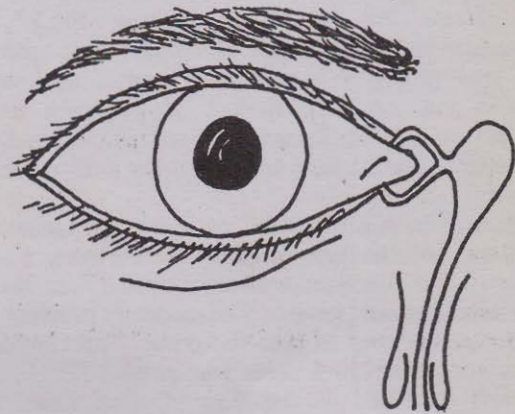
When pus or mucus regurgitated through the upper punctum on sac massage or syringing, diagnosis as

N.L.D. block and mucocele was made (Table). A total of 82 eyes were investigated by this method.

Table 1: The etiology of epiphora as determined by sac wash out.

Partial obstruction in NLD/functional	21
Common canaliculus block	3
Canaliculus block - Old trauma	8
NLD obstruction	40
NLD obstruction with mucus regurg	6
NLD obstruction with pus regurgitation	4
Total	82

Normal lacrimal drainage apparatus.



Blockage sites

- Punctum
- Canaliculus
- Common canaliculus
- Maso, LAC duct
- Inferior meatus

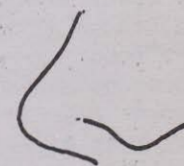
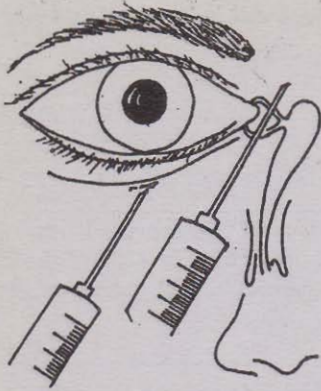


Fig. 1: Local anaesthesia for probing and syringing.

Those with traumatic fibrosis induced obstruction to lower canaliculus or common canaliculus and partial obstruction were excluded from the study. Six cases with mucocele and four pyocele were included in the study to evaluate their response to this technique. Age ranged from 30-81 year; males 18, females 32.



Local anaesthesia for probing and syringing
Fig. 2: Instruments used

Procedure

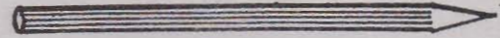
All cases were done under local anaesthesia, four drops of topical Novesine in 0.4% or Alcaïn 0.4% were instilled into conjunctival sac at 2 minutes interval. Inj. Xylocaine 2% (Lignocaine hydrochloride without adrenaline) was given 1cc (Fig.1 each at intra-orbital foramen/notch and intra-atrochlear level. Punctum was dilated with Nettleship dilator and a neurosurgeon's canula (1mm diameter) without stellate with rounded tip and a hole on the side on a saline syringe was introduced along the lower canaliculus into the lacrimal sac or a Leibreich probe zero gauge (1mm) was used for probing Fig.2. On encountering the medial wall of the sac and bone the canula was gradually swung into vertical position to engage in the nasolacrimal duct. It was then passed downward slightly backward and laterally, keeping in close contact with lacrimal bone until the end was in the inferior meatus.

Obstruction was frequently present at the junction of lacrimal sac and the duct. In adults the obstruction often offered mild to moderate resistance which was due to fibrotic adhesions and gave way to moderate pressure. No undue force was used to pass the probe. Probe failed to pass the obstruction in 4 cases who needed D.C.R. The probe next impinged on the floor of nasal fossa. The canula was lightly withdrawn and syringing done to confirm that fluid had gone into the nose and throat.

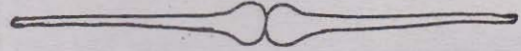
An antibiotic e.g. chloramphenicol 0.5% and Zinctrin drops were instilled and eye padded for ½ hour. Post operatively patients were instructed to do sac massage 4-6 times daily and to instill antibiotic and Zinctrin (Zinc sulphate + Adrenaline) drops four times each sac massage was advised to keep the sac empty and the newly opened passage to stay patent antibiotics were to combat infection and Zinctrin to act as decongestant to the traumatized passages to prevent reactive swelling leading to obstruction again.

Those with mucocele or pus had systemic antibiotics (Septran DS BD for 15 days) in addition. Patients were followed up in out patient clinic after two

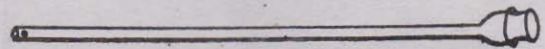
weeks, the symptoms were evaluated and further followed up as required.



Nettleship dilator



Bowman's lacrimal probe



Canula without stellate

Results

A total of 50 eyes with blocked N.L.D. had probing and syringing done. In four cases probing was not possible due to firm obstruction which could not be overcome by moderate pressure and underwent D.C.R. procedure. Out of the remaining 46 cases twenty one (42%) were symptom-free and considered cured. 15(30%) had initial improvement for a few weeks and then returned with original complaint of epiphora again, 10(20%) had partial relief from symptoms with the use of antibiotics and sac massage. Thus 42% had complete relief and 20% partial relief from their symptom. Patients with mucocele or pus fared worst, all ending up with original symptoms (Table 2).

Table 2: The results of 50 cases of probing and syringing.

Presentation	Improved	Not improved	Total
Watring of eye	21	19	40
Mucocele	1	5	6
Pus regurgitation	0	4	4
Total			50

Complications were bleeding, minimal and transient from punctum, slight traumatic inflammation which responded well to antibiotics. Recurrence was worse 38%

Discussion

Watring of the eye is a troublesome disease particularly in elderly, and a source of great caution for the surgeon who is soon going to do an intraocular procedure (cataract or glaucoma) on these eyes for fear of infection. Most of these elderly patients are poor risk for the general anaesthesia which is required mostly for doing dacryocysto-rhinostomy (D.C.R.) procedure.

A single probing procedure performed on patients with simple nasolacrimal duct obstruction resulted in 42% of cure in symptoms. The trouble was reduced in another

20% cases though they needed sac massage and off and on antibiotic drops (8%) a cases with strong obstruction to passage of probe were primary failure while another 30% become failure with the passage of time.

Conclusion

It is not as good a procedure as D.C.R. but it cuts down the misery of the sufferer to a great extent. It is a simple, inexpensive and safe procedure to try at least while waiting for the proper time and health status of the patient to under go D.C.R. procedure.

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