



CASE REPORT

FUNCTIONAL NASOLACRIMAL DUCT OBSTRUCTION(FNLDO)WITH LACRIMAL SAC SWELLING-A SPECIAL CASE REPORT

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ABSTRACT

**Background:** Functional Nasolacrimal Duct Obstruction describes patients with epiphora where the tear duct is anatomically partially or completely patent. Most cases in our set up show anatomical obstruction. FNLDO cases are difficult to diagnose. The main cause has been found to be failure of lacrimal pump. Several Treatment Options For FNLDO has been studied like silicon intubation with a success rate of 53-60%; balloon catheter dilatation with success rate 53-68% and ext-DCR 50-94%

**Materials and methods:** A 42 year old male presented to us with history of swelling over right lacrimal sac for last 2 years along with epiphora. On syringing lacrimal passage was freely patent. CT, MRI, MRA (angiogram) were done. Radiographic pictures raised suspicion of Right Sided Lacrimal Mucocele / Dacryocystocele/Malignant Mass of 25 ×25 mm. A diagnosis of lacrimal pump failure was made. Patient underwent Surgical Exploration followed by Ext-DCR.

**Results:** The patient has undergone external-DCR and was symptomatically relieved as on 1<sup>st</sup> and 2<sup>nd</sup> follow up respectively .

**Conclusion:** Patients with functional obstruction of lacrimal drainage are difficult to diagnose. It appears that no standardized approach exists in the assessment of such cases. Most preferred clinical tests are Jones dye test 1 & 2 and FDDT (FLUORESCIN DYE DISAPPEARANCE TEST). The later is mainly preferred in case of children Radiographically demonstrated functional block in a patient with chronic epiphora is an indication for DCR and patients respond as dramatically as those with anatomical blockage.

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INTRODUCTION

Functional Nasolacrimal Duct Obstruction (FNLDO) has been seen to present with epiphora with evidence of abnormal tear drainage but where the nasolacrimal duct is completely patent on syringing<sup>1</sup>. Demorest & Milder 1<sup>ST</sup> introduced the term “functional block” in 1955 as cases with Clinically Patent Nld With Abnormal Dacryocystogram (distended lacrimal sac and retention of dye)<sup>2</sup>. In 1975 the term was modified by Hurwitz *et al* as “epiphora with normal dacryocystogram”.<sup>3</sup> The cases of FUNCTIONAL BLOCKAGE is diagnosed when there is epiphora in the absence of obstruction to the outflow of tears , ocular surface disorders and causes of hyper lacrimation. The main cause is said to be failure of lacrimal pump. Several Treatment Options For FNLDO has been studied like silicon intubation with a success rate of 53-60%<sup>4,7</sup> ; balloon catheter dilatation with success rate 53-68%<sup>4,5,6</sup> and ext-DCR 50-94%<sup>8,9</sup>

Case Report

A 42 year old male came with chief complains of watering right eye for 3 year and swelling in right lacrimal sac area for 2years. The patient gave the history of watering from right eye for last 3 years which started gradually. Watering was not associated with any other symptom like diminution of vision, irritation, foreign body sensation, redness, photophobia or pain and any kind of discharge. The patient developed a swelling over the right lacrimal sac area for last 2 years. Started as a small swelling gradually developing into the present size. On pressing over the swelling he could feel water into nose and throat with reduction of size of the swelling. Swelling was not associated with pain/tenderness. He developed occasional headache relieved with analgesics. The general condition of the patient was good. On ocular examination vision was normal and Extra-ocular movement was full free painless in both eyes. The right eye showed increase tear meniscus size and swelling

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overlacrimal sac area almost 2 ×2 cm in size, round, cystic, non tender, reducible to some extent with positive transillumination testno external fistula was noted,ROPLAS TEST negative.Rest Ant. Segment findings were normal in both eyes.



**Investigations**

**On Syringing** –hard stop with total patency of NLD

**Jones dye test 1 : negative**

**Jones dye test 2 : positive**

**ENT check up showed-** mild deviated nasal septum on the right nostril but no intervention was required. Rather he was prescribed decongestant and anti histaminic which relieved his headache. All routine investigations were normal.

