Case Report

Orbital and Ocular Myiasis

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Abstract: Myiasis is the body's infestation with maggots or eggs/larvae of certain flies. The infection is ether specific or non-specific. Although human Myiasis is rare, members of cyclorhabid, specifically the genus of Sarcophaga and Oestridae (Diptera), mainly produce myiasis [1]. Ocular and periocular myiasis are very rare and only few case reports have been published so far. Ophthalmomyiasis generally occurs in humans' eyes, residing or working in close contact of livestock [2]. Older people, children, immunodeficient (people with orbital carcinomas, those with diabetes mellitus and with immunosuppressive drugs treatments) are affected usually [3]. However, there are few reports in which the infestation occurs in immuno-competent hosts. Compromised environmental sanitation and poor personal hygiene are often held as responsible factors. Infestation happens after fingers' contamination after dealing with the infested livestock or by the fly itself. Under the skin, the larvae start the tissue penetrating and later they transform into large maggots. In the recent past ivermectin has largely been used with great success as non-invasive method of treating orbital myiasis [4]. The objective is to present a very rare case of ocular myiasis in a patient with infradiagnosed and careless squamous cell carcinoma of the upper eyelid.

Keywords: Myiasis, Maggots, Infestation, Diabetes mellitus, Eyelid, Inflammatory.

HISTORY AND CLINICAL FINDINGS

A 60-year-old immunocompetent female belonging to Muzaffarabad Azad Kashmir, non-diabetic, non-hypertensive presented to The Ophthalmic outpatient department of Pakistan Institute of Medical Sciences with pain, itching and maggot infestation in her right upper eyelid for 5 days. The maggots were seen to be crawling in the orbital tissue and falling off from the eye. A purulent discharge was also seen in the periorbital tissue. The patient referred a history of a growth in her right eye for the last 6 years treated with topical medicines (Eyebradex eye drops) from a local and general doctor. She was sent to the tertiary care hospital but she never visited it until the maggots infested the tissue.

On examination visual acuity of the left eye was 6/36 with cataract. The right eye was no perception of light (NPL) with a foul-smelling fungating lesion seen with maggots' infestation (Fig. **1**). There was no lymphadenopathy either in the submandibular or pre auricular lymph zones.

The eye was washed with normal saline and maggots were removed with forceps. The patient was treated with oral Ivermectin. 18mg stat, followed by 18mg every 7 days for next three weeks.

She visited us again after 3 weeks with complete recovery. Worms and maggots were completely gone. We went for her Otolaryngology consultation and MRI orbit with contrast was advised. There was no involvement of paranasal sinuses or nose for the maggots.

DIAGNOSTIC ASSESSMENT

MRI showed a lesion centered at the medial canthus of the right eye with intraocular extension concerning for inflammatory/infective etiology with associated periorbital and orbital cellulitis. Possibility of neoplastic lesion cannot be ruled out fully and needs histopathological confirmation. A biopsy was performed and it confirmed Squamous Cell Carcinoma of the right upper eyelid.

Fig (1). Maggots inside the Orbit.

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Thearapeutic Intervention

After that, exenteration of the right eye was done with reconstructive surgery.

DISCUSSION

Ocular myiasis entails infestations of the eye or ocular adnexa by larvae of the specie Diptera and <5% cases of human myiasis are due to this [5]. Depending upon the site of larval infestation, it can be orbital, internal or external.

External Ophthalmomyiasis is the involvement of superficial periocular tissues, and it can be sub-divided into palpebral and conjunctival myiasis. Internal Ophthalmomyiasis entails larvae penetration of the conjunctiva and sclera and migration into sub retinal space [6].

Orbital myiasis may particularly affect individuals with previous ocular diseases or disorders of consciousness [7].

Any condition causing compromise of the orbital tissue like malignant disease, ischemia, trauma or surgery can lead to its infestation called orbital myiasis. Orbital myiasis is a rare pathology that generally complicates the ocular malignancies and lead to massive tissue destruction. It is very painful for the patient and vision threatening to the eye.

Ivermectin is used in the dose of 200 micro gram/kg body weight to treat this infection [8]. Other methods include ivermectin eye drops (made from dissolving tablet) or wash with normal saline, and forceps' larvae extraction.

CONCLUSION

Orbital myiasis is a rare ocular parasitic infection which could be prevented. It can lead to massive tissue destruction. Personal hygiene, controlling fly population and educating immunocompromised patients is very important. Ivermectin is being used as the noninvasive treatment. Moreover, intranasal or sinuses extension could be possible. In these cases, a carefully monitored is needed and exenteration is one of the treatment options.

CONFLICT OF INTEREST

Declared none.

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REFERENCES

[1] Narayanan S, Jayaprakash K. Incidence of ocular myiasis due to infection with the larva of oestrus ovis (Oestridae Diptera). Indian J Ophthalmol 1991; 39(4): 176-8.

[2] Sucilathangam G, Meenakshisundaram A, Hariramasubramanian S, Anandhi D, Palaniappan N, Anna T. External ophthalmomyiasis which was caused by sheep botfly (Oestrus ovis) larva: A report of 10 cases. J Clin Diagn Res 2013; 7(3): 539-42.

[3] Raina UK, Gupta M, Kumar V, Ghosh B, Sood R, Bodh SA. Orbital myiasis in a case of invasive basal cell carcinoma. Oman J Ophthalmol 2009; 2(1): 41-2.

[4] Pandey TR, Shrestha GB, Shah DN. A Case of orbital myiasis in recurrent eyelid basal cell carcinoma invasive into the orbit. Case Rep Ophthalmol Med 2016; 2016: 2904346.

[5] Gupta P, Ram J, Faisal T, Agarwal A, Khurana S, Prasad A. Ocular myiasis. J Ophthalmic Vis Res 2018; 13(3): 361-2.

[6] Yeung JC, Chung CF, Lai JS. Orbital myiasis complicating squamous cell carcinoma of eyelid. Hong Kong Med J 2010; 16(1): 63-5.

[7] Huang YL, Liu L, Liang H, *et al*. Orbital myiasis: A case report and literature review. Medicine 2020; 99(4): e18879.

[8] Puthran N, Hegde V, Anupama B, Andrew S. Ivermectin treatment for massive orbital myiasis in an empty socket with concomitant scalp pediculosis. Indian J Ophthalmol 2012; 60: 225-7 doi: 10.4103/0301-4738.95880.

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