

CASE REPORT

CHRYSOMYA BEZZIANA INFESTATION

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Abstract

Chrysomya bezziana, one of the parasites causing myiasis, exists as an obligate ectoparasite in the animals and afflicts humans. Poor hygiene and working in contaminated areas particularly during warm seasons provides a setting for infestation with this parasite. Infestation in human and livestock are often observed in wounds, normal body orifices such as the eyes, ears, nose and mouth. The manifestations include pruritus, pain, inflammation, redness, eosinophilia, and secondary bacterial infections and rarely death. A 55-year-old man who presented with pain in the left ear, severe pruritus and vertigo was followed up and treated. After physical examination and during radical mastoidectomy, 65 larvae were obtained from his ear. These were identified as *Chrysomya bezziana*. Treatment included use of sterile oil, 15% chloroform-containing sterile oil and/or surgery.

Keywords • *Chrysomya bezziana* • screw-worm fly • Kashan

Case Report

A 55-year-old male farmer from Sar village of Kashan was referred to an outpatient clinic with pain in the left ear. After physical examination, the physician referred him to Matini Hospital for consultation with a specialist. The patient had had ear discharge since 20 days prior to his visit. He had a history of prolonged ear infection, which required mastoidectomy and tympanoplasty four years ago. He explained that while he was working on the farm several weeks before his visit, there was nite of an object to his ear that caused pain, severe pruritus and vertigo.

A total of 65 larvae were removed from his ear; 35 live larvae were removed on the same day. After repeated examinations during radical mastoidectomy, which was performed one month later, another 30 live larvae were obtained (Figure 1). The patient had a rupture, 1cm in length, in the supratentorial dura, associated with CSF leakage that was repaired by a neurosurgeon. Serial brain CTscans were performed on the 3rd, 7th and 14th postoperative days. They revealed no abscess or brain injury. The collected larvae were evaluated in the Parasitology Laboratory of Kashan University

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of Medical Sciences and confirmed to be the larvae of *Chrysomya bezziana* (screw-worm fly).

Characteristics of *Chrysomya bezziana*

Chrysomya bezziana is from the Calliphoridae family and suborder Cyclorrhapha, also named as screw-worm fly of the Old World. It is an obligate ectoparasite and one of the causative agents of myiasis.¹ *Chrysomya bezziana* has been reported from South Asia, India, Africa, Saudi Arabia, Indonesia, the Phillipines, Guinea and the Persian Gulf.² Human otomyiasis due to *Chrysomya bezziana*, larva was first reported by Abed-Benamara et al from Algeria, in 1997.³ In this patient, the larvae invaded and fed on living tissues and symptoms included pruritus, pain, vertigo, and inflammation. The mature *Chrysomya bezziana* is blue or green-blue in color and 8 to 10 mm in size. The anterior spiracle is dark brown and/or dark orange in color. They lay eggs on the living tissues of domestic and wild warm-blooded animals and humans such as wounds, normal body orifices including the eyes, ears, nose, mouth and urogenital tract (Figure 2).⁴ According to the report of Walker,⁵ its life cycle is 9 to 15 days and the mature fly lays an average of 150 to 200 eggs every two or three days. At a temperature of 37° C after 12 to 18 hours, first stage larvae emerge from the eggs and move toward the wound or wet

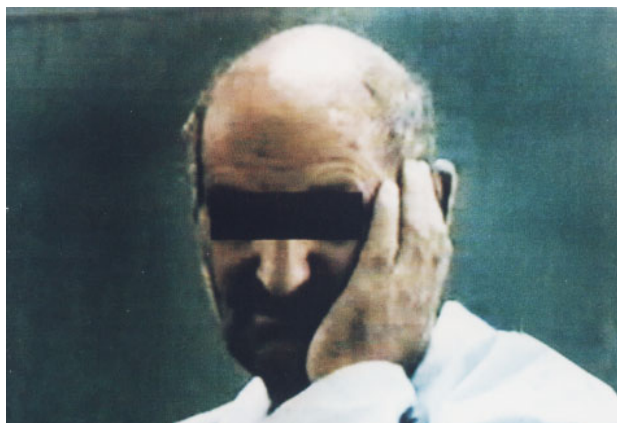


Figure 1. 55-year-old patient infested with *Chrysomya bezziana*.

tissues. They feed on tissue fluid and change into stage two and stage three larvae, after 30 hours and 4 days, respectively.⁵ The larvae in stage one are white in color and 1.5 cm in length. The larvae of stage two and three measure 4 to 9 and about 18 mm, respectively.

The worm-like larva is formed from eleven segments with the anterior spiracle located on the second and posterior spiracle on the last segment. There are also compact spurs surrounding each segment of the body. The anterior spiracle has 4 to 6 openings which are used for diagnosis.^{1,5}

The stage two and stage three larvae penetrate the living tissues of the host and nourish from it. While feeding, only the posterior spiracles are visible. Stage three larvae leave the wound after

feeding, change into pupae and then fly.⁶

Pathology and complications

The presence of *Chrysomya bezziana* in wounds, normal body orifices such as eyes, ears, nose, mouth and the urogenital tract causes pruritus, pain, vertigo, inflammation, erythema, bleeding, eosinophilia and occasionally secondary bacterial infection. Manson has reported tissue destruction and occasionally demise of humans and livestock due to the presence of numerous larvae.⁷ In this case, 65 alive larvae were surgically removed on two different days. These 65 larvae included 35 from the external ear and 30 from the middle ear. They were sent to Parasitology Laboratory of Kashan University of Medical Sciences for examination. At first, the complete larva including its posterior spiracle openings and mouth parts with its associated anterior spiracle opening were mounted on the slide. Using the clues provided by Walker, in 1994, which are based on three principle characteristics including type of the posterior spiracle openings, number of the anterior spiracle openings and the presence and shape of the body parts, the larvae proved to be *Chrysomya bezziana*.⁵

Treatment

Various therapeutic modalities including surgery, sterile oil and 15% chloroform-containing sterile oil.^{4,5,9,10} Surgery was performed for this patient and antibiotics were administered to prevent secondary bacterial infection. After three weeks no residual lesion was observed in the patient's ear.



Figure 2. *Chrysomya bezziana* (Screw-worm) extracted from the internal ear of the patient.

Patient Infested with *Chrysomya bezziana*

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