Research Note

A case of myiasis due to *Sarcophaga melanura* (Diptera: Sarcophagidae) in a patient suffering from pontine infarction

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The authors have already reported four cases of myiasis involving the families Sarcophagidae and Calliphoridae. These were due to *Sarcophaga peregrina* (Japanese name: senchi-nikubae) and *S. similis* (Japanese name: nami-nikubae) (Chigusa *et al.*, 1994), and *Lucilia sericata* (Japanese name: hirozu-kinbae) and *L. illustris* (Japanese name: midori-kinbae) (Chigusa *et al.*, 1996).

This time, we encountered a case of wound myiasis in which the host patient had been suffering from tetraplegia due to pontine infarction for 12 years. The causative maggot in this case was identified as *Sarcophaga melanura* (Japanese name: shiriguro-nikubae), making this the third unequivocal report of human myiasis in the world (Ito and Koshimizu, 1955; Miyamoto *et al.*, 1996).

CASE PRESENTATION

The patient, a 66-year-old man living in Kasukabe City, Saitama Prefecture, had a 12-year history of tetraplegia, speech impediment and bilateral central facial paralysis due to pontine infarction, which had

occurred in March 1984. Thereafter, he had suffered an attack of unstable angina and cardiac infarction in April 1988. Necrosis of the left lower leg, probably caused by arteriosclerosis obliterans (ASO), had developed 2 years prior to this occurrence of myiasis. The bacteria *Pseudomonas aeruginosa* and *Proteus mirabilis* were detected in the necrotic lesion. More than 10 milky white dipteran larvae were found in the lesion on July 7, 1996. The maggots, 5 mm long, were initially identified as 2nd instar larvae of the family Sarcophagidae from their distinctive posterior spiracle.

The larvae collected were definitively identified as 2nd instar larvae of *Sarcophaga melanura* (*Helicophagella melanura*) (Meigen, 1826) based on the morphological characteristics of the cephalopharyngeal sclerite (Fig. 1A), and anterior (Fig. 1B) and posterior (Fig. 1C) spiracles.

DISCUSSION

The bases of onset for myiasis are a necrotic lesion such as due to adenocarcinoma (Kani *et al.*, 1981), squam-

Fig. 1. The cephalopharyngeal sclerite (A), anterior spiracle (B) and posterior spiracle (C) of *Sarcophaga melanura*.

ous cell carcinoma (Hasegawa *et al.*, 1979; Shitara, 1989) and basal cell carcinoma

(Kouya and Ueno, 1977; Hasegawa *et al.*, 1979) and trauma or surgical wound (Kinebuchi and Ikemura, 1972; Khan and Khan, 1985).

Greenberg (1984), Chigusa and Sugiyama (1987) and Chigusa *et al.* (1994) have indicated that debilitated persons, persons who cannot drive away flies by themselves, such as neonates and patients who are mentally disturbed or in a comatose state are predisposed to fall victim to myiasis. Moreover, Chigusa *et al.* (1996) have pointed out that not only elderly or debilitated persons, but also those with psychiatric disorders such as schizophrenia, should be protected from flies, because of their autism and/or diminished sensitivity, which may make it easy for flies to deposit eggs or larvae on the patients' body surface or orifices. The present patient had been suffering from tetraplegia, *i.e.*, unable to change his posture by himself, since suffering a pontine infarction in March 1984. Therefore, he was at risk of exposure to myiasis, as indicated above.

Additional factors for predisposition to myiasis in the veterinary field have been studied by several investigators (Watts *et al.*, 1979; Gherardi *et al.*, 1981; Gherardi *et al.*, 1983). These are dermatophilosis, an actinomycotic disease caused by *Dermatophilus congolense*, and bacterial fleece rot, a superficial dermatitis induced by moisture and bacterial proliferation on the skin, resulting in a matted band of discoloured fleece (Gherardi *et al.*, 1981). Fleece rot is caused predominantly by *Pseudomonas aeruginosa* (Watts *et al.*, 1979). The present patient's necrotic lesion of the leg was contaminated with *Pseudomonas aeruginosa* and *Proteus mirabilis*. Gherardi *et al.* (1983) suggested that dermatophilosis and fleece rot interact synergistically in attracting blowflies and their subsequent oviposition. Therefore, it is assumed that the fly, *Sarcophaga melanura*, was attracted to the leg lesion through the synergistic effects of the presence of the bacteria and their metabolites.

The authors emphasize that clinicians

should pay special attention to myiasis when wounds of patients are contaminated with bacteria.

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摘 要

脳梗塞患者に発生したシリグロニクバエによるハエ症

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埼玉県春日部市在住の66歳の男性患者の左下腿の皮膚潰瘍部に発生したシリグロニクバエによるハエ症を報告した。同患者は昭和59年に脳梗塞に罹患し以来四肢麻痺の状態、今回のハエ症は平成8年7月7日に発生した。発生部位の細菌学的検索では *Pseudomonas aeruginosa* と *Proteus mirabilis* が検出され、この緑膿菌感染がハエ症を発生させ易くした可能性が示唆された。