

## A Case of Human Fascioliasis

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**= Abstract =** The sixth case of human fascioliasis in Korea is reported. An adult of *Fasciola* sp. was found in the gallbladder of a 59-year-old woman during an operation for cholecystectomy.

The worm was serially sectioned, reconstructed and confirmed to be an adult of *Fasciola* species.

**Key words:** *Fasciola*, Fascioliasis, Parasite, Gallbladder

### INTRODUCTION

*Fasciola* species is a common parasite of cattle; its high prevalence and distribution are well known in Korea (Rhee *et al.* 1973). Humans can be accidentally infected by this liver fluke. Although more than 1300 cases of human fascioliasis were reported from various parts of the world (Yoshida *et al.* 1974), 5 cases of human fascioliasis have been reported in Korea. Two of them are biliary fascioliasis (Cho *et al.* 1976, Hong *et al.* 1986). The other two cases are ectopic fascioliasis forming granulomatous lesions in intestinal walls (Lee *et al.* 1982; Park *et al.* 1984). The remaining one case was a rural child who presented with abdominal pain and intermittent edema, and was diagnosed by egg morphology together with positive serology. We report the sixth case of human *Fasciola* species infection in Korea.

### CASE REPORT

The patient was a 59-year old housewife residing at Sok-Cho City, Kangwon-Do. She was in relatively good health, until 3 years ago, when episodic abdominal colic developed. At that time, she was diagnosed as having a gallstone by ultrasonography; operation was recommended, but she deferred. Bouts of colicky abdominal pain persisted.

Ten days before the present admission she had another episode of epigastric pain. The admission physical examination was essentially normal except for epigastric tenderness. No organomegaly was

detected. Laboratory data showed hemoglobin of 13.5 gm/dl, hematocrit of 41%, and WBC of 4900/mm<sup>3</sup> with 53% seg, 46% lymph and 1% eosinophils. ESR was 22/hr. Total bilirubin was 0.6mg/dl. Given the diagnosis of cholecystitis, resection of the gallbladder was done. Upon opening the gallbladder, there was a large dark flat worm. The common duct was slightly dilated but no stone was found. There were multiple enlarged lymph nodes around the common duct. The liver was grossly unremarkable. There was no ascites or any other abnormality in the abdominal cavity.

The patient did not eat raw meat in the recent past. She recalled no history of handling water plants, but does work in a rice paddy.

Pathological examination of the gallbladder showed a 6×3×3cm organ with a smooth surface. The mucosa was slightly irregular, with partial loss of the normal velvety appearance. No stone was present. Microscopically, there was thickening of the wall, and infiltration of chronic inflammatory cells in the mucosa and the muscle layer. Eosinophils were prominent among the infiltrates. Mucosal ulceration was not present. No worm nor eggs were seen in the gallbladder.

Parasitological examination was made with serial sections of the entire worm. A total of 160 sections was obtained. The sections were reconstructed and three dimensional orientation was made (Fig. 1, 2, 3). The worm was 1.6 cm long and 0.8cm wide.

The syncytial tegument had many compact



Fig. 1. Schematic reconstruction to show contour of the worm and digestive system.

spines with rounded tips. Beneath the tegument a well developed muscle layer and many subtegumental cells were seen. (Plate 1).

A relatively small oral sucker at the anterior portion was connected with a well developed pharynx which was connected to intestine by a short esophagus (Fig. 3). The branching of the intestine was quite characteristic as shown in Fig. 1. The proximal intestine showed relatively simple branching. As it went distally or posteriorly, it was highly branched. The ventral sucker consisted of smooth muscle as did the oral sucker. It was not connected to any other structure (Fig. 3).

