

Chronic Dacryocystitis – It's Evaluation and Management by Various Investigative and Diagnostic Test

¹,Dr. Pervez Ahemed Siddiqui , ², Dr. SumanBalaBandil ,
³, Dr. SwapneshSukhadave

¹,M.B.B.S, M.S (Ophthalmology) Professor Department of ophthalmology
N.S.C.B. Medical College, Jabalpur (M.P.)

², M.B.B.S, M.S. (Ophthalmology) N.S.C.B. Medical College, Jabalpur (M.P.)

³,M.B.B.S, M.S,(Ophthalmology) Resident P.G. N.S.C.B. Medical College Jabalpur
Boy's Hostel No.1 Room No. 04 N.S.C.B. Medical College Jabalpur .

ABSTRACT AIM :-Dacryocystitis is a common ailment encountered in ophthalmology practice and we had tried to find mean and measure to combat this malady with best possible measure.

Material and Method :- This study was conducted in 131 eyes of 100 cases of chronic dacryocystitis attending the ophthalmology out patient department of NSCB Medical College and Hospital Jabalpur during the year 2008-2013.

Every patient was subjected to fluorescein dye disappearance test, primary and secondary Jones test followed by syringing. There after dacryocystography was performed by injecting a radiographic contrast material under local anesthesia.

Observation :- There were 76 female and 24 male, there was almost equal distribution of cases as far as right eye and left eye was concerned, 37% in right eye and 32% in left eye and 31% patient had bilateral involvement. Presenting complaints in patient were epiphora 46 %, epiphora with swelling 18% epiphora with discharge 21% epophora and discharge with swelling in 15% Chronic danyocytitis without swelling was present in 62.59%, mucocele in 19.08% pyocele in 12.21% fistula was present in 6.01%

Result – During this study on syringing 22.90% showed regurgitation from same punctum and 77.10% showed regurgitation from upper punctum. On dacryocystography complete block was present in 78.8% and partial block was present in 21.2%, common canaliculi junction was blocked in 16.79%, valve of Krause was blocked in 60.30%, valve of hasner was blocked in 22.90%, Normal sac was present in 12.21%, enlarged sac was present in 74.80% fibrosed sac was present in 12.97%

Conclusion :-Dacryostography is a safe modality in localising the site of block and meticulously planning out the treatment.

INDEX TERMS:-dacryocystitis, epiphora, ethiodol.

I. INTRODUCTION :

Lacrimal apparatus is one of the important structure of ocular appendage. Its malfunctioning poses neumerous unavoidable difficulties in proper functioning of ocular tissues. The lacrimal milieu of the ocular structures goes through a period of serious malfunctioning.Lacrimal passage obstruction is a common condition encountered in clinical practice. With very few exception dacryocystitis is the result of obstruction in any part of tear drainage system, except in very young (in whom the cause is congenital occlusion)

AIMS AND OBJECTIVES :

1) To Evaluate and analyze patients suffering from various type of dacryocystitis. 2) To use dacryocystography to evaluate the anatomical irregularity, functional capability and pathological abnormality of lacrimal sac. 3) To Use the modality of dacryocystography to delineate the level of blockage in patient with dacryocystitis. 4)To use dacryocystography to differentiate between idiopathic and pathological dacryocystitis. 5)To use the study as means and measure to fmd the best possible modality of correction of dacryocystitis)

II. MATERIAL AND METHOD

This study has been carried out in 131 eyes of 100 cases of chronic dacryocystitis of different age groups attending the Ophthalmology Out-patient department of N.S.C.B.(Govt) .Medical College and Hospital, Jabalpur (M.P.) during the year 2008 — 2013.

Fluorescein Dye Disappearance Test: Our drop of 2% sodium fluorescein was instilled into each lower conjunctival cul-de-sac. If, after five minutes, there was little or no dye left, the excretory system is normal. A large amount of residual dye, especially if it is seen spilling over the eyelid margin onto the cheek, indicates an obstruction.

