

## A human case of *Stellantchasmus falcatus* infection in Korea

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**Abstract:** In an attempt to find the worm producing unidentified egg, one minute fluke was collect from a Korean patient after praziquantel administration. The fluke was identified to be *Stellantchasmus falcatus* by the expulsor. Brackish water fish was suggested to be a probable source of the infection.

**Key words:** *Stellantchasmus falcatus*, human infection

*Stellantchasmus falcatus* is one of the minute intestinal trematodes of fish-eating birds and mammals such as cats, dogs, and rats (Onji and Nisho, 1924; Takahashi, 1929). The second intermediate hosts, possible sources of human infections, are several kinds of brackish and freshwater fishes (Chai and Sohn, 1988; Waikagul, 1998). Natural human infections have been reported in the Philippines (Africa and Garcia, 1935), Hawaii (Alicata and Schattenburg, 1938), Japan (Kagei, 1964), and Thailand (Radomyos et al., 1990). Also, five human cases of *S. falcatus* infection have been reported in Korea (Seo et al., 1984; Sohn et al., 1989; Son et al., 1994).

From a 66-year-old Korean man who was living in Namhae-gun, Kyongsangnam-do, Korea, and was suffering from chronic viral hepatitis, unidentified helminth eggs were found during a routine stool examination. The unidentified egg, 39  $\mu\text{m}$  by 22  $\mu\text{m}$  in size, was elliptical and was light yellow in color. The shell surface was smooth and the operculum was inconspicuous. The man had a infrequent history of eating raw flesh of several kinds of brackish water fish. He experienced no

subjective gastrointestinal troubles.

To collect and identify the worm producing the unidentified egg, the patient was treated with a single dose of 10 mg/kg praziquantel and purged with magnesium sulfate. Diarrheal stools were collected, washed, and sedimented with physiological saline. Through scrutinizing the fecal sediments under a dissecting microscope, one fluke was collected and was identified as *Stellantchasmus falcatus* on the basis of morphological characteristics. The fluke was ovoid, 480  $\mu\text{m}$  long and 322  $\mu\text{m}$  wide. The whole surface of the body was covered with scale-like minute tegumental spines (Fig. 1). The ventrogenital sac located in the midmedian of the body and contained the ventral sucker armed with minute spines. Seminal vesicles were bipartite into the proximal thin-walled and distal strongly thick-walled muscular (expulsor) parts. The expulsor was oblique and sinistral to the median line between the ventral sucker and ovary. The ovary was facing slightly towards the right. The shape of intra-uterine egg (26  $\mu\text{m}$  by 15  $\mu\text{m}$ ) was ovoid and operculated.

Morphological findings of the fluke collected from this patient agreed well with respect to the previous report on *S. falcatus* (Seo et al., 1984) such as the presence of the expulsor, the location and constitution of the ventro-

• Received 20 January 2000, accepted after revision 24 February 2000.

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**Fig. 1.** *Stellantchasmus falcatus* adult worm (unstained) showing a muscular expulsor (EP) collected from the patient. Bar=100  $\mu$ m.

genital sac, and the relative location of the ovaries and testes. It is probable from the patient's episode that some brackish water fish may have been the source of infection (Chai and Sohn, 1988; Sohn et al., 1989).

The eggs of *S. falcatus*, which are found in the uteri or in the fecal samples of the patients, are operculated with a range 23-27  $\mu$ m in length and 10-14  $\mu$ m in width (Seo et al., 1984; Sohn et al., 1989; Radomyos et al., 1990). The unidentified egg found in the subjected patient was unoperculated and was larger in size than the reported *S. falcatus* eggs; hence, the unidentified eggs were not of *S. falcatus*. Since natural human infection by *S. falcatus* have been reported from several cases by intestinal flukes, it was not easy to say specific symptoms provoked by *S. falcatus* (Seo et al., 1984; Hong et al., 1986; Sohn et al., 1989; Son et al., 1994). Heterophyid flukes produce a small amount of eggs per day (Chai and Lee, 1990). Therefore, with limited eggs

available, it is difficult to assess possible infection through a routine stool examination, especially with light worm burden cases. Previous *S. falcatus* cases reported in Korea were encountered by an unintentional collection of intestinal flukes from diarrheal stools after anthelmintic administrations. Therefore, it can be speculated that there would be many undetected cases of heterophyid infection other than *Metagonimus* spp. in Korea, especially in towns and villages along the coast of the Korean peninsula.

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