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Oral Myiasis: Case Report

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Abstract

A 21 year old male patient reported to our outpatient department with a swelling in the anterior palatal surface. On examination, few maggots were actively moving around the affected area. The maggots were isolated and local debridement of the wound was done. The maggots were preserved in 10% formalin for species identification. The maggots were identified to be *Chrysomia bezziana* Villeneuve, 1914 (Old world screw-worm fly).

Keywords: *Myiasis, Entomology, Chrysomya bezziana Villeneuve, 1914*

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Introduction

Myiasis was first described by Hope in 1840. The word Myiasis is derived from greek word "Myia" means fly and "asis" means disease (Shinohara *et al*., 2004; Rossi-Scheider *et al*., 2007; Sharma *et al*., 2008). Myiasis is caused by dipterous larvae that feed on living tissues of warm-blooded mammals. While the adults are saprophagous.

The incidence of oral myiasis is comparatively less as compared to cutaneous variety, as oral tissues are not constantly exposed to the external environment (Rossi-Scheider *et al*., 2007). Myiasis is defined as an infestation of living humans and vertebrate animals with dipterous larvae that feed on the host's dead or living tissue, liquid body substances or ingested food (Ramli and Rahman, 2002; Baskaran *et al*., 2007; Sharma *et al*., 2008). The adult female lays eggs on live mammals.

The sites of infestations are mostly surface wounds, sores and mucous membranes. The egg hatch within 24 hours and the larvae burrow inside the host's tissue with head downwards into the wound in a screw-like fashion. Hence the name "screw worm". The larvae complete their growth in 5-7 days, and then they come out of the wound to pupate (Baskaran *et al*., 2007).

Studies say development of the larvae depends on the temperature.

Wijesundra (1957) reported that the eggs hatch at 27°C in 9-10 hours. Wells and Kurahashi (1994) found larvae took a period of 9.75 days to mature at 27°C (Bharti *et al*., 2007).

The life cycle of the fly includes egg, three instars, prepupa and adult. The life span of the adult is for about 40 days and the size measures about 8.0-12.0 mm.

Materials and Methods

A 21-year-old mentally retarded male patient reported to our outpatient department. On examination, a diffuse swelling measuring around 25mm on the anterior palatal surface was present, with few maggots actively moving over the affected area. The swelling showed superficial ulcerations with mild bleeding. The patient was clinically diagnosed to have Oral Myiasis. During debridement of the infected area, the maggots were isolated and were preserved in 10% formalin. The larvae were in

PLATE 1

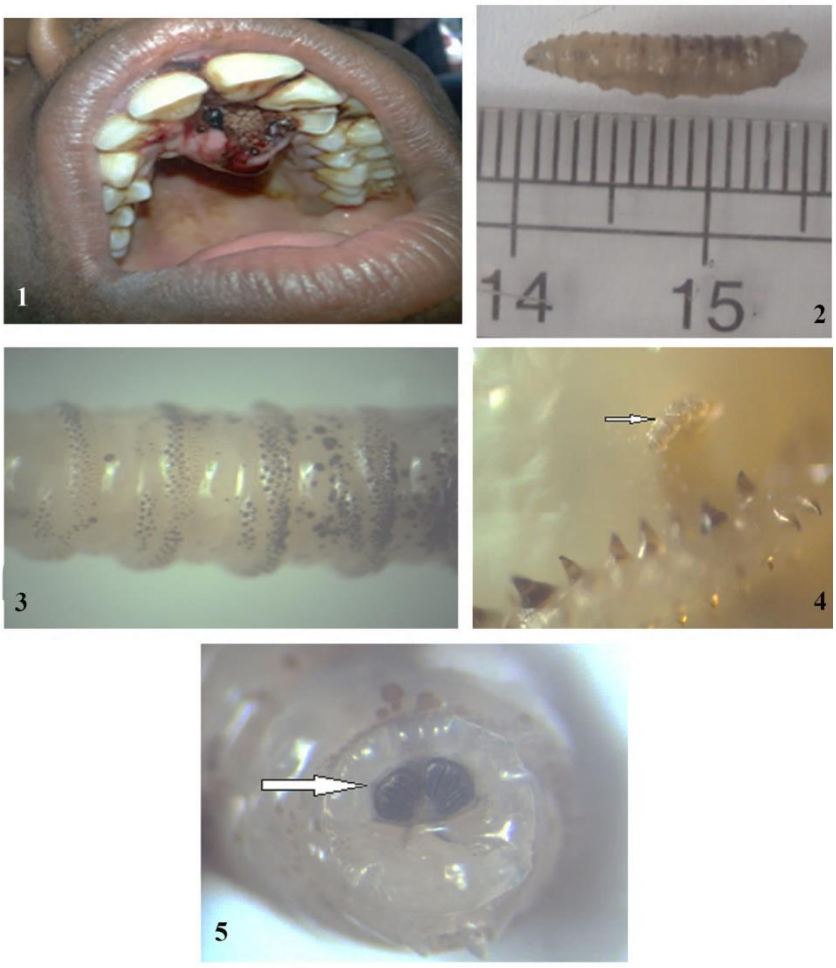

Figure 1. Oral myiasis affected individual; 2-5: *Chrysomya bezziana* larva, 2. Length; 3. Ring of spines; 4. Anterior spiracles with four lobes; 5. Posterior spiracular plates.

third instar stage. The specimens were sent for identification to the entomology department of Loyola College, Chennai. Larvae were examined under a stereomicroscope and the morphological features were photographed.

Characters used to identify species

Morphology of the larvae: The length of the larva was 15mm (Fig. 2). *Chrysomya bezziana* larva bears prominent rings of spines around the body (Fig. 3). The spines are always single pointed and thorn-like. The anterior spiracles have four lobes (Fig. 4). The posterior spiracular plates are darkly pigmented, incomplete peritreme partially enclosing three straight, slightly oval shaped slits, which point towards the break in the peritreme (Fig. 5).

Result

Based on the morphological features of the larvae it was confirmed that the larva belongs to the species '*Chrysomya bezziana* Villeneuve, 1914'.

Discussion

Human myiasis has been reported occurring in eyes, nose, Paranasal sinuses rectum, urogenital tract and the oral cavity. Only a few cases of oral myiasis are reported in the literature. Improper oral hygiene, malnutrition,

unhealthy living surroundings are found to be the predisposing factors.

Ill-fitting dentures, chronic periodontal diseases, mouth breathing, neuromuscular disturbances, peripheral vascular diseases and immune-compromised conditions are the major risk factors for poor oral hygiene. Altered weather conditions have also been reported to increase the incidence of human myiasis. In 2008, following heavy rainfall in French Guiana, an epidemic outbreak of human myiasis was reported (Sheik *et al*., 2011).In this case report, poor living surroundings, mental retardation and neuromuscular disturbance were found to be the predisposing factors for oral myiasis.

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References

Baskaran, M., Jagan Kumar, B., and Geevarghese, A. 2007. Cutaneous Myiasis of face. Journal of Oral and Maxillofacial Pathology 11: 70-72.

Bharti, M., Singh, D. and Sharma, Y.P. 2007. Effect of temperature on the development of forensically important blowfly, *Chrysomya megacephala* (Fabricius) (Diptera: Calliphoridae). Entomon 32(2): 149-151.

Hope, F.W. 1840. On insects and their larvae occasionally found in the human body. Transactions of the Royal Entomological Society of London, 2: 256-271.

Ramli, R. and Rahman, A.R. 2002. Oral Myiasis: Case report. The Malaysian Journal of Medical Sciences 9(2): 47-50.

Rossi- Scheider, T., Cherubini, K., Yurgel, L.S., Salum, F. and Figueiredo, M.A. 2007. Oral Myiasis: A Case report. Journal of Oral Science 49(1): 85-88.

Sharma, J., Mamatha, G.P. and Acharya, R. 2008. Primary oral Myiasis: A case report. Medicina Oral Patologia Oral y Cirugia Bucal 13(11): E714-716.

Sheikh, S., Pallagatti, S., Singla, I., Kalucha, A., Aggarwal, A. and Kaur, H. 2011. Oral Myiasis- A review. Journal of Clinical and Experimental Dentistry 3(5): e465-8.

Shinohara, E.H., Martini, M.Z., de Olivera Neto, H.G. and Takahashi, A. 2004. Oral Myiasis Treated with Ivermectin: Case Report. Brazilian Dental Journal 15(1): 79-81.

Wells, J.D. and Kurahashi, H. 1994. *Chrysomya megacephala* (Fabricius) (Diptera: Calliphoridae) development, Rate, variation and implications for forensic entomology. Japanese Journal of Sanitary Zoology 45(4): 303-309.

Wijesundra, D.P. 1957. The life history & bionomics of *Chrysomya megacephala* (Fab.). Ceylon Journal of Science 25: 169-185.