

A Case of Conjunctival Rhinosporidiosis Mimicking Squamous Papilloma in Ethiopian Child

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Abstract

Rhinosporidiosis is chronic granulomatous inflammation caused by a fish parasite called mesomycetozoa, which is usually acquired by traumatized mucosa primarily nasal mucosa. Ocular rhinosporidiosis is uncommon even though reported cases are available. We present case of conjunctival rhinosporidiosis in a 17-year-old male adolescent who presented with a complaint of conjunctival mass of 8 years duration. The histopathologic examination confirmed rhinosporidiosis. This case report aims to highlight that conjunctival rhinosporidiosis can clinically mimic squamous papilloma and that cases of conjunctival rhinosporidiosis may present as mass lesions that persist for many years.

Keywords: Rhinosporidiosis, Conjunctival, Squamous Papilloma, Ocular

Abbreviations: H and E-Hematoxylin and Eosin

1. Introduction

Rhinosporidiosis is a chronic granulomatous inflammation caused by an aquatic protistan parasite called *Rhinosporidium seeberi* [1-7]. *Rhinosporidium seeberi* is newly grouped as a fish parasite class called mesomycetozoa, which includes a heterogeneous group of microorganisms at the animal-fungal boundary [3, 5, 6]. Rhinosporidiosis is claimed to be acquired through traumatized mucous membranes, most commonly nasal mucosa, due to contact with water sources containing the parasite [1-3, 6-17]. Extranasal involvement is rare. Some of the extranasal sites affected by rhinosporidiosis are ocular structures, lips, uvula, palate, trachea, pharynx, and bone [3, 6, 11]. The most commonly involved ocular structures are the conjunctiva, lacrimal sac, and sclera [2, 7-10].

The first case of ocular rhinosporidiosis, specifically conjunctival rhinosporidiosis, was reported in India in 1912 [5]. Nowadays several cases of ocular rhinosporidiosis are reported in published case reports from Asia, Europe, and South American countries. Most cases of ocular rhinosporidiosis are reported from Sri Lanka, Nepal, Bangladesh [3, 5, 6, 13]. In Africa, few cases of ocular rhinosporidiosis are reported in Kenya, Congo, Zambia, Tanzania, Ivory coast, and south Africa [3, 5]. In Ethiopia there is only one reported case of ocular rhinosporidiosis to best of our knowledge [2].

Clinically patients with ocular rhinosporidiosis present with slowly growing pinkish pedunculated or sessile polypoid mass, which is usually friable [3]. In addition to the mass lesion, they also complain of foreign body sensation, irritation, and watering of the eyes [2, 3, 5-7].

Diagnosis of rhinosporidiosis is usually made through histopathologic examination, which classically demonstrates epithelial and subepithelial variably sized thick-walled sporangia containing numerous endospores eliciting inflammatory response consisting of mononuclear and polymorphonuclear infiltrates with occasional granuloma formation [2-6].

2. Case Presentation

2.1. History and Physical Examination

This is a 17-year-old adolescent male who presented to the ophthalmology clinic of Aksum University comprehensive specialized Hospital with a complaint of painless mass over his left eye of 8 years duration which was slowly growing. He had a history of frequently bathing and swimming in stagnant waters and lakes. Otherwise, the patient has no history of reduction in vision, redness of eye, bloody tears, trauma or surgery to his eye. No history of similar lesion in other parts of his body. On physical

examination, visual acuity was 20/20 in both eyes which is normal. He had left lower palpebral conjunctiva soft to firm non tender fleshy pedunculated polypoid mass measuring 25mm*16mm. With the clinical diagnosis of conjunctival papilloma excisional biopsy was done and sent for histopathologic examination.

2.2. Histopathologic Finding

Skin-covered polypoid tissue without stalk measuring, 14mm*0.8 mm*0.6mm, was received. The cut surface was pinkish to purplish glistening with microcystic spaces. No solid focus was identified. The microscopic examination revealed non keratinizing squamous epithelium with interspersed goblet cells, lined tissue with underlying submucosal stroma displaying variable sized thick-walled sporangia filled with numerous sporangiospores with surrounding extensive mononuclear inflammatory infiltrate composed of lymphocytes, plasma cells and macrophages (Fig. 1 and 2). The sporangia are seen within the conjunctival mucosa, some of them bursting the spores. The submucosa also demonstrated numerous cysts devoid of spores.

