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PATHOLOGICAL STUDY OF LACRIMAL SAC SPECIMENS OBTAINED DURING EXTERNAL DACROCYSTORHINOSTOMY IN TERTIARY CARE HOSPITAL.

Ophthalmology

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ABSTRACT

Objective: This study aims to evaluate the histopathological diagnoses of lacrimal sac specimens collected from adult patients undergoing external dacryocystorhinostomy (DCR) due to acquired nasolacrimal duct obstruction. **Methods:** A total of 80 lacrimal sac biopsies were collected from 80 patients undergoing external DCR due to symptoms indicative of acquired nasolacrimal duct obstruction. The specimens were analyzed histopathologically. **Findings:** Among the 80 patients included in the study (66 females and 14 males), the mean age was 57.04 years (ranging from 25 to 74 years). All patients presented with epiphora, and 12 had a history of acute dacryocystitis. The histopathological findings revealed chronic inflammation in 79 cases, while fibrosis was observed in one patient. **Conclusion:** Chronic inflammation is the predominant histopathological finding in lacrimal sac specimens obtained from patients undergoing DCR.

KEYWORDS

Dacrocystorhinostomy, Nasolacrimal, Duct Obstruction, Inflammation

INTRODUCTION:

Chronic inflammation of the lacrimal sac is the most frequently observed histopathological feature in patients undergoing DCR for acquired nasolacrimal duct obstruction [1,2,3]. While uncommon, other pathological alterations such as infections, systemic inflammatory conditions, and tumors (either primary lacrimal system tumors, secondary invasion from adjacent structures, or metastases from distant sites) may be present[3].

Lacrimal sac tumors, although rare, can pose significant health risks. Patients with such tumors may exhibit symptoms like bloody tears, palpable masses, or bloody reflux upon diagnostic lacrimal irrigation [3]. However, some cases may mimic chronic dacryocystitis or involutional nasolacrimal duct obstruction, leading to delayed diagnosis and treatment[2]. The prevalence of lacrimal sac tumors in patients undergoing DCR varies across studies, ranging from 0% to 12.5% [4,5]. While some researchers advocate for routine biopsy of the lacrimal sac during DCR [1], others argue that biopsy should only be performed in suspected cases [5,6]. This study aims to analyze histopathological changes in the lacrimal sac of 80 adult patients undergoing external DCR for acquired nasolacrimal duct obstruction.

METHODS:

From February 2023 to February 2024, 80 lacrimal sac specimens were collected from patients undergoing external DCR at the Postgraduate Department of Ophthalmology, Sher-i-Kashmir Institute of Medical Sciences and Hospital, Bemina, Srinagar, a tertiary care facility.

Prior to surgery, informed consent was obtained from all patients after a thorough explanation of the procedure. Ethical approval was granted by the institutional ethics committee.

Patient demographics, presenting symptoms, duration of symptoms, laterality, and any associated systemic diseases were recorded from medical files. The assessment of the lacrimal drainage system involved clinical inspection, palpation of the lacrimal sac, and diagnostic lacrimal irrigation. Standard external DCR was performed, and a biopsy was obtained from the inferior lacrimal sac flap before suturing the nasal and lacrimal sac flaps. The biopsy specimens were preserved in 10% formalin for histopathological evaluation.

RESULT:

A total of 80 patients (66 females and 14 males, mean age: 55.04 years, range: 25–74 years) underwent external DCR for acquired nasolacrimal duct obstruction.

All patients presented with epiphora, and 12 had experienced acute dacryocystitis. The duration of symptoms ranged from 6 to 24 months. Histopathological analysis revealed chronic inflammation in 79 cases (98.75%) and fibrosis in 1 case (1.25%).

Table 1: Demographic Characteristics Of Patients

	Total	M	F
Number of patients	80	14	66
Age (years)			
Mean	55.04	50.03	43.02
Range	25-74	25-74	25-74

Table 2: Histopathology Findings Of Lacrimal Sac Biopsy Specimens.

Chronic inflammation	79
Fibrosis	01

DISCUSSION

Several previous studies have examined the histopathological features of lacrimal sac specimens obtained during DCR. Some studies support routine biopsy during DCR, citing significant findings of unsuspected pathologies. Anderson et al [1]. reviewed 377 DCR specimens and identified inflammation in 85% of cases, while 8.2% exhibited significant pathology, including sarcoidosis, lymphoma, papilloma, and transitional cell carcinoma. Similarly, Linberg and MacCormick[4] found that 12.5% of patients undergoing DCR had unsuspected pathological conditions.

