A case of echinostomiasis with ulcerative lesions in the duodenum

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Abstract: Echinostomiasis is an endemic intestinal trematodiasis of humans in Korea. We observed a human case of Echinostoma hortense infection who had ulcerations on the duodenal mucosa. A 55-year old man living in Hanyang-gun, Kyongnam, complained of epigastric pain with hematemesis in April 1994. Endoscopy revealed lesions of early gastric cancer and duodenal ulcerations. A penetrating parasite into the duodenal mucosa was picked out, and identified as E. hortense. As the patient was treated with praziquantel 10 mg/kg single dose, 3 more E. hortense and 7 Metagonimus worms were recovered. This case demonstrates that echinostomiasis causes gross ulcerations in the duodenum.

Key words: Echinostoma hortense, duodenum, ulcerative lesions, Metagonimus

INTRODUCTION

The intestinal flukes of the family Echinostomatidae are known to distribute in Korea. Echinostoma hortense is dominant (Seo et al., 1983; Ryang et al., 1985; Lee et al., 1986; Hong, 1986; Lee et al., 1988b), but E. cinetorhisis (Seo et al., 1980; Ryang et al., 1986; Lee et al., 1988a) and Echinococmasus japonicus (Seo et al., 1985) are also recorded from humans. Endemic transmission of E. hortense was recovered in Chongsong-gun(Lee et al., 1988b) and Umsong-gun (We, 1987).

Intestinal lesions in experimental rats infected with E. hortense were blunting, fusion or focal loss of the villi, hyperplasia of the crypt, proliferation of goblet cells, infiltration of inflammatory cells in the stroma, capillary congestion, dilatation of lymphatics, and increased fibroblasts. The villous atrophy began one day after infection and progressed worse after then(Le et al., 1990).

The same atrophic changes were also noticed in infections of E. caproni (referred to as E. revolutum by Bindsell and Christensen, 1984; Kim and Fried, 1989; Simonsen et al., 1989) and E. trivolvis (referred to as E. revolutum by Huffman et al., 1986). Huffman et al. (1986) observed that the intestine of hamsters infected by E. trivolvis was markedly dilated and the muscle layer in the submucosa became hypertrophic. They also recorded that infected animals showed weight loss and some of them were with livers that were invaded by the worm and its eggs. The chicks infected with E. caproni showed similar distension of the intestine (Kim and Fried, 1989). It was demonstrated that the fluke pinched the villi with its suckers (Lee et al., 1990). The pinched site protruded like a nipple-like plug with circular dimpling made by rim of the sucker,
but the protrusion rapidly disappeared 1 to 2 minutes after removal of the worms (Simonsen et al., 1989; Gavet and Fried, 1994).

The infected cases with *E. hortense* complained of non-specific gastrointestinal symptoms such as abdominal pain (epigastric and/or lower abdominal), diarrhea, and anorexia (Lee et al., 1986). Eosinophilia is also associated in heavily infected cases (Lee et al., 1988b). When the imported *Echinostoma* gastroenteritis occurred in U.S.A., 19 of 20 group travellers passed echinostome eggs and they complained of flatulence, abdominal discomfort, abdominal cramps, loose or watery stools, postprandial burning and epigastric pain (Poland et al., 1985).

The present paper describes a case of *E. hortense* infection in Korea. The patient is a 55-years-old Korean man, living at Pyonggok-myeon Hamyang-gun, Kyongnam. The patient was admitted to the Department of Internal Medicine, Asan Medical Center, University of Ulsan on 4 April 1994, complaining of epigastric pain and hematemesis. He was healthy until the sudden onset of the symptoms one week before the admission. After then hunger pain and melena progressed, but the symptoms were relieved transiently by medication at a private clinic.

Physical examination at admission revealed normal findings except for mild epigastric tenderness. His past medical history was not contributory. Laboratory data showed a mild degree of anemia (Hb 7.3 g/dl and Hct 21.2%), and others were normal. He had enjoyed eating various raw freshwater fish near the Chirisan (Mt.).

Gastroduodenal fiberscopy recognized an ulceration spot at the posterior highbody wall of the stomach. The lesion was not bleeding. The surrounding mucosa was found conversed and fused. The gastric lesion was diagnosed as stage IIc or III of early gastric cancer. Biopsy was done. In the duodenum, 3 spots of mucosal ulcerations were observed. A living worm was penetrating into one of the ulcers (Fig. 1). Posterior half of its body was moving freely in the lumen. It was picked out with the fiberscope forceps.

Histopathological examination proved the stomach lesion as adenocarcinoma. Total gastrectomy was done. The worm recovered from his duodenum was morphologically identified as *E. hortