

Research Note

**Current Status of *Gnathostoma doloresi* Infection in Wild Boars
Captured in Miyazaki Prefecture, Japan**

YUKIFUMI NAWA AND JUN-ICHI IMAI

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Gnathostoma doloresi is naturally a parasite of wild boars and pigs (Miyazaki, 1954). Recently, however, three confirmed and seven suspected cases of human infection with the advanced third-stage larvae of *G. doloresi* were found in Miyazaki Prefecture (Ogata *et al.*, 1988; Nawa *et al.*, 1989a, b). Thus, this species is now considered as one of the important zoonotic parasites (Nawa *et al.*, 1989b). To identify the source of infection to human we are currently investigating the natural life cycle of *G. doloresi* in the central part of Miyazaki Pref. Here we report the prevalence of infection with *G. doloresi* among wild boars captured in this area.

A total of 10 wild boars, *Sus scrofa leucomystax*, captured during the last hunting season (Nov. 1988 – Feb. 1989) were examined; 7 at around Shiromi Village, Saito City, 2 at Kaeda Valley, and 1 at Tano-Cho, Miyazaki-Gun. The stomachs were cut open along the greater curvature and the inner- and outer-surface were carefully examined for the presence of worms. The gastric contents were also examined for free worms. The parasites were identified as *G. doloresi* from their morphological characteristics such as cuticular spines on the body surface of the worms. The shape and the size of eggs in the uterus of female worms were also examined to confirm the identification of

species.

Results are summarized in Table 1. Seven out of 10 wild boars harbored *G. doloresi* worms. The wild boars of about 20 kg body weight showed high worm burden, while the larger or smaller animals harbored only few worms. The average number of worms per infected animal was 7.0, ranging from 1–14. The majority of worms were adults and were found penetrating their head into the stomach wall. Only in one case (No. 5) free worms were found in the gastric contents. In case No. 1, a small, immature worm was found beneath the serosal surface. In all but one parasitized animals, parasitic burrows surrounded by a thick crater-like protuberance were seen on the stomach wall, mainly located in the fundus. Some burrows were parasite-free, indicating a past history of infection.

Miyazaki Pref. has long been known as the endemic area of *G. doloresi* and the high rate of infection with this parasite in wild boars in this area has been reported repeatedly (Ishii, 1956; Ashizawa *et al.*, 1979). Our results show that the prevalence of this parasite in the mountainous area of Miyazaki Pref. is still remaining at high level. Recently we found that the poisonous snakes, *Agkistrodon halys*, captured in and around Shiromi Village, where 7 of 10 wild boars examined in this study were obtained, harbored the advanced third stage larvae of *G. doloresi* with a 100% prevalence (Imai *et al.*, 1988). Thus, the natural life cycle of *G. doloresi* is preserved well in this area. Similar to our results, Sakaguchi *et al.* (1985) reported an extremely high rate of *G. doloresi* infection in wild boars captured in

Department of Parasitology, Miyazaki Medical College, Miyazaki 889-16

Correspondence to: Yukifumi Nawa, Department of Parasitology, Miyazaki Medical College, Kiyotake, Miyazaki 889-16

名和行文 今井淳一 (宮崎医科大学寄生虫学講座)

Table 1 Number of *G. doloresi* worms and parasitic burrows found in the stomach of wild boars captured in Miyazaki Prefecture

Wild boars			No. of worms						No. of parasitic burrows (with/without worms)			
No.	B.W.	Sex	Cardia	Fundus	Pylorus	Free	Serosa	Total	Cardia	Fundus	Pylorus	Total
1	40 kg	F	0	0	0	0	1	1	0	0	0	0
2	70	F	0	4	0	0	0	4	0	3/6	0	3/6
3	10	?	0	3	0	0	0	3	0	0/2	0	0/2
4	60	M	0	0	0	0	0	0	0	0	0	0
5	18	?	0	9	2	3	0	14	0	4/8	1/1	5/9
6	10	?	0	0	0	0	0	0	0	0/13	0	0/13
7*	20	M	3	11	0	0	0	14	0/7	10/44	0	10/51
8	10	?	0	1	0	0	0	1	0	1/3	0	1/3
9†	20	F	0	11	0	0	1	12	0	0/4	0	0/4
10†	70	M	0	0	0	0	0	0	0	0/1	0	0/1

*: captured at Tano-Cho, Miyazaki-Gun

†: captured at Kaeda Valley, Miyazaki-Gun

Kumamoto Pref. Therefore, even by now, *G. doloresi* seems to be widely distributed not only in Miyazaki and Kumamoto Prefs. but also in other parts of the mountainous area of Kyushu District.

Up to now, the confirmed human cases of infection with this species were found only in Miyazaki Pref. (Ogata *et al.*, 1988; Nawa *et al.*, 1989a, b). However, it is highly likely that more human cases would be found in other places because the prevalence of this parasite in wild boars seems to be high in known endemic area. In fact, a suspected case of gnathostomiasis *doloresi* was found in Kumamoto Pref. (Mimori, personal communication). Physicians as well as parasitologists should thus remind the possibility of gnathostomiasis *doloresi* when they encounter the patients showing creeping eruption or mobile, localized swelling with redness.

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