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Research Article

Unilateral Inflammation of Proximal Lacrimal Drainage System

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Abstract

Objective: To evaluate the efficacy of simple curettage in the treatment of persistent or recurrent canaliculitis patients which often misdiagnosed.

Methods: The medical records of 5 patients with a history of canaliculitis-related symptoms for minimum 8 months and complaining about tenderness, recurrent epiphora with discharge, were reviewed retrospectively. All patients with clinically detectable canalicular concretions were treated expressible drainage and simple curettage (without canaliculotomy). During the 9 months of follow-up period, no further symptoms was observed, and canaliculitis was totally resolved in all of the patients.

Results: Five patients with a mean age of 52.2 ± 8.0 years (range, 45 - 65 years) were included in the study. Of the patients, 2 were women, and 3 were men. The mean duration of symptoms was 8.6 ± 2.2 months (range, 6 - 12) months. Epiphora, recurrent conjunctivitis, swelling around the canaliculus, and mucopurulent punctal discharge were present in all of the patients. Microbiological examination of the sample was reported as *Streptomyces epidermidis*.

Conclusion: Canaliculitis is an uncommon, and often misdiagnosed inflammation of the lacrimal canalicular system. As it mimics many other common ocular conditions, there is usually a delay in the treatment. The patients with chronic conjunctivitis and lacrimal infection must be examined carefully for canaliculitis and can be easily treated with simple curettage and antibiotics.

Keywords: *Chronic Canaliculitis; Canalicular Concretions; Canalicular Curettage*

Introduction

Primary lacrimal canaliculitis is an uncommon, and often misdiagnosed unilateral inflammation of the lacrimal system [1]. It accounts for 2 - 4% of the lacrimal pathologies, and mostly seen in the lower canaliculus [2-4]. The symptoms of the disease are similar to those seen in chronic conjunctivitis, dacryocystitis, chalazion, mucocele and blepharitis [5-9].

It is more common in the middle-aged and elderly patients, but there are some reports about the incidence of canaliculitis in the first decade of life [5,8,10,11].

Etiologically, suppurative or primary lacrimal canaliculitis is mainly caused by *Staphylococcus, Streptococcus* and *Actinomyces* species [9]. A yellow-green exudate and yellowish concretions, called sulfur granules, may be expressed from the involved punctum in many of the cases [9,12].

Treatment requires removal of canalicular material and concretions, by applying pressure on the lesion or curettage of the canaliculus [2,7]. Occasionally, surgical exploration is required. Antibiotics eyedrops are given topically several times daily, with or without irrigation of the canaliculi with antibiotics, was effective in all patients [7,13].

Aim of the Study

The aim of this study is to report the results of our treatment model in canaliculitis patients, who were given antibiotics for a long period of time.

Methods

We retrospectively reviewed the medical records of 5 canaliculitis patients between 2016 and 2018 years. This study was prepared according to the Helsinki Declaration Criteria, ethics committee approval form was received from Hospital, and written informed consent forms were obtained from all patients. Patients, who had punctum swelling and mucopurulent punctal regurgitation, were treated as infective bacterial conjunctivitis for nearly 8 months in different clinics. The medical records of patients age, sex, presenting symptom, duration of the symptoms, involved side were all noted.

Conservative management was done by punctum dilatation and expression of concretions applying pressure near the nasal corner of the eye and then curettage of the canaliculus. Microbiologic culture of the material was done. Patients were treated by topical ciprofloxacin eyedrops 4 times daily, and systemic ampicillin-sulbactam 2 x 750 mg for one week. Follow-up period was 9.2 ± 2.7 months.

Results

Five patients were diagnosed and treated for primary canaliculitis. The study consists of 2 women and 3 men. The median age was 52.2 ± 8.04 years (range, 45 - 65 years). Upper punctum was involved in 40%, lower punctum was in 60% of patients. Mean duration of time between appearance of symptoms and diagnosis was 8.6 ± 2.2 months (range, 6 - 12 months).