JONES TEST *Primary Jones Test* : was done by instilling one drop of 2% fluorescein dye into the conjunctival sac. A cotton tipped applicator, moistened or soaked with 1:10 adrenaline and 4% lignocaine, inserted below the inferior turbinate, if the dye stains the application, then the naso-lacrimal passage is normal. If there was no staining of applicator within 5 minutes; then requested to blow the nose on a tissue paper, if green stain is seen on the applicator, then it indicates a normal naso-lacrimal passage. *Secondary Jones Test:* If the primary test was negative then only the secondary test was performed. After 5 minutes, the conjunctival sac was flushed with normal saline to remove the residual fluorescein dye and then the clear normal saline was injected into the lacrimal sac; if fluorescein appeared into the nose after injecting the saline then there is a partial obstruction of naso-lacrimal duct, means upper segment of canaliculus was normal. If no fluorescein dye was recovered and the irrigant saline clear, then the upper segment is at fault, (Negative test) and it may be due to canaliculus block. If no fluid (i.e. no dye or saline) was recovered from the nose, then there is a complete block of lacrimal passage.

SYRINGING :- The patients were subjected to syringing and results were interpreted as follows : If after 13 to 30 seconds of injection of saline patients appreciated taste of salt and swallowing reflex was awakened and no saline came back from the punctum in which the saline is being injected or from the opposite punctum, the lacrimal passage was full patent. If some saline passed into the nose and some regurgitated back from either of the puncta; the passage was partially patent. If a swelling appeared over the sac region, as the saline was injected but no regurgitation occurred, and on pressure applied at the sac region the fluid went down the nose; it suggested a functional block at the level of nasolacrimal duct. If saline regurgitated back from the same punctum and no taste of salt was appreciated it suggested canalicular obstruction. If the injected saline caused regurgitation of mucus like or pus like fluid from the same and opposite punctum after some delay it suggested block at the level of the junction of sac and nasolacrimal duct. Furthermore if pressure is applied over sac area and regurgitation occurred, it supported the diagnosis of the site of the block.

TECHNIQUE OF DACRYOCYSTOGRAPHY: There are various methods of performing dacryocystography. In this study dacryocystography was performed by injecting a radiographic contrast material into the lacrimal drainage passageways with a cannula. This technique has the advantage of being relatively simple and inexpensive, and it provides exquisite anatomical detail of the nasolacrimal system. The two main formulations for contrast media for dacryocystography have been either oil-based or water-based. Oil based dye (Ethiodol) produce higher quality images of the lacrimal sac than water soluble dye. Injection of any oil-based dye should be performed with care since any dye which extravasates into soft tissue will produce prolonged inflammation. After obtaining appropriate written consent from the patient procedure was performed. Under topical anesthesia, lower lid punctum was dilated, a lacrimal cannula was then inserted into the lower lid canalicular system and water soluble contrast material (Iohexal) is injected into the lacrimal drainage system. Serial postero-anterior and lateral x-ray films of orbit were taken with the patient in sitting position immediately after injection and then after 30 minutes later. A delay in emptying time, or a failure of the dye to appear in the nasal cavity or nasopharynx indicated an obstruction.

The Normal dacryocystography shows the following features: 1- Dye in the nose indicates a patent duct. 2- Usually canaliculi are visualized poorly, but if seen clearly, it indicates impaired flow. 3- Lacrimal sac 2-3 mm wide gradual broadening below with concavity laterally and constriction at the lower end. 4- Usually the naso-lacrimal duct is seen filled in upper and lower one third; sparsely filled in middle one third; and lower end shows hockey stick curvature. Normal lacrimal sac gets emptied within 15 minutes. Therefore any residual dye after 30 minutes in lacrimal passage (which is patent on syringing) indicates functional block i.e. there may be failure of lacrimal pump or partial obstruction of lacrimal sac or naso-lacrimal duct.)

