



Tracheostomy wound myiasis in a patient with hypoxic encephalopathy

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Case illustrated

A 28-year-old Japanese man with a tracheostomy was admitted to our hospital with hypoxic encephalopathy 7 years ago. In June 2023, a nurse found maggots around the tracheostomy (Figs. 1 and 2, Video S1). Vital signs were normal, with no maggots apparent in the mouth, nose, ears, or eye areas. Chest computed tomography showed no lung abnormalities. The tracheostomy tube was changed and all maggots were removed using a cotton swab. The maggot is milky white, with a broad, rounded tail structure and a pointed head. There were several body segments visible, including the black pharyngeal skeleton (which has three antennas) on the head and the posterior spiracle on the tail (Fig. 2). On the basis of these specific characteristics, the species was classified as order Diptera, family Sarcophagidae. After two days, no more maggots were found.

This case is a nosocomial myiasis that occurred in a patient with hypoxic encephalopathy. The city where the hospital for the patients is situated is in a temperate zone; during the Japanese winter, it experiences snowfall and rather low temperatures. June is a wet and humid month. The patient was admitted to the general ward and placed in a four-patient room.

In hospitalized patients, myiasis is mostly encountered in tropical and subtropical regions of developing countries among patients from rural communities with inadequate sanitation. Patients have mostly

been unconscious or on ventilation, with several cases in intensive care units. Myiasis is frequently identified in the ears, nose, or mouth, and rarely in tracheostomy wounds (Table S1) [1–4]. The prognosis is typically favorable, but intubated patients are particularly susceptible to life-threatening airway obstruction [3]. Ivermectin is effective, but manual removal is considered the most suitable treatment [1,5]. Flies may have entered from outside and set eggs within the body fluids and wet gauze in the patient. For patients who are unconscious or immobile, like this patient, several measures should be taken to prevent myiasis. These include keeping the patient isolated in a private room; making sure the tracheostomy gauze is changed frequently and adequately sputum aspiration to minimize contamination; refraining from opening hospital room windows or installing insect nets when they are open; and promptly eliminating flies if they are seen in the hospital ward.

Ethical approval

This work was performed based on the Declaration of Helsinki and its amendments and the Ethical Guidelines for Clinical Research from the Ministry of Health, Labour and Welfare, Japan.

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Fig. 1. Maggots were discovered surrounding the tracheostomy site. There were many milky-white maggots measuring 5–7 mm in length surrounding the tracheostomy tube. No maggots were detected within the tracheostomy conduit.

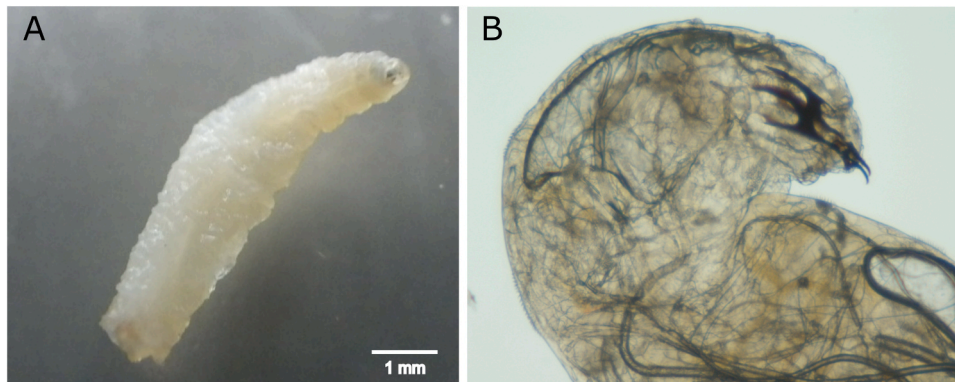


Fig. 2. The larvae were identified as order Diptera, family Sarcophagidae. A) Image of a complete larva. B) Microscopic image of a larva's head (100×).

agencies in the public, commercial, or not-for-profit sectors.

Consent

Written informed consent was obtained from the patient's guardian for publication of this case report and accompanying images.

CRedit authorship contribution statement

Yukie Yoshioka: Writing – review & editing, Conceptualization. **Tooru Enomoto:** Writing – review & editing, Data curation, Conceptualization. **Yukari Kuwata:** Writing – review & editing, Data curation, Conceptualization. **Chiyo Kiriba:** Writing – review & editing. **Atsushi**

Kuwata: Writing – review & editing, Data curation. **Kazuhiro Itoh:** Writing – review & editing, Writing – original draft, Data curation, Conceptualization. **Hikomichi Iwasaki:** Writing – review & editing, Writing – original draft, Conceptualization. **Yasuhiko Mitsuke:** Writing – review & editing. **Hiroshi Tsutani:** Writing – review & editing, Writing – original draft. **Michie Nakayama:** Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.idcr.2024.e01969](https://doi.org/10.1016/j.idcr.2024.e01969).

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Video S1. The tracheostomy site of the patient was encircled by a number of maggots. Maggots wriggled around the tracheostomy foramen. A video clip is available online. Supplementary material related to this article can be found online at [doi:10.1016/j.idcr.2024.e01969](https://doi.org/10.1016/j.idcr.2024.e01969).