شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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جامعة عين شمس

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قسم

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Clinical -to- Pathological Correlation of Lacrimal Sac Specimens Obtained During Dacryocystorhinostomy Surgery

Thesis

Submitted for partial fulfillment of M.D degree in Ophthalmology

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دراسة إكلينيكية باثولوجية لعينات الكيس الدمعي التي تم الحصول عليها أثناء عملية توصيل الكيس الدمعي بالتجويف الأنفي

رسالة

توطئة للحصول علي درجة الدكتوراة في طب وجراحة العيون

مقدمة من

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Contents

List of Abbreviations

PANDO	:	Primary acquired nasolacrimal duct obstruction
SANDO	:	Secondary acquired nasolacrimal duct obstruction.
DCR	:	Dacryocystorhinostomy
PTAH	:	Phosphotungstic acid and haematoxylin
H&E	:	Haematoxylin and eosin
CIS	:	Chronic inflammatory score
SD	:	Standard deviation
X2	:	Pearson chi square test
ANOVA	:	The one-way analysis of variance test
P value	:	Probability value
IQR	:	Interquartile range
NLDO	:	Nasolacrimal duct obstruction
HS	:	Highly significant
NS	:	Not significant
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Abstract

Purpose: To correlate the clinical data to the histopathological characteristics of lacrimal sac and bone specimens in adult patients undergoing indicated external transcutaneous dacryocystorhinostomy surgery (DCR) for primary acquired nasolacrimal duct obstruction (PANDO) in order to determine the important clinical parameters that may necessitate selective lacrimal biopsy in certain situations. **Methods:** This is non-comparative, non-controlled descriptive case series study with histopathological correlation. Lacrimal sac and bone specimens for each case were collected during DCR from consecutive patients with PANDO presenting to the outpatient clinic of "Ain Shams University" hospitals, then sent for histopathological examination. **Results:** Fifty-one lacrimal specimens were obtained from a total of 49 consecutive patients who underwent external DCR for clinical PANDO at the time interval from March 2018 to March 2020 at "Department of Ophthalmology, Ain Shams University" operating theatre. The mean patients' age was 44.82± 13.63 years (range 21- 75). Among the 49 patients recruited, 6 (12.2%) were males and 43 (87.8%) were females. Non -specific lacrimal sac pathology was present in all 51 samples (3.9% acute inflammation and 96.1% chronic non-specific inflammation). Of the chronic non-specific inflammation specimens, mild degree of inflammation was seen in 40.8%, 44.9% showed moderate chronic inflammation, whereas only 14.3% showed severe inflammatory changes. Observing the histopathological findings of lacrimal sac and bone specimens in our series showed that the inflammation and capillary proliferation were more evident in lacrimal sac specimens especially in moderate and severe cases (p-value <0.01 and 0.03 respectively). **Conclusions**: lacrimal sac biopsy specimens should not be routinely sent for histopathological assessment after DCR surgery, except for atypical clinical presentation or wary intraoperative appearance. In such situations, lacrimal sac rather than bone specimens should be obtained, being more indicative and revealing of the underlying lacrimal pathology. The most important clinical parameter that strongly correlates with histopathological features is the intraoperative sac appearance. Chronic non-specific inflammation is the most common histopathological feature found in lacrimal biopsy specimens obtained during DCR surgery.

Keywords: dacryocystitis; lacrimal sac biopsy; chronic inflammation; lacrimal duct obstruction; clinical to histopathological correlation.

INTRODUCTION

Disorders of the lacrimal drainage system causing epiphora, mucopurulent discharge, pain, dacryocystitis, and even orbital cellulitis are a common problem in ophthalmology practice and, in most cases, are either due to primary or secondary acquired disorders. (1)

Primary acquired nasolacrimal duct obstruction (PANDO) describes a condition of nasolacrimal duct obstruction caused by inflammation or idiopathic fibrosis. Distal obstruction causes stagnation of lacrimal secretions, which may promote bacterial colonization and lacrimal sac infection. The clinical spectrum of nasolacrimal duct obstruction ranges from simple epiphora to acute or chronic dacryocystitis. Acute dacryocystitis is the acute inflammation of lacrimal sac with localized erythema and tenderness of the skin overlying lacrimal sac area. Chronic dacryocystitis contains purulent or mucoid material in the lacrimal sac, which regurgitates on irrigation or pressure over sac area. (2)

Nevertheless, the pathophysiology of functional dacryostenosis has still not been understood. Descending inflammation from the eye or ascending inflammation from the region of the nose may initiate malfunctions in the body of the sac with reactive hyperemia, swelling of the mucous membrane, and temporary occlusion of the lacrimal passages. Then, repeated isolated episodes of dacryocystitis

may lead to structural epithelial and subepithelial changes. Loss of typical goblet and epithelial cells, which plays an important role in the tear-outflow mechanism, as well as fibrosis of connective tissue fibers in the area of the lacrimal sac and nasolacrimal duct, may exacerbate malfunctions of the tear-outflow mechanism and start a vicious cycle. [3]

Secondary acquired nasolacrimal duct obstruction (SANDO) may be the result of neoplasm, systemic inflammatory disease, infection, or trauma. Neoplasms that affect the lacrimal drainage system are rare, but potentially life-threatening, so early diagnosis and treatment are particularly important. More than 400 primary lacrimal sac tumors have been reported and were malignant in about 72% of the cases. The most common primary epithelial tumors are papilloma, squamous cell carcinoma and transitional cell carcinoma. The most frequent primary non-epithelial tumors are fibrous histiocytoma, malignant lymphoma and malignant melanoma. Secondary tumors originating in adjacent structures (eyelids, conjunctiva, paranasal sinuses, orbit, and nose) may extend into the lacrimal sac. The most common specific inflammatory lesions include sarcoidosis, Wegener granulomatosis and pyogenic granuloma. [4]

Nasolacrimal duct obstruction is managed surgically with a dacryocystorhinostomy operation (DCR), using either external or endonasal approach. The role of routine