Case Report

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Ophthalmomyiasis In Immunocompetent Patient –A Case Report

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Abstract

Maggots infestation is a rare condition with very few reports having been published worldwide. Ophthalmomyiasis varies in severity, ranging from simple irritation to complete destruction of the orbit. Poor hygiene and working in contaminated areas particularly during warm season provides a setting for infestation with this parasite. A case of ocular myiasis in 60 year old male is presented here living under poor hygienic conditions. The maggots were identified as *Chrysomya bezziana*. Treatment included removal of maggots with use of local anaesthesia and turpentine oil with systemic antibiotics.

Key Words: Ophthalmomyiasis; Maggots; Local anaesthesia

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NTRODUCTION

Myiasis is defined as the infestation of living tissue of humans and other vertebrate animals by the eggs or larvae of flies of the Orthopoda order Diptera. Although myiasis in human beings is generally rare, it is sometimes seen in tropical and subtropical countries overcrowded having condition, poor environmental sanitation and personal hygiene.¹ Infestation in humans is through penetration of intact skin, orbit, or nasal cavities. Ophthalmomyiasis refers specially to infestations that involve the eye and ocular adenexa. Ocular involvement occurs in approximately 5% of all cases.² Many dipterous flies of the genera Chrysomia, Cochliomyia, Oestrus, and Hypoderma have been reported to cause myiasis in human.³

CASE REPORT

A 60 year old male patient presented in eye OPD with bandage on right eye and complaint of bleeding and pain from last 2 days. Patient gave history of rat bite 4 days back for which he took medication from local practitioner. Two days later patient started complaining of foul smelling bloody ischarge and feeling of something crawling in eye. On ocular examination, vision in R/E was PL-ve and in L/E was PL+ PR accurate in all quadrants. There was total destruction of lid tissue and the eye ball contents were macerated. Orbital cavity was filled with maggots with deep burying into cul de sac and involving lacrimal area. It was associated with bloody discharge.(Figure1)On examination of left eye, anterior segment was normal. Nuclear sclerosis grade 2 was present. Fundus showed C:DR 0.9:1 with age related macular degeneration which could explain patient's decreased vision. No maggots were found in left eye. Systemic

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examination was normal. Investigations revealed raised WBC's count, normal blood sugar, renal and liver function tests. X-Ray nasal cavity and orbit didn't reveal any area of bone destruction. CT orbit showed orbital cellulitis with spread to frontal area and cheek area on right side. Based on clinical findings patient was diagnosed as a case of ocular myiasis right eye with orbital cellulitis. Maggots were removed mechanically under 4% topical xylocaine. Turpentine oil was instilled to suffocate maggots and removed with forceps. On first day around 50 maggots were removed. And the cavity was cleaned with hydrogen peroxide. Patient was treated with i/v amoxyclav 1.2gm BD and oral paracetamol and ibuprofen BD for 5 days followed by oral amoxyclav 625mg TDS for 7 days along with topical Moxifloxacin right eye. Daily dressings were done and maggots were removed for next 5 days (Figure 2). The cavity began to heal at discharge (Figure 4) and healing was complete by 4 weeks. The maggots were identified as that of Chrysomya bezziana based on characteristics of deep constrictions between segments of the body and characteristic configuration of posterior spiracle.(Figure 3)



Figure 1: macerated tissue and orbital cavity full of maggots on day 1



Figure 2: maggots on 2nd day.



Figure 3: maggots of chyrosomia bezziana removed. Segmentation of body and posterior spiracle present



Figure 4 : healing cavity after all maggots were removed on day 7.

DISCUSSION

Human ophthalmomyiasis was first reported by Keyt in 1900 and later on by Elliot from India in 1910.⁴ Maggots are the larvae of those dipteran flies which need a host for completion of their life cycle. Myiasis in man is generally rare, seen among people where the standard of hygiene is low and there is abundance of flies around the locality. Cattle, sheep, horse, rodents are the natural hosts. Man is an accidental host. Normal healthy individuals are unlikely to suffer from myiasis.⁵ The main predisposing factors for the larval infestation in our patient were probably illiteracy, lack of self hygiene, and overcrowding.

Entomologically, myiasis is classified as obligatory, facultative and accidental myiasis. Flies of genera *Oestrus, Hypoderma, Chrysomyia, Dermatobia,* and *Wohlfahrtia* are obligate parasites whose larvae can survive only on warm-blooded