Conversely, other studies suggest that routine biopsy is unnecessary. Lee-Wing et al. [7] examined 202 lacrimal sac specimens and found no significant pathology. Mauriello et al [4]. also reported no cases of lacrimal sac tumors among 44 patients who underwent DCR. Additionally, a prospective study by Merkonidis et al [8]. involving 193 specimens from 164 patients found that 76% had non-specific inflammation, while only 1.2% had specific pathology (sarcoidosis or papilloma). The largest study in this category, conducted by Bernardini et al [9], analyzed 302 specimens and found that all significant cases (3.3%) were associated with abnormal lacrimal sac appearance or pre-existing systemic disease.

In our study, the most common histopathological finding was chronic inflammation (98.75%), with only one case of fibrosis (1.25%). No significant pathologies, such as neoplasms, were identified. Based on these findings, we conclude that routine lacrimal sac biopsy during DCR may not be necessary for all patients.

While routine biopsy could help detect unsuspected malignancies, it also presents potential drawbacks. Large biopsies may compromise flap integrity during anastomosis, whereas small biopsies may fail to detect underlying malignant lesions. Therefore, we recommend performing lacrimal sac biopsies only in cases where intraoperative findings suggest an abnormal sac appearance or when patients have concerning clinical features prior to surgery.

Declaration Of Interest: The authors have no financial or propriety interest in this study.

REFERENCES

[1] Anderson NG, Wojno TH, Grossniklaus HE. Clinicopathologic findings from lacrimal sac biopsy specimens obtained during dacryocystorhinostomy. Ophthalmic Plast Reconstr Surg. 2003 May;19(3):173-6. doi: 10.1097/01.iop.0000066646.59045.5a. PMID: 12918549.

[2] Tucker N, Chow D, Stockl F, Codère F, Burnier M. Clinically suspected primary acquired nasolacrimal duct obstruction: clinicopathologic review of 150 patients. Ophthalmology. 1997 Nov;104(11):1882-6. doi: 10.1016/s0161-6420(97)30012-8. PMID: 9373121.

[3] Bosniak, Stephen, Principles and practice of ophthalmic plastic and reconstructive surgery, Sunders company 1996; 2, chapter 78, 797–814.

[4] Linberg JV, McCormick SA. Primary acquired nasolacrimal duct obstruction. A clinicopathologic report and biopsy technique. Ophthalmology. 1986 Aug;93(8):1055-63. doi: 10.1016/s0161-6420(86)33620-0. PMID: 3763155.

[5] Kheterpal S, Chan SY, Batch A, Kirkby GR. Previously undiagnosed lymphoma presenting as recurrent dacryocystitis. Arch Ophthalmol. 1994 Apr;112(4):519-20. doi: 10.1001/archopht.1994.01090160095027. PMID: 8155051.

[6] Lee-Wing MW, Ashenhurst ME. Clinicopathologic analysis of 166 patients with primary acquired nasolacrimal duct obstruction. Ophthalmology. 2001 Nov;108(11):2038-40. doi: 10.1016/s0161-6420(01)00783-7. PMID: 11713075.

[7] Nakamura K, Uehara S, Omagari J, Kunitake N, Kimura M, Makino Y, Ishigami K, Masuda K. Primary non-Hodgkin's lymphoma of the lacrimal sac: a case report and a review of the literature. Cancer. 1997 Dec 1;80(11):2151-5. doi: 10.1002/(sici)1097-0142(19971201)80:11<2151::aid-cncr15>3.0.co;2-y. PMID: 9392338.

[8] Merkonidis C, Brewis C, Yung M, Nussbaumer M. Is routine biopsy of the lacrimal sac wall indicated at dacryocystorhinostomy? A prospective study and literature review. Br J Ophthalmol. 2005 Dec;89(12):1589-91. doi: 10.1136/bjo.2005.072199. PMID: 16299137; PMCID: PMC1772997.

[9] Bernardini FP, Moin M, Kersten RC, Reeves D, Kulwin DR. Routine histopathologic evaluation of the lacrimal sac during dacryocystorhinostomy: how useful is it? Ophthalmology. 2002 Jul;109(7):1214-7; discussion 1217-8. doi: 10.1016/s0161-6420(02)01082-5. PMID: 12093640.