

# HUMAN AURICULAR MYIASIS CAUSED BY LUCILIA SERICATA: CLINICAL AND PARASITOLOGICAL CONSIDERATIONS

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**Abstract-** Myiasis is the invasion of body tissues of humans and animals by the larvae of the Diptera or two-winged flies. There are only sporadic reports in the literature concerning human ear myiasis. A 62-year-old bedridden woman in an intensive care unit was examined because of her intense swollen and erythematous right ear. Physical examination revealed 80 live larvae (maggots) in the posterior part of right outer ear and external auditory canal. Entomological studies of the third instar larvae revealed its identity as *Lucilia sericata*. The entomological aspects, clinical and epidemiological characteristics are evaluated. In particular, we underline the rarity of myiasis because of both etiological agent and the anatomical site.

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**Key words:** Auricular Myiasis , *Lucilia sericata* , Iran.

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## INTRODUCTION

Myiasis (from the Greek *myia*, "fly"), is the invasion of body tissues of humans and animals by the larvae of the Diptera or two-winged flies, which, at least for a certain period, feed on the host's dead or living tissue, liquid body substances, or ingested food (1, 2). The various forms of myiasis may be classified from an entomological or a clinical point of view. Entomologically, flies may be classified into three groups: obligatory or specific, facultative or semispecific and accidental. Clinically, myiasis can be classified according to the tissue and part of the body affected. Nasopharyngeal myiasis, including aural and ocular myiases, involves invasion of the head cavities of the outer ear, nose, mouth and accessory sinuses (3). The family of Calliphoridae

(blowflies) is divided into several subfamilies of which two, Calliphorinae and Chrysomyinae, are of medical and veterinary importance. The calliphorinae contain the generae *Lucilia*, *Calliphora*, *Cordylobia*, and *Auchmeromyia* (3). Several species of *Lucilia* including *L. cuprina* and *L. sericata* are the sheep blowflies that are facultative ectoparasites. Their larvae infest and feed on the living tissues of warm-blooded vertebrates, particularly the domestic sheep (4). Blowflies are now found worldwide, although in general *L. sericata* is more common in cool-temperate and *L. cuprina* in warm-temperate and sub-tropical habitats (4). *L. sericata* is an autogenous species and must obtain a protein meal before maturing their eggs. When the source of protein is freely available, females deposit hatches of 225-250 eggs at three days intervals throughout of their life. The average longevity of an adult female is about seven days. The larvae pass through three stages before wandering from the lesion and dropping to the ground where they pupariate. The time required to complete the life cycle from egg to adult is highly dependent on ambient temperature, but is commonly about 4-6 weeks (4).

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## CASE REPORT

A 62-year-old obese woman was admitted to intensive care unit with acute pulmonary edema and decompensated heart failure. Dermatologic consultation was requested because of her intense swollen and erythematous right ear. She appeared subconscious and restless. There was no history of trauma, previous ear infection or ear disease.

Physical examination revealed an intensely tender, erythematous and diffusely swollen right ear. Inspection of posterior part of the right outer ear and external auditory canal showed numerous alive and motile larvae (Fig. 1). Approximately 80 larvae were removed with a fine forceps and preserved in ethanol. The epithelial lining of the meatus and ear canal was intact but inflamed. The tympanic membrane was not observed, because of severe inflammation of the external auditory canal.

After complete removal of the larvae, the patient's ear was irrigated with normal saline. Parenteral antibiotic was also prescribed. Unfortunately, after four days, she expired due to her underlying cardiopulmonary disease.

Five maggots were sent to the department of entomology of faculty of public health of Tehran University of Medical Sciences. The specimen was identified as the last instar of larvae of *L. sericata* (Figs. 2 and 3).



**Fig. 1.** Maggot-infested and inflamed right ear of the patient, a 62-year-old woman.

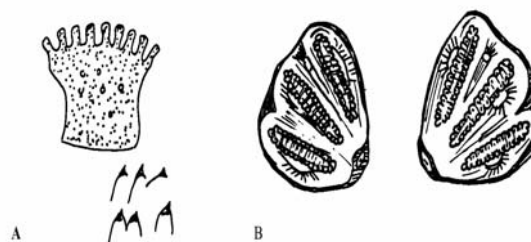


**Fig. 2.** Last instar larvae of *L. sericata*.

## DISCUSSION

Cases of human ear myiasis recorded in the literature are not numerous (5) and there are only sporadic reports from various countries of the world (1). Cho *et al.* in their literature review reported 19 cases of aural myiasis caused by *L. sericata* (6). Because of infrequent occurrence, the possibility of maggot infestation is frequently overlooked (7).

The clinical aspects of myiasis vary with the regions affected, with the species of fly involved, and with the numbers of maggots present. Although myiasis is not a common manifestation in the field of otorhinolaryngology, the possibility of its occurrence always exists. Clinical presentation of aural myiasis includes aural discharge, which is foul-smelling, purulent, and blood-tinged, severe pain, and irritation in the affected ear, and occasionally, tinnitus and vertigo (1).



**Fig. 3.** Spiracles of the third instar larva. A:left, anterior; B: right, posterior.

Aural myiasis is also dangerous, since the larvae located in the middle ear may find their way into the brain (7).

Physical examination usually reveals crawling maggots, granulations, and debris in the affected ear canal (1). In the vast majority of cases of human myiasis, especially in adults, local factors such as inflammatory and malignant disease and general factors including psychiatric illness, senile debility, and mental subnormality and alcoholism were noted to play an important predisposing role (2, 8).

Most patients belong to the poor stratum of society, dwelling in overcrowded premises that are often unsuitable for habitation and in a fly-infested environment. Myiasis in hospitalized patients occurs with some frequency. Bedridden patients with open wounds may become infested if flies are about (1, 7). Care should be taken to prevent maggot infestation in these patients especially in mentally handicapped and psychiatric patients. In addition to general improvement of sanitation and personal hygiene, it is important to keep the rooms of patients free of flies.

This case illustrates several interesting points. It shows that aural myiasis can occur in the bedridden patients with healthy ear. It is also noteworthy that aural myiasis caused by larvae of the blowfly (*L. sericata*) is uncommon in human. Myiasis of this type has not been reported previously from the Khouzestan province, southwest of Iran.

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