

Clinico-epidemiological profile in chronic dacryocystitis patients undergoing ENDO- DCR revisited with an updated review

Introduction

Dacryocystitis’ term is derived from Greek word meaning *dákryon* (tear), *cysta* (sac), and *-itis* (inflammation). Chronic dacryocystitis is chronic inflammation of the lacrimal sac most probably a sequela of nasolacrimal duct obstruction (NLDO). It usually results from blockage of the tear flow into the nose. It can lead to bothersome epiphora, recurrent infection, lacrimal abscess formation and eventually scarring and fibrosis of tear drainage system. Surgical intervention might be necessary to treat the condition in order to re-establish tear flow.

Materials & methods

A total of 41 eyes (34 subjects) with chronic dacryocystitis with acquired causes of NLDO undergoing Endoscopic Dacryocystorhinostomy (ENDO-DCR) were enrolled in the study in a period of 1 year. This was an observational study; NLDO was confirmed by syringing via the lacrimal punctum. Other causes of epiphora, common canalicular block or malignant causes leading to chronic dacryocystitis were the exclusion criteria. Diagnostic nasal endoscopy was done to assess the need to address the co-existing sinonasal pathologies & treat them concomitantly. After all investigations, the patients underwent ENDO-DCR. Intraoperatively, after incising the lacrimal sac, swab was taken for culture sensitivity.

Results

The disease was most prevalent in middle aged females with low socio-economic status. Mostly there was unilateral involvement (79.4%) and left eye (61%) involvement was seen more than right eye. Epiphora was the commonest presenting complaint in all 41 (100%) subjects followed by swelling near the medial canthus in 31 cases (76%). Nasal examination based on nasal endoscopy revealed the coexistent nasal pathologies with deviated nasal septum being commonest (7, 21%), followed by pus in middle meatus in 2 cases (5.9%). 24% cases underwent additional nasal procedures for gaining good access, Septoplasty was the commonest concomitant procedure performed in 7 cases (21%).

Total patients: 34 subjects (N=41 eyes), M: F= 1:5.8		Age of presentation: MC* in 25–35-year age group	
Rural: 26 (76%), Urban: 8 (24%)		Socio-economic status: Lower class	24 (70%)
		Middle class	5 (15%)
		Upper class	5 (15%)
Unilateral eye involvement	27 (79.44%)	Left eye involvement	25 (61%)
Bilateral eye involvement	7 (20.6%)	Right eye involvement	16 (39%)
Duration of disease under study(years)		Nasal symptoms: Obstruction	2 (5.8%)
0 – 1		Discharge	4(11.7%)
1 – 2		Headache	2 (5.8%)
2 – 3		Crusts	1 (2.9%)
3 – 4		Sneezing	0
Ocular symptoms: watering of eyes		41 (100%)	
Swelling		31 (76%)	
Fistula		4 (9.7%)	
Pain		2 (4.8%)	
Congestion		3 (7.3%)	
Stickiness		4 (9.7%)	
Periorbital swelling		2 (4.8%)	
Redness around the eye		1 (2.4%)	
Ocular examination: Epiphora		41 (100%)	
Swelling medial canthus		31 (76%)	
Fistula		4 (9.7%)	
Roplas test		38 (93%)	
Congestion		3 (8.8%)	
Pus discharge		10 (29.4%)	
Periorbital swelling		2 (5.8%)	
Redness around the eye		1 (2.9%)	
Adjuvant procedure with DCR:			
Septoplasty		7 (17%)	
Uncinectomy		2 (5%)	
Anterior ethmoidectomy		0	
Turbinate resection		0	
Conchoplasty		1 (2%)	
Synechiae release		1 (2%)	
		Stages:	
		Chronic catarrhal dacryocystitis (DC)	5 (12.1%)
		Chronic DC with lacrimal mucocele	17 (41.5%)
		Chronic suppurative DC	10 (24.4%)
		Acute exacerbation of Chronic DC + cellulitis	2 (4.8%)
		Acute exacerbation of Chronic DC + lacrimal abscess	3 (7.3%)
		Acute exacerbation of Chronic DC + lacrimal fistula	4 (9.7%)
		Nasal examination: DNS	7 (21%)
		Pus in middle meatus	2 (5.9%)
		Crusts	1 (2.9%)
		Atrophied turbinate	1 (2.9%)
		Synechiae	1 (2.9%)
		Concha bullosa	1 (2.9%)
		Bacteriology:	
		Oxacillin sensitive coagulase+ve staphylococcus	20(48.7%)
		Oxacillin resistant staphylococcus	4 (9.7%)
		Enterobacteriaceae	11 (27%)
		Pseudomonas	2 (5%)
		Mycobacterium tuberculosis	1 (2.5%)
		No pathogen seen	15 (37%)

Oxacillin sensitive coagulase positive *Staphylococcus* was the most common organism isolated (24, 59%), followed by Next common organisms isolated were *Enterobacteriaceae* in 11 cases (27%), *Pseudomonas* in 2 (5%) cases, *Mycobacterium tuberculosis* in one case (2%). All the bacterial organisms isolated were sensitive to fluoroquinolones and thus all the operated cases in our study were discharged on a treatment regime of oral Ciprofloxacin 500 mg twice a day for a period of 7 days.

Discussion

Dacryocystitis (inflammation of lacrimal sac), results from complete or partial NLDO.^[1] It shows decreasing trend towards extremes of age, due to the lesser lacrimal secretions in extreme ages. Female preponderance seen in many studies may be because a) Menstruation & hormonal fluctuation (causing mucosal thickening and de-epithelisation within lacrimal sac/duct. b) Narrower diameter of NLD in females 3.35mm (Males 3.7mm) c) Cosmetics use like kajal contributes to infection of NLD. d) Exposure to smoke fumes in kitchen & dusty environment.^[2] The hallmark of chronic dacryocystitis is constant tearing (Epiphora).

Clinical picture of chronic dacryocystitis may be divided into four stages. In our study most of the patients presented in the mucocele formation stage (swelling medial canthus). Recent studies have showed that acute dacryocystitis with lacrimal abscess is an ideal case of endoscopic DCR. The lacrimal sac can be incised endonasally with the endoscope and abscess is drained into the nose in the same sitting. Thus, unnecessary systemic antibiotics, infections, risk of fistula formation, & recurrent dacryocystitis during waiting for external DCR can all be avoided.^[3] On clinical examination Roplas test (regurgitation on pressing medial canthus) was positive in 38 (93%) cases indicating NLDO (specificity 99% and sensitivity 93%).

A good accessibility & wide exposure to the lacrimal area is important to achieve higher success rates. Other concomitant procedures like septoplasty, uncinectomy, FESS (for nasal polyposis), middle turbinectomy or Conchoplasty and Ethmoidectomy also facilitate exposure of lacrimal sac area. The bacteriology of pus is of utmost importance with Staphylococcus (ciprofloxacin sensitive) as the predominant species is well supported by the other authors. (Sun Xuguang et al in 2005 revealed gram positive cocci as the commonest pathogen and Levofloxacin & Amikacin as the most effective antibiotics).^[4] In present study a case of tubercular dacryocystitis was reported which is a rare secondary cause of NLDO. In cases of recurrent dacryocystitis despite previous lacrimal surgery, secondary causes such as granulomatous disease (Wegener's Granulomatosis, sarcoidosis and tuberculosis) especially in young patients, should also be taken into consideration.

Conclusion

- 1.Improved understanding of clinico-epidemiological profile of chronic dacryocystitis can help to modify the disease process.
- 2.ENDO -DCR has emerged as a promising tool in treating the condition in acute phase, with lacrimal abscess,.
- 3.ENDO-DCR has an added advantage of treating simultaneously the coexistent nasal pathologies.
4. Taking bacteriology into account, can help to make the choice of antibiotics with decrease in resistant cases.
- 5.This study illustrates the value of complete lacrimal passage assessment, to identify abnormal mucosa and perform biopsies if suspected.

References

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