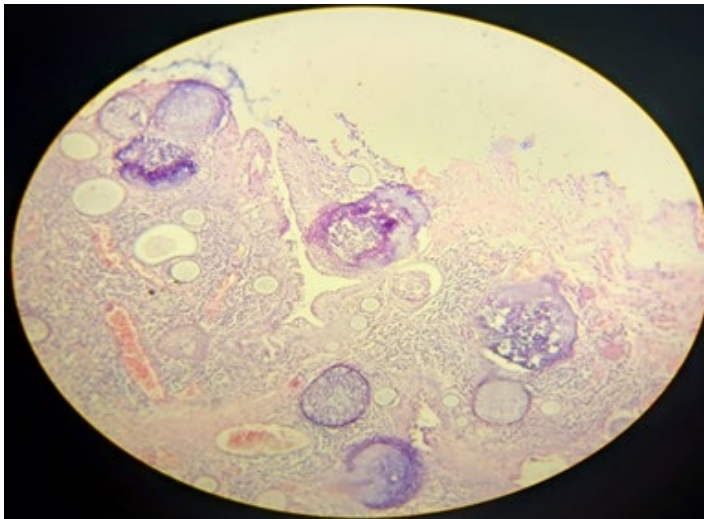


Figure 1: 4x Magnification Showing Conjunctival Epithelium Lined Tissue Displaying Epithelial and Submucosal Variable Sized Thick Sporangia Filled with Endospores and Empty Cysts Devoid of Endospores

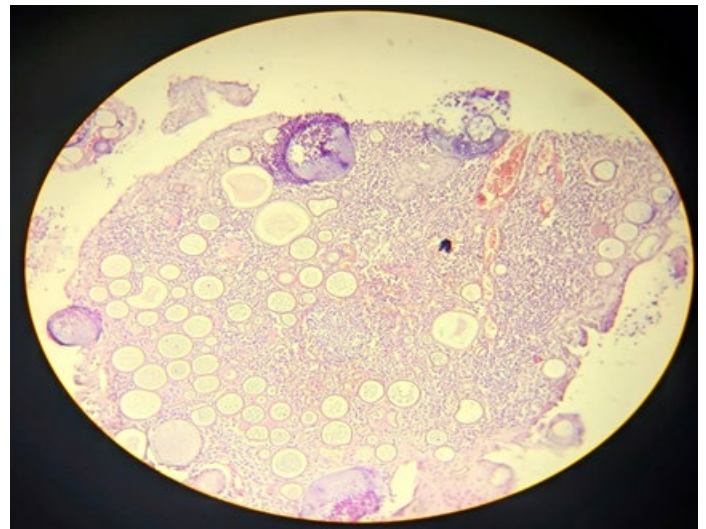


Figure 2: 4x Magnification Displaying Variable Sized Sporangia Filled with Endospores with Surrounding Extensive Mixed Inflammatory Infiltrate

3. Discussion

Rhinosporidiosis is a chronic granulomatous inflammatory condition caused by *Rhinosporidium seeberi*, which is acquired by bathing or contact with stagnant water, containing the parasite, with traumatized mucosa. The major risk factor for rhinosporidiosis is bathing in rivers, lakes, or stagnant waters [2, 3]. Individuals within the second decade of life are usually affected by rhinosporidiosis, and approximately 7% of cases originate from conjunctival sources[2]. Our patient is from a rural part Tigray region, Ethiopia, where many rivers and lakes are found, and he claimed he had history of frequent bathing and swimming in rivers and stagnant water. In most of the reported cases of ocular rhinosporidiosis, the duration of the conjunctival mass lesion ranges from 1 week to 16 months [1-14], which is relatively short compared to our case. In our instance, the mass lesion persisted for 8 years.

The mass lesion in rhinosporidiosis is usually fleshy vascular polypoidal and mostly friable, which can be sessile or pedunculated. The mass in our case was a pedunculated polypoid mass in the lower palpebral conjunctiva. Histological examination of the lesions classically shows variable sized thick sporangia containing endospores, eliciting mixed inflammatory responses [2, 7]. In our case, the H and E examination revealed conjunctival epithelium lined polypoid mass displaying numerous epithelial and submucosal thick sporangia containing endospores some of them ruptured, some submucosal cysts devoid of endospore and extensive inflammation consisting of neutrophils, mononuclear inflammatory cells of lymphocytes, plasma cells and histiocytes. (Fig 1 and 2). The ophthalmologist initially did not consider rhinosporidiosis as a diagnosis, as there were no much reported cases of conjunctival rhinosporidiosis in our country. Instead, due to the polypoid nature of the lesion and its prolonged duration, the clinical diagnosis was conjunctival papilloma.

4. Conclusion

For patients presenting with polypoid mass lesions in the conjunctiva or other ocular structures, rhinosporidiosis should be considered, particularly in those with a history of bathing or swimming in rivers or stagnant water. While most reported cases of rhinosporidiosis have a short duration of the mass lesion, they can also present after many years. Histopathologic confirmation is mandatory for diagnosis.

Follow-up

The patient was advised not to bath or swim in stagnant waters or lakes and to have subsequent follow-up to see if there is any recurrence.

Author Contribution

Birhanu Kassie Reta, Conceptualization; data curation; project administration; visualization; writing – original draft; writing – review and editing. Micheale Hailu Weldegebriel: Writing – original draft; writing review and editing. Hindeya Hailu Hagos: Data curation; investigation; writing – original draft. Mizan Tsegaye Abebe: Supervision; writing review and editing; visualization

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Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Written informed consent was obtained from the patient's family for anonymized patient information to be published in this article.

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Data availability

The patient's data and file are available.

Ethics statement

This is a case report and therefore did not require ethical approval from the ethics committee.

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