Based on the clinical findings provisional diagnosis of Atonic Lacrimal Sac Right Side was made and patient was prepared for ext-DCR. But on table aspiration of lacrimalsac (out of suspicion of content of the swelling) with a 20 gauge needle – some amber coloured fluid was aspirated almost 4cc in volume with decrease in size of the swelling but not yet emptied. The characteristic of fluid raised suspicion of some abnormal internal connection with CNS,major vessels; adnexa.Operation was postponed, and fluid was sent for study(physical, chemical, culture and sensitivity).We sent the case to Neurosurgery for an assessment where he was advised CT, MRI.and Angioeram.



Fig: the first picture shows amber coloured fluid aspirated from the sac area and the 2nd picture shows reduction of the sac swelling following aspiration:

- Results of Fluid study for physical chemical and cytological analysis:

PHYSICAL	
Volume	2.5ml
COLOUR	AMBER
appearance	hazy
coagulum	Absent(ruled out CSF)
Deposit	present
CHEMICAL study	normal
Cytological	Inflammatory debris in proteinaceous background

- Microbiology study - negative
- CT and MRI ORBIT and Magnetic Reasonance Angiography(MRA) was done as suggested from neurosurgery side.
- CT Showed **hyper dense lesion measuring 25 ×25 mm in infero -medial aspect of right orbit abutting the NLD and associated mucosal**

**Thickening.** Impression given was of Nld Mucocele Followingchronic Dacryocystitis/Dacryocystocele/Malignant Mass



fig ct scan picture showing hyperdense lesion(rt)

**MRI Orbit Showed:** Hyperintense lesion in Rt. Lacrimal sac region suggestive of proteinaceous /haemorrhagic collection protruding to the proximal nasolacrimal duct suggestive of dacryocystocele(?) Smaller collection of 1 × 0.3 cm in size noted in left lacrimal sac region also. Rest details of eyeball was normal. MRA showed no connection with vessel( Ophthalmic Artery and Branches)



Fig Axial plane MRI showing hyperintense lesion in Rt. Lacrimal sac area.

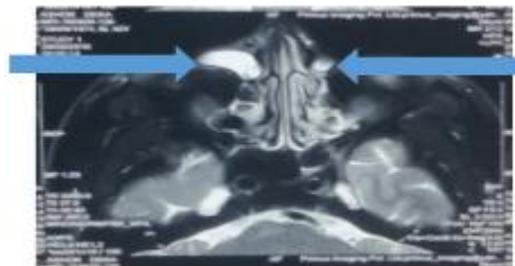
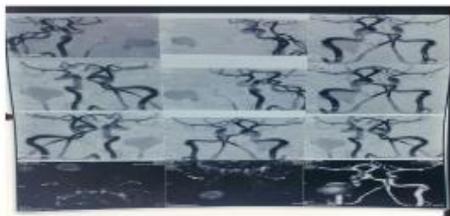


Fig coronal plan mri showing fluid collection in rt. Side and also some amount in the left



Magnetic Resonance Angiogram of Ophthalmic arteries and veins

**Final diagnosis:** based on all clinical findings and investigations final diagnosis made was ATONIC DIALATED LACRIMAL SAC DUE TO PUMP FAILURE.

**Management**

The patient has undergone external-Dacryocystorhinostomy of right side and is symptomatically relieved as on 1 and 2 post op check up. He is being advised for follow up for the left side although he is symptomless at present.



Fig: post op pic of patient and CT scan which show absence of the mass.

**CONCLUSION**

Patients with functional obstruction of lacrimal drainage are difficult to diagnose. It appears that no standardized approach exists in the assessment of such cases. Most preferred clinical tests are Jones dye test 1 & 2 and FDDT (FLUORESCINE DYE DISAPPEARANCE TEST) in cases of children where irrigation is not possible. Contrast dacryocystography and dacryoscintigraphy aid in evaluation of the anatomy and function of the lacrimal drainage system. However, they are now used infrequently primarily because alternate methods of evaluation, such as simple irrigation and modern imaging techniques (CT and MRI) are available. Radiographically demonstrated functional block in a patient with chronic epiphora is an indication for DCR and patients respond as dramatically as those with anatomical blockage.<sup>9,10</sup>

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