As for the female genital system (Fig. 2), the dendritic ovary was located just anterior to the anterior testis. Well developed, follicular vitellaria were located along both lateral walls of the body

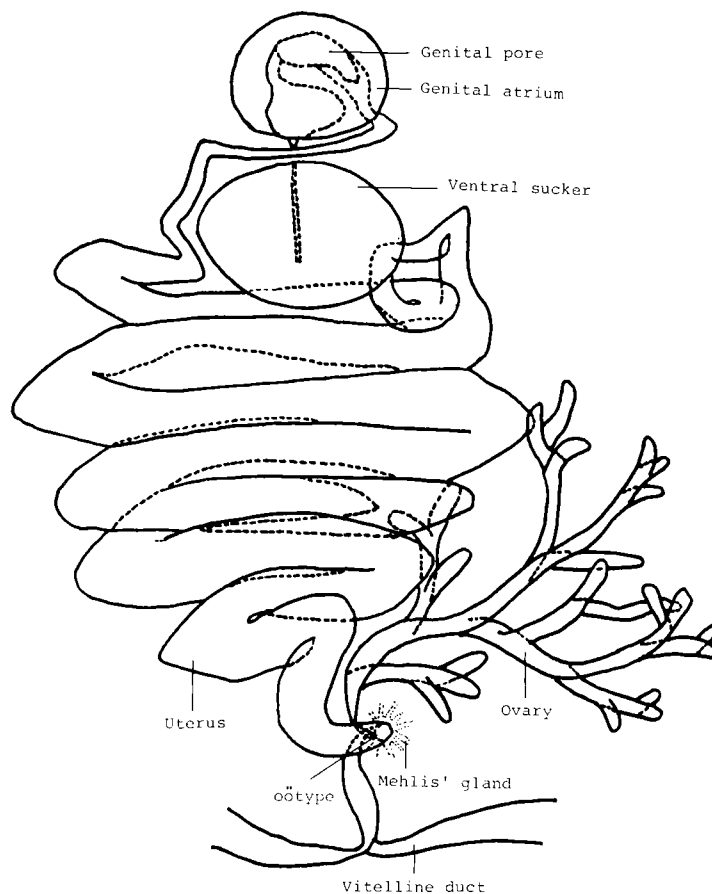


Fig. 2. Male and female genital system are schematically shown.

from anterior to the posterior end. These vitellaria were connected to the vitelline duct and joined the oviduct. They were then continuous to uterus through oötype. The uterus opened at the region of the genital atrium. The uterus was coiled quite intricately between the oötype and genital pore. The eggs were ovoid and operculate and light yellow brown in color (Plate 2).

The male genital system consisted of testes and vasa efferentia. The testis was highly branched. Each testis was connected to the vas efferens which joins the cirrus pouch anterior to the ventral sucker.

Considering the size and shape of fluke together with all the internal structures, this fluke was an adult worm of *Fascoia*.

The length to width ratio is 2:1 in this specimen. The dimensions of the worm could have been reduced from normal as the measurement was done based in paraffin section. The tissue retracted approximately 20-30% after formalin fixation and paraffin embedding. On the base of length-breadth ratio and distal blunt ending this worm was similar with *F. hepatica* than with *F. gigantica* which has to

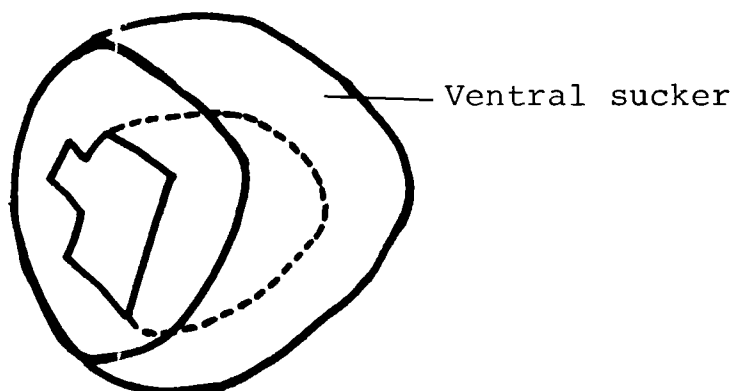
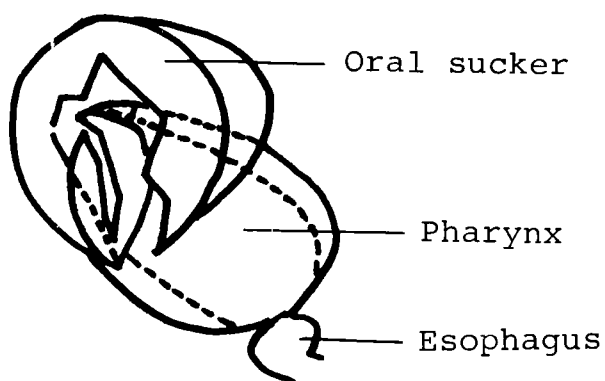


Fig. 3. Three dimensional reconstruction of oral and ventral suckers.

be at least 3:1 and have more elongated distal end. However, definite specification of this fluke is deferred because other measurements are not available.