live vertebrates. Flies of the Sarcophagidae genus are the facultative parasites. Although Oestrus ovis is by far the most common cause of EOM in man, fly species of genera Calliphora, Lucilla, Sarcophaga, Hypoder ma, Musca, Callitroga, Cuterebra Dermatobia, Chr *ysomvia*, and *Cochliomvia* are known to cause ophthalmomyiasis in humans. There are 3 different forms of Ophthalmomyiasis based on the portion of the eye involved .Ophthalmomyiasis externa refers to the superficial infestation of ocular tissue. Conjunctival myiasis is the most common form and is relatively mild, with lacrimation, characteristically with an abrupt onset.⁶ Examination reveals red eye, photophobia, conjunctival hyperemia, lid edema, punctate conjunctival haemorrhages. Lacrimal gland myiasis may complicate conjunctival infestation. Migration through the lacrimal canal to the nose cavity is a possibility. Oestrus ovis is the main agent causing external myiasis. Ophthalmomyiasis interna: refers to the infestation involving the anterior or posterior segment of the eyeball. The fly larva may be seen in the anterior segment and the vitreous and subretinal space.⁷ May manifest as anterior uveitis, sometimes accompanied by posterior segment inflammation, which may be severe. Red eye, vision loss, floaters, eye pain, and scotomas are the common symptoms. Vision loss can be severe and is more commonly associated with Hypoderma tarandi, being the most frequent cause in northern European countries such as Norway. Orbital myiasis is characterized by the intraocular invasion of maggots from eyelid myiasis. Eyelid tumors are the most common predisposing factor associated with this clinical picture⁸ although it may affect a previously healthy individual. The maggost involved in this case were that of Chrysomia bezziana identified by characteristic features. Also known as the old world screw worm fly, an obligate parasite of mammals. It is most prevalent in southeast asia, tropical and subtropical africa, some countries in the middle east, India, the Indonesian and Philippine islands, and Papua new guinea.⁹ The adult female lays approximately 150-200 eggs at a time. The eggs are laid in wounds and mucous membranes of a live mammal and hatch after 24 hours. The larvae feed on the host tissue for 5-7 days while they complete their development, then they fall to the ground to

pupate. The pupal stage is temperature dependent with warm weather favouring growth.

C. bezziana is different from other fly species because tissue infestation can occur in the absence of necrotic tissue. The maggots may cause serious and permanent tissue damage. Extremely infested wounds can lead to death if not treated.¹⁰. As the maggots feed and cause tissue damage, the wound produces a characteristic odour. In 1990 a case of total destructive myiasis by C.bezziana in 80 year old immunocompetent female was reported¹¹. In our case, though the patient was immunocompetent but the risk factor were poor hygiene and rat bite. The key step in the management is mechanical removal of maggots with forceps after suffocating them with use of various chemical substances like turpentine oil with or without chloroform which blocks the spiracles of larvae¹² Treatment strategies in cases of internal ophthalmomyiasis are case specific ranging from iridectomy, vitrectomy, retinotomy and laser photocoagulation.¹³ In recent years, the broad-spectrum antiparasitic agent, Ivermectin, has been successfully used as a noninvasive means to treat orbital myiasis¹⁴ The oral dose of Ivermectin is 200 µg/kg body weight. Identification of the maggot can be crucial in determining the pathogenesis as well as controlling the disease. Left untreated, infestations can be fatal and the patient may die in 7 to 14 days from toxicity or secondary infections.

CONCLUSION:

Although maggot's infestation is rare entity but it can cause significant damage to the eye. So to prevent myiasis in humans, there is a need for general improvement of sanitation, personal hygiene, and extermination of the flies by insecticides.

REFERANCES

- 1. R. C. Kersten, N. M. Shoukrey, and K. F. Tabbara, "Orbital myiasis," *Ophthalmology*, vol. 93, no. 9, pp. 1228–1232, 1986.
- D. A. Burns, "Diseases caused by Arthropods and otherNoxious animals," in *Rooks Textbook of Dermatology*, vol. 2, pp. 33.1– 33.63, Blackwell Science, Oxford, UK, 11th edition, 1094.
- 3. Glasgow BJ. Ophthalmomyiasis. Chapter 108. In: Pepose JS, Holland GN,

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Wilhelmus KR, editors. Occular Infection and Immunity. 1st ed. Mosby Publishers; St. Louis, Missouri, USA: 1996. P. 1505-15.

- Keyt FT (1900) quoted by: Sivaramasubramanyam P, Sadanand AV. Ophthalmomyiasis. *Brit J Ophthal* .1968; 52: 64.
- 5. S. Duke- Elder, *System of Ophthalmology*, vol. 1, Mosby, St. Louis, Mo, USA, 1958.
- Anane S, Hssine LB 2010. Conjonctival [sic] human myiasis by Oestrus ovis in southern Tunisia. Bull. Soc. Pathol. Exot. 103: 299–304
- Jakobs EM, Adelberg DA, Lewis JM, Trpi s M, Green WR1997.Ophthalmomyiasis interna posterior. Report of a case with optic atrophy. Retina17: 310–314.
- Jain A, Desai RU, Ehrlich J: 2007. Fulminant orbital myiasis in the developed world. *Br. J. Ophthalmol.* 91: 1565–1566.
- Sutherst R.W., Spradbery J.P., & Maywald G.F. "The potential geographical distribution of the Old World screwworm fly, Chrysomya bezziana." *Med. Vet. Entomol* 1989; 3:273–280

- Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2008: Mammals, Birds and Bees. Vol. 6. Office Intl Des Epizooties, 2008.
- Sachdev MS, Kumar H, Roop, Jain AK, Arora R, Dada V K. Destructive ocular myiasis in a noncompromised host. *Indian J Ophthalmol* 1990;38:184-6
- 12. D. C.Agarwal and B. Singh, "Orbital myiasis—a case report,"*Indian Journal of Ophthalmology*, vol. 38, no. 4, pp. 187–188,1990.
- Huynth N,DolanBet al. Management of screwworm ophthalmomyiasis externa. *Br.J.Ophthalmol* 2005;89(10):1377-1378 Osorio J, Moncada L, Molano A, Valderrama S, Gualtero S, Franco-Paredes C. Role of Ivermectin in the treatment of severe orbital myiasis due to Cochliomyia hominivorax.*Clin Infect Dis*. 2006 43:e57– 9.

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