

## A case of gastric pseudoterranoviasis in a 43-year-old man in Korea

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**Abstract:** A case of *Pseudoterranova decipiens* infection was found in a 43-year-old man by gastroendoscopic examination on August 20, 1996. On August 6, 1996, he visited a local clinic, complaining of epigastric pain two days after eating raw marine fishes. Although the symptoms were relieved soon, endoscopic examination was done for differential diagnosis. A white, live nematode larva was removed from the fundus of the stomach. The larva was 38.3 × 1.0 mm in size and had a cecum reaching to the mid-level of the ventriculus. A lot of transverse striations were regularly arranged on the cuticle of its body surface, but the boring tooth and mucron were not observed at both ends of the worm. The worm was identified as the 4th stage larva of *P. decipiens*.

**Key words:** *Pseudoterranova decipiens*, anisakis larva, gastric pseudoterranoviasis

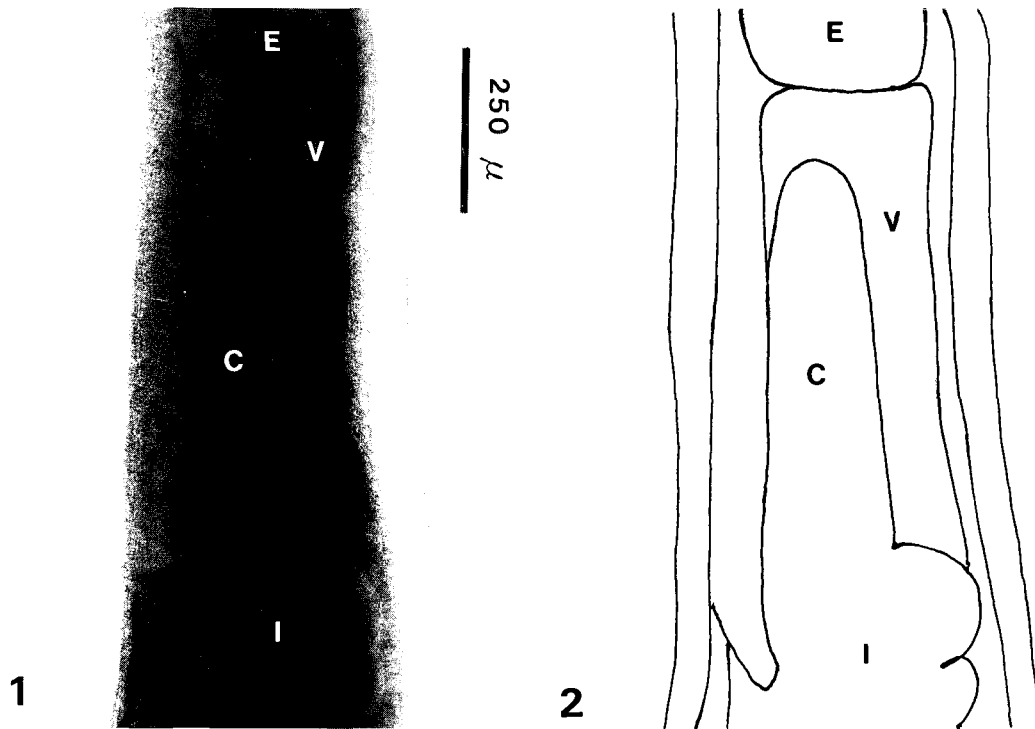
A new case of pseudoterranoviasis is presented with parasitological description. This is the 11th case of *Pseudoterranova* sp. infection in Korea as literatures are concerned (Seo et al., 1984; Lee et al., 1985; Im et al., 1990, 1995; Im and Shin, 1991; Sohn and Seol, 1994; Lee et al., 1998).

A 43-year-old man visited the outpatient Department of Internal Medicine, Hallym University Hospital in Chunchon, Korea, for further evaluation of epigastric pain on August 9, 1996. He had a history of eating raw marine fishes such as *Doryteuthis bleekeri*, *Bothidae* sp. on August 4, and felt sudden onset of severe unendurable epigastric pain on August 6. He was admitted to a Hospital in Wontong-gun, Kangwon-do, Korea on August 7. However, symptoms were relieved from August 9. He was a heavy drinker over 20 years and had a history of peptic ulcer six years ago.

Palmar erythema and spider angioma were found on his chest. Diagnostic evaluation was done to rule out acute pancreatitis. In gastroendoscopic examination, a white, slender, live worm was found in the mucosa of the fundus on August 20. Multiple erosions were also seen at the antrum. Ulcer scar and hyperemic mucosa were also observed in the duodenum. He was diagnosed as the case of gastric anisakiasis with erosive gastro-duodenitis.

