

Gastrointestinal pseudoparasitism by chestnut weevil (*Curculio sikkimensis*) larvae in a dog

A Shiba dog accidentally ate some chestnuts (*Castanea crenata*) without chewing them. Faeces produced between 1 and 5 days later contained four larvae, two of which were moving when observed. These larvae were creamy white, crescent or spindle-shaped, approximately 8 to 12 mm in length and 4 to 5 mm in maximum width, and had a brown head capsule but no legs (Fig 1) and were identified as chestnut weevils (*Curculio sikkimensis*). These are serious plant parasites but the dog did not have any clinical signs, consistent with a diagnosis of gastrointestinal pseudoparasitism.

The survival of chestnut weevil larvae after being treated with artificial gastric juice was examined. Weevil-infested chestnuts were divided into three groups and placed in 200-mL plastic beakers containing artificial gastric juice consisting of 100 mL saline, 0.5 g pepsin (MP Biomedicals Inc, Ohio, USA) and 0.5 mL hydrochloric acid (Wako Pure Chemical Industries, Osaka, Japan). These beakers were kept at 38°C for 1 or 3 hours

in an incubator, and then the chestnuts were carefully examined for weevil larvae. If the larvae moved within 1 hour, they were considered alive. Most of chestnut weevil larvae in the chestnuts survived after being treated with artificial gastric juice for 1 and 3 hours (Table 1).

Because the rinds of chestnuts are mostly indigestible, the survival of the larvae in the nut fruit is apparently enhanced if they are swallowed without chewing. In addition, our investigations showed that the larvae in the chestnuts are resistant to pepsin and hydrochloric acid as found in stomach acid, hence they may appear undigested and live in the faeces of dogs. Understandably, owners may assume that these or similar larvae are intestinal parasites but veterinarians should also consider the possibility of pseudoparasitism. The prevalence of chestnut weevil pseudoparasitism remains to be established.



FIG 1. A chestnut weevil larva in the faecal sample

Table 1. Survivability of chestnut weevil larvae in the chestnuts treated with artificial gastric juice for 1 and 3 hours

Group	1 hour		3 hour	
	No. of larvae	Number of living larvae	Number of larvae	Number of living larvae
1	12	12	11	11
2	9	9	3	2
3	4	4	0*	0*

The first group was unsegmented chestnuts, the second group was segmented into half, and the third group was segmented into five or six pieces. Each group contained two or three weevil-infested chestnuts.

*No larvae were observed.

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