Ophthalmomyiasis Externa: Case Report of the Clinicopathologic Features

Sugeshnee Pather*1, Louis M Botha2, Martin J Hale3 and Shirely Jena-Stuart3

Abstract

Ophthalmomyiasis externa is the infestation of the superficial external ocular structures by fly larvae. This is a particularly rare condition, which has nevertheless been reported in several countries worldwide. Presented herein are the clinicopathologic features of ophthalmomyiasis externa which occurred in an adult patient. The patient responded well to treatment following thorough ophthalmological examination and prompt diagnosis.

Keywords

Ophthalmomyiasis; Oestrus ovis; Myiasis

Introduction

Ophthalmomyiasis is the infestation of ocular or orbital tissues by fly larvae. Ophthalmomyiasis externa refers to the involvement of superficial external ocular structures and represents the commonest presentation of oculary myiasis [1-3]. Oestrus ovis (sheep bot fly) is the most common cause of ophthalmomyiasis in humans and usually affects shepherds and farmers. However, cases may also occur in suburban and urban regions [1,4-8]. The initial signs and symptoms of ophthalmomyiasis may mimic commonly occurring ocular infections and inflammatory reactions such as conjunctivitis. Therefore, thorough ophthalmological examination and confirmation of this disease process are required to avoid misdiagnosis and delay in definitive treatment.

Ophthalmomyiasis is a rare condition and case reports of human ophthalmomyiasis in South Africa have been attributed to Oestrus ovis [8-11]. Herein we present clinicopathologic features of ophthalmomyiasis externa in an urban-dwelling adult patient.

Case History

A 30 year old male patient, an urban construction worker, presented with sudden onset of painful and reddened left eye. There was no history of trauma, significant travel history or recent exposure to farm animals.

Ophthalmic inspection revealed left-sided conjunctival hyperaemia and mild chemosis with obvious patient discomfort.

Slit lamp examination revealed tiny sheep bot fly larvae (Figures 1a and 1b). The external parasites were immediately removed under local anaesthetic at the slit lamp. The subconjunctival parasites were subsequently removed under the operating microscope. No parasites had penetrated the sclera or advanced into the orbit. The patient was treated with oral mebendazole for three days.

Pathology

Five parasitic larvae, ranging in size from 1 to 4mm were submitted from the conjunctiva of the left eye.

Microscopic examination revealed non necrotising granulomatous inflammation which surrounded the parasitic structures. Dense infiltration by eosinophils was evident and there were distinct areas of Splendore-Hoeppli phenomenon. The structures contained external cuticles with prominent radially orientated external spines. The cephalopharyngeal skeleton, prominent hooks, organoid internal structures and striated muscle were morphologically discernible (Figures 2 and 3). The striated muscle was subsequently highlighted by Masson Trichrome stain.

The clinical and pathological features confirmed the diagnosis of ophthalmomyiasis externa.

Discussion

Myiasis is the infestation of tissues and/or organs of animals or...
Definitive diagnosis and classification are usually made once the larvae are found and submitted for identification to entomologists. Precise identification of the species may necessitate examination of the adult fly [15]. The first instar larval stage of Oestrus ovis contains prominent anteriorly located hooks which are attached to the cephalopharyngeal skeleton [8].

Treatment of external ophthalmomyiasis includes systemic ivermectin and surgical extraction of the larvae under local anaesthesia. Steroids and antibiotic prophylaxis may also be indicated [2]. Our patient responded well to oral mebendazole as Ivermectin was not available at our hospital. The subconjunctival parasites that could not be removed, or were not seen at first presentation, were rendered immobile after one day of treatment with mebendazole. The patient has subsequently experienced complete and uneventful recovery.

The differential diagnosis includes Tunga penetrans (chigoe flea) which burrows into skin and may be mistaken for fly larvae. However, these are usually contained within epidermis and tend to invade human skin as an adult with its head region extending through the epidermis. Identification of striated muscle in the structure excludes the presence of helminths/nematodes. Arthropods contain striated muscle as well as branching trachea-like ribbed tubes [18].

In conclusion, presented herein are clinicopathological features of ophthalmomyiasis externa in an adult male patient who responded well to treatment following prompt recognition and treatment of this rare condition.

Declaration

The authors declare the absence of conflict of interest.

Consent

The patient has provided written consent for publication of this article.

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References


Author Affiliations

1 Anat Path, Histopathology Department, Chris Hani Baragwanath Academic Hospital, Faculty of Health Sciences, University of the Witwatersrand, South Africa

2 Department of Neurosciences, Division of Ophthalmology, University of the Witwatersrand, South Africa

3 Histopathology Department, School of Pathology, Faculty of Health Sciences, University of the Witwatersrand, South Africa