Observations

Following observation were found

Table No. 1

Sex	No. of Cases	Percentage
Female	76	76.25%
Male	24	23.75%
Total	100	100%

Table showing sex incidence

Table No. 2

Side affected	No. of eyes	Percentage
Left	37	37%
Right	32	32%
Bilateral	31	31%

Table showing Laterality

Table No. 3

Clinical Features	No. of eyes	Percentage
Epiphonra	46	46%
Epiphora with swelling	18	18%
Epiphora with discharge	21	21%
Epiphora and discharge with swelling	14	14%

Table showing Presenting Complents

Table No. 4

Clinical Types	No. of eyes	Percentage
Chronic Dacryocystitis with Swelling	82	62.59%
Mucocele	25	19.08%
Pyocele	16	12.21%
Fistula	8	6.01%

Table showing Clinical type of Dacryocystitis

Table No. 5

Result	No. of eyes	Percentage
Regurgitation from same punctum	30	22.90%
Regurgitation from upper punctum	101	77.10%

Table showing results of Syringing

Table No. 6

Block	No. of eyes	Percentage
Complete block	102	77.86 %
Partial block	29	22.14%

Table showing results of Syringing

Table No. 7

Level of block	No. of eyes	Percentage
Common canaliculi junction	22	16.79 %
Valve of Krause	79	60.30%
Valve of Hasner	30	22.90

Table showing Level of Block detected during dacryocystography

Table No. 8

Condition of sac	No. of eyes	Percentage
Normal Sac	16	12.21%
Enlarged sac	98	74.80%
Fibrosed	17	12.07%

Table showing Condition of Sac on dacryocystography

Table No. 9

Complications	No. of eyes
Dryness, burning, irritation	1
Flushing, Bad taste	1
Scarring of punctum	0
Granulomatous inflammation in subcutaneous tissue	0
False impression of polycystic sac	0

Table showing Complication of Dacryocystography

Table No. 10

Treatment advised	No. of eyes	Percentage
Dacryocystectomy	17	12.67%
Dacryocystorhinostomy	116	87.33%

Table showing Treatment advised

III. DISCUSSION :

The study entitled "Chronic Dacryocystitis – It's Evaluation And Management By Various Investigative And Diagnostic Test" was carried out in the upgraded Department of Ophthalmology, N.S.C.B. Medical College and Hospital, Jabalpur (M.P.) between 2008-2013. The study comprised of 131 eyes of 100 cases, which were selected randomly from Eye OPD, of chronic dacryocystitis, above 18 years, of age of both sex. Syringing of the lacrimal passage was done with normal saline in all cases. After Lacrimal sac Syringing those patients were selected who showed obstruction of Nasolacrimal duct with regurgitation of fluid from punctum. Conventional dacryocystography was done in all these patients using water soluble contrast medium (Iohexol) to find the exact site of obstruction, condition of sac, whether the obstruction is unilateral or bilateral, correlating these findings with age group, gender and other factors. Patients suffering from Acute dacryocystitis, having congenital obstruction of lacrimal passage, suffering from ENT disorder or pathology were not included for dacryocystography. Maximum number of cases of chronic dacryocystitis belongs to fourth - fifth decade of age (between age group 41-60 year (57.5%) (H Basil, Jacob H 1959) Female are found to be more affected by chronic dacryocystitis as compared to males 76.25%. (Shellinni et al 2005) Chronic dacryocystitis affects both sides equally, but there is a slight higher percentage of affection towards left side. (Stallard 1973) Epiphora was the major presenting complaint followed by associated swelling and discharge. (Prof. P Siva Reddy) It was found that majority of patients were of chronic simple dacryocystitis, which was the commonest mode of presentation of dacryocystitis (69.2%). (Pande 1967) In syringing, 80.8% i.e. maximum number of cases had regurgitation from upper punctum. Complete block is more common than partial block Valve of Krause (61,2%) cases, is the most common site of lacrimal passage obstruction followed by value of Hasner, thus correlating our findings of dacryocystography with findings from syringing test. (Francisco FC, et al 2007) On dacryocystography, Enlarged sac was found in maximum number of cases (61.5%). Water soluble dye is the safe contrast media. dacryocystorhinostomy was advised in maximum number of cases (74.1%), according to dacryocystography findings. Thus it is evident from the findings elucidated in the study that dacryocystography is an extremely safe modality in the hands of skilled radiologist and ophthalmologist alike. In our opinion it can be safely presumed that every person suffering from Chr. dacryocystitis should undergo dacryocystography, as it is a valuable adjunct in localising the site of block and meticulously planning out the treatment for curing the melody in a much better fashion, thereby providing a better outcome after surgical maneuver. (Hartikainen J, et al 1998)

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