First report of Oriental latrine flies causing vaginal myiasis in human

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Abstract The present paper reports a case of human vaginal myiasis in a 22 year old woman. This is the first report of this fly species to cause vaginal myiasis in human till now. The infested maggots were removed from the vagina and cultured in laboratory. Entomological studies on the emerged flies showed that the infested larvae were Oriental latrine fly *Chrysomya megacephala* Fabricius. Clinical presentation and treatment strategies are discussed also.

Keywords Myiasis · Human · Vaginal ·
Chrysomya megacephala

Introduction

Vaginal myiasis is found widely in domestic animals (Sinha 2012). It is extremely rare in humans (Passos et al. 2002). Though in rural north India it is not uncommon to see vulvo-vaginal myiasis. Contributing factors are poor hygiene and low literacy levels (Dahiya and Khosla 2002). The predisposing ecological factors like pre-existing suppurative lesions and poor personal hygiene in rural areas, climatic conditions are also considered as important (De Silva et al.

2005). In temperate areas myiasis occurs mainly in the summer months whereas in the tropics it occurs year round (Delir et al. 1999). The Oriental latrine fly, *Chrysomya megacephala* 1794 is a very common species. From its origin in New Guinea and the nearby Pacific islands, *C. megacephala* is now widespread throughout India and South East Asia with many recent introductions in many parts of the world. The Larvae of *C. megacephala* develop in carrion or dead, decomposing tissues and very rarely found in *C. bezziana* infested myiasis although the adult flies frequently feed at such wounds (Spradbery 2002). *C. megacephala* is often related to aural myiasis (Rahoma and Latif 2010). Umbilical myiasis of a 20 days old neonate caused by the larvae of *C. megacephala* was reported in Burdwan district of West Bengal, India (Mandal et al. 2014). There is no previous report of vaginal myiasis in human caused by the Oriental latrine fly *C. megacephala* Fabricius (Diptera: Calliphoridae) in the world. The present paper reports a case of vaginal myiasis of a 22 year old woman caused by this fly in Bankura district of West Bengal, India.

Case report

History

A 22 year-old pregnant housewife from poor socioeconomic family, resident of southern part of Bankura district, West Bengal, was admitted in the Bankura Sammilani Medical College and Hospital. On normal vaginal delivery both the mother and baby were discharged from hospital 2 days after. According to local custom, after returning home from hospital the mother along with the baby was transferred to a nearby cowshed. After 7 days of delivery she was again admitted to the hospital and attended

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emergency due to foul smelling discharge per vagina with pain at perineum for last 2 days.

On examination

During examinations multiple maggots were seen at introitus. They were cleaned with antiseptic solution every day but for the next 4–5 days a total of 32 maggots were removed from the vagina.

Photographs: Larvae in the vagina

Investigations

Some healthy maggots of second instar stage removed from the lesion were kept in a glass jar with broiler chicken meat as food. The maggots developed there into third instar stage. The fully developed third instar sluggish maggots were then transferred to a separate glass jar having moist environment. The maggots pupated in the moist medium and remained in that stage for 11 days with normal room temperature $20 \pm 5^\circ\text{C}$ and relative humidity $60 \pm 5\%$. After emergence from puparia the adult flies were pinned with entomological pin through pre-suture and identified up to species level under stereoscopic binocular microscope. Study of chaetotaxy and male genitalia revealed that the fly was *C. megacephala* Fabricius, 1794.

Photograph: Adult *Chrysomya megacephala* Fabricius 1794.

Treatment

The infested maggots were removed from the crater with the help of forceps. Turpentine oil and ether was used over the lesion to kill the maggots. The vagina was dressed regularly with a glycerin magnesium sulfate solution and systemic antibiotics.

Discussion

Myiasis is a larval infestation of man and animals caused by some fly species belonging to the family Sarcophagidae, Calliphoridae, Muscidae and Oestridae of order Diptera. Patton (1922) categorized the myiasis producing species as specific and semi-specific parasites. Zumpt (1965) replaced the terms as obligatory and facultative. The flies under genus *Chrysomya* are mostly facultative parasites which usually develop on decaying organic matter like dead bodies of different animals, plants or on faeces, but they also can deposit their eggs on live animal body or in wounds. The old world screw worm *C. bezziana* is a common myiasis causing fly and is an obligatory parasite of mammals including human. Except *C. bezziana*, *C. albiceps* is also a facultative parasite and normally lays eggs on carcasses. *C. rufifacies* also frequently involved in

Photographs: Larval stages and pupa of the infested fly.

secondary myiasis in sheep. *C. megacephala* also lays eggs on dead and decomposed tissues and rarely produce myiasis in man and animals. It is noteworthy that vaginal myiasis caused by *C. megacephala* is uncommon in human and this is the first report in the world. This case illustrates the importance of personal hygiene and sanitation in proper method to avoid larval infestation of myiasis producing fly species.

Conflict of interests The authors declare that there is no conflict of interests regarding the publication of this paper.

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