The worm was fixed in 10% formalin, cleared in alcohol glycerine and mounted in glycerine jelly. The mounted specimen was observed and measured under a light microscope. The nematode larva is slender and tapers at both ends. The mouth is surrounded by three lips but the boring tooth is lacking. The intestinal cecum is stretched anteriorly to the level of anterior one-third portion of the ventriculus (Figs. 1, 2). The tail is conical without a mucron. Reproductive organs are not developed. The cuticle is transversely striated.

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**Figs. 1-2.** The intestinal caecum is stretched anteriorly to the level of anterior one-third of the ventriculus. **Fig. 1.** A cleared worm. **Fig. 2.** Diagram of Fig. 1. E, esophagus; V, ventriculus; C, caecum; I, intestine.

The measurement and indices of the worm are as follows: body length (L) 38.27 mm; body width (W) 1.00 mm; total length of esophagus (E) 3.54 mm; muscular esophagus (M) 2.42 mm; ventricular esophagus (V) 1.12 mm; caecum (C) 0.61 mm; tail (T) 0.13 mm;  $\alpha$  (L/W) = 38.35;  $\beta_1$  (L/E) = 10.81;  $\beta_2$  (L/M) = 15.81;  $\beta_3$  (L/V) = 34.20;  $\gamma$  (L/T) = 289.90;  $W$  (V/C) = 1.83;  $Y$  (L/C) = 62.74. The worm is identified as the 4th stage larva of *Pseudoterranova decipiens* based on the morphological characteristics and indices. The worm was stocked in the Department of Parasitology, College of Medicine, Hallym University (stock number: HL1996-1).

Of anisakiasis cases reported in Korea, infection with *Pseudoterranova* spp. is not so many. The majority of the cases is infection with *Anisakis simplex* (*Anisakis*) type I larvae (Chai et al., 1986, 1992). Out of 90 anisakid worms found in Cheju-do, 87 were *A. simplex* larvae (Im et al., 1995). Most of the patients complained of acute epigastric pain with

history of eating raw marine fish. This symptom usually developed about 12 hr to 1 day after ingestion of raw marine fish. Edema, erosion or ulcer of the mucosa and hemorrhage were observed in involved gastric wall (Im et al., 1995). The morphological characteristics of the present specimen are compatible with those of *P. decipiens* larvae (Koyama et al., 1969; Sohn and Seol, 1994). It was easily distinguished from the larvae of *Anisakis*, *Raphidascaris*, *Hysterothylacium* and *Contra-caecum* by means of the esophago-intestinal morphology such as the absence of the ventricular appendage and the presence of the intestinal caecum. Other morphological features, i.e. well-defined lips, absence of boring tooth and mucron at both ends, and appearance of regular transverse striations on the cuticle, suggested that this larva had molted in the stomach of the patient and grown up a 4th stage one.

There is still no report of molluscan or fish intermediate hosts of *P. decipiens* in Korea

(Chai et al., 1986, 1992). The history of infected persons in previous reports in Korea suggested that *Sebastes inermis* (Sohn and Seol, 1994), squid and yellow corvina (Im and Shin, 1991) could be candidates of intermediate hosts in Korea. Although the patient said that he enjoyed several kinds of raw marine fishes such as *Doryteuthis bleekeri*, *Bothidae* sp., etc., it is not clear which one is the principal source of infection. From Bohai Sea, China, *Lateolabrax japonicus* was known as the intermediate host of *P. decipiens* (Ma et al., 1997). In Japan, a few kinds of marine fishes including some flat fish (halibut), cod (*Alaska pollack*), sailfin sand fish, nurf smelt and arctic smelt were reported as the intermediate host of *P. decipiens* (Nagano, 1989). Codfish from the Antarctic Ocean were proven to be a fish host for *P. decipiens* (Chai et al., 1995). The verification of intermediate host of *P. decipiens* in Korea is necessary.

This is a very rare case since the cases of gastric anisakiasis has been usually found within a day after ingesting raw marine fishes. However, a live worm was found during the evaluation work-up for gastrointestinal disease. The interval between the dates of ingestion of raw marine fishes and endoscopic procedure is 16 days. Therefore, the worm is believed to have been alive for 16 days in the human stomach. The larger size of the worm than in previous reports is probably due to the result of growth in the human stomach for 16 days.

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