The most common presenting symptom was epiphora, and thickening of canalicular portion of eyelid, edema, hyperemia, tenderness on the medial canthal region, and secretion (Table 1). Microbiological workup was reported as *Streptomyces epidermidis* (Figure 1). The conservative treatment of patients with punctal dilatation, canalicular expression and topical antibiotics shows improvement in the disease. None of the patients had recurrence and epiphora was completely resolved.

Figure 1: *Conjunctival hyperemia, purulent discharge from the superior punctum and punctual swelling of the eyelid in a patient with canaliculitis.*

Signs and symptoms	No. of patients (n, %)
Epiphora	5 (100%)
Mucus discharge	5 (100%)
Mucus discharge	5 (100%)
Punctal and canalicular erythema	5 (100%)
Punctal and canalicular swelling	5 (100%)
Eyelid swelling	5 (100%)
Conjunctival congestion	5 (100%)
Medial canthal pain	5 (100%)

Table 1: *Clinical features of the patients.*

Discussion

Primary canaliculitis usually occurs with no known cause [8]. It is mostly unilateral and affects the inferior canaliculus and more common seen women in menopause, as tear production and its protective effect against infections is reduced by hormonal changes [3,4,8,11,14-18]. Multiple misdiagnosis are reported in various studies [9,11,14-16]. Any atypical location of chalazion should be suspected as a canalicular disorder [9]. And it is also important to remember that, in canaliculitis cases forceful nasolacrimal lavage may lead to nasolacrimal duct obstruction by pushing the canalicular granules into the lacrimal sac [15].

Although *Actinomyces israelii*, is the most common isolated facultative anaerobic gram-positive organism, there is a change in the microbiological profile, such as *Streptococcus* and *Staphylococcus* species became the most common causative organisms [3,18,19].

Canaliculitis can also be due to secondary infection of the canalicular system with the insertion of plug or canalicular intubation, and also with the use of oral 5-fluorourasil in breast cancer treatment [8,10].

Although topical and systemic antibiotics are used in the conservative treatment of the disease, recurrences are common. Although canaliculotomy and curettage of the canaliculus is widely accepted therapy, there are some reports that canaliculotomy may lead to narrowing and scarring of the canalicular lumen [14,18]. This may lead to lacrimal pump dysfunction, and canalicular fistulas. For some investigators canalicular curettage alone or with the less invasive procedure of canaliculoplasty is a recommend therapy [14].

The patients in our study were complaining about long lasting recurrent conjunctivitis or chalazion. The median age of the patients was 52 years and lower canalicular involvement was seen in 60% of patients. Except from 2 women with some menopausal complaints, there is no known causative factor for canaliculitis. The isolated organism in our study was reported as *Streptomyces epidermidis*, same as mentioned in different studies.

We used simple curettage and patients were given topical ciprofloxacin eyedrops 4 times daily, and systemic ampicillin-sulbactam 2 x 750 mg for one week to reduce the risk of recurrence in the postoperative period. During the follow-up period we observed no recurrence and complete clearing of canalicular contents, resolution of symptoms and patency to lacrimal lavage during the follow-up period.

Conclusion

A significant delay in diagnosis of primary canaliculitis leads to incorrect treatments and even unnecessary surgical procedures such as dacryocystorhinostomy. Although we have small number of patients, we think that canalicular curettage combined with topical antibiotic therapy can be reduce the risk of recurrence.

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Declaration of Interest

The author has no relevant affiliations or financial involvement with a financial interest in or financial with the subject matter or materials discussed in the manuscript.

Statement of Ethics

The study protocol was approved by the Ethics committee of Kartal, Lutfi Kirdar Education and Training Hospital, Istanbul, Turkey (decision number: 2020/514/172/6).

Conflicts of Interest

There is no conflict of interest

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