A Case of Intestinal Myiasis in Japan

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A case of intestinal myiasis caused by larvae of Sarcophaga peregrina (Japanese name: senchi-nikubae) is reported. The patient passed stools containing live fly larvae for 2 days, but was otherwise asymptomatic. The patient seems to have been infested accidentally as a result of having eaten “yakitori” in which the fly had deposited its larvac. This paper is the first report of intestinal myiasis caused by the 3rd instar of this species.

(Key Words: Myiasis, Intestinal myiasis, Sarcophaga peregrina, 3rd instar)

INTRODUCTION

Myiasis refers to the infestation of live human and vertebrate animals with dipterous larvae which feed on the host’s dead or living tissues, liquid body-substances or ingested food, at least for a period of time (17). Various types of myiasis are classified anatomically by the locations of the affected tissues, e.g., intestinal, urogenital, aural, nasal, ophthalmic or dermal (1, 3, 4, 9, 10). In this paper, we report a case of intestinal myiasis which occurred in Japan.

CASE REPORT

The patient was a 58-year-old healthy American man residing in Hadano city, Kanagawa prefecture, Japan. On June 11, 1987 he noticed the presence of many milky white-colored worms, which were moving actively in his stool. Two worms were also observed on the following day. However, he did not have any other symptoms such as diarrhea, vomiting or abdominal pain. No worms were detected subsequently. On June 6 he had eaten “yakitori” in a bar in Shinjuku, Tokyo and noted at the time that its taste was strange.

One worm found on the 2nd day was brought to our laboratory. It was the 3rd instar of a fly about 15 mm long (Fig. 1). After three days at 25°C it pupated, but it did not hatch out (Fig. 2). The worm was identified as Sarcophaga (= Boettcherisca) peregrina (Robineau Desvoidy, 1830) on the basis of the morphological features of the cephalopharyngeal sclerite (Fig. 3) and anterior spiracles (Fig. 4) of the puparium (2, 5).

DISCUSSION

Intestinal myiasis is caused by dipterous larvae which are accidentally swallowed. Consequently, identification of food which has been contaminated with eggs or larvae is impossible in most cases (10). In the present case, we suggest that the patient had eaten “yakitori” in which fly larvae had been deposited. Since the patient felt that the taste of the “yakitori” was strange when he ate it, it seems that the meat might have been stale.

S. peregrina (Japanese name: Senchi-nikubae), the insect detected in this case, is the most common member of the Sarcophagidae found throughout Japan (2, 6). It breeds generally in animal carcasses, garbage, animal dung and human feces. The flies also deposit larvae on stale meat (1). The deposited larvae immediately move to the inner part of the meat to avoid...
Fig. 1  A third instar of *Sarcophaga peregrina* detected in the patient's stool. × 6

Fig. 2  Puparium which developed from the 3rd instar shown in Fig. 1. × 8

Fig. 3  Cephalopharyngeal sclerite removed from the puparium (Fig. 2). A, labial sclerite; B, dental sclerite; C, hypostomal sclerite; D, dorsal and ventral cornua. × 70
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To our knowledge, 44 cases of gastrointestinal myiasis (14 species of flies) in Japan have been reported (10, 12, 14, 16). In many cases, the 1st or 2nd instar was detected. The present report is the 7th case caused by S. peregrina, but the first in which the 3rd instar was found.

When the larvae of S. peregrina were bred in the laboratory at 25°C to 35°C, they developed into the 3rd instar 2 or 3 days after birth and pupated 5 to 8 days after birth (13). The present case showed that 3rd instar larvae appeared in the stools 5 to 6 days after birth and developed into a puparium 9 days after birth assuming that the larvae had just been deposited. This observation indicates that growth of larvae in the human digestive tract, although delayed, is possible.

Intestinal myiasis is benign or even asymptomatic in many cases including the present one. However, sometimes severe clinical symptoms are shown, depending on the number and species of fly larvae and their location within the digestive tract (4, 8, 10, 15). Indeed, when human volunteers were given larvae of Calliphora sp. and Musca domestica in gelatin capsules under experimental conditions, they experienced nausea, vomiting, cramps, and diarrhea for 48 h (7). Morikawa (11) also reported that haemorrhagic gastritis and gastric catarrh were found in 83% of rats given S. peregrina perorally, and in 50% given Musca vicina. The mucosal damage induced mechanically by S. peregrina was the severest examined so far.

"Yakitori" is a popular food both for Japanese and foreigners. The name originally referred to skewered grilled chicken but now also means skewered grilled entrails of cattle or pig. Inadequately heated or frozen meat of such animals is also a source of human infections with several parasites (1). In conclusion, therefore, we would like to emphasize that meat must be well prepared and eaten in clean eating places at all times.

REFERENCES
11) Morikawa T: Studies on myiasis. 2. Experimental studies on the intestinal myiasis in rats. Ochanomizu