Clinical presentation of recurrent abdominal colic in this patient appears to be related to fascioliasis. The gallbladder showed chronic inflammation with eosinophils, suggesting parasitic origin of symptoms.

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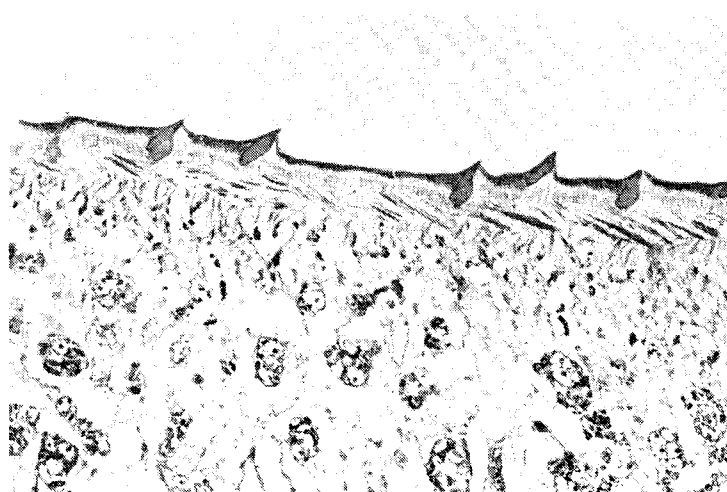


Plate 1. Photomicrograph of tegumental structure of the worm. (H&E, x100).

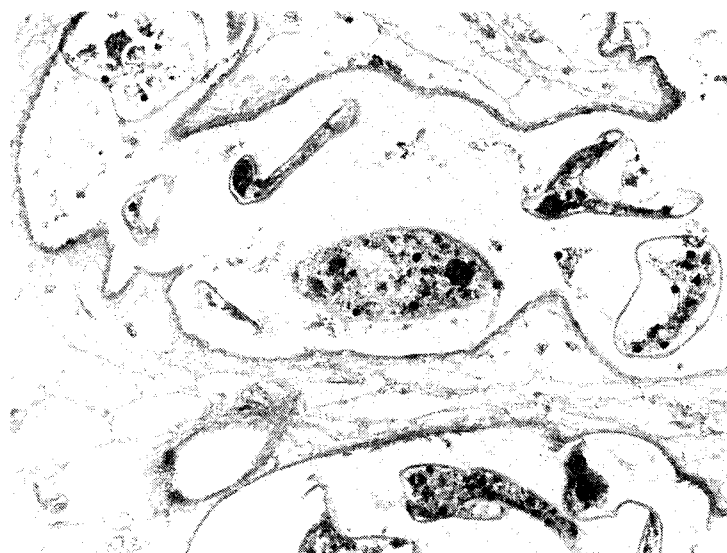


Plate 2. Microscopic picture of the uterus containing several distorted eggs. The egg in the center shows opercular structure. (H&E, x36, H&E, x200).

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=국문초록=

## 인체 간질(*Fasciola* sp.) 기생례

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50세 여자의 담낭절제수술중 담낭내에서 기생충체를 발견하였다. 병리학적검사중 충체 절편을 제작하였고 연속절편을 관찰한 바, 간질(*Fasciola* sp.)의 성충으로 동정할 수 있었다. 이를 한국에서 문헌상 보고되는 6번째 증례로 기술하였다.

본 예는 간질감염에 특별히 노출된 병력을 갖고 있지는 않았다. 그러나 만성 담낭염의 소견은 본 충체와 유관하며 간헐적 복통과도 관계가 있다고 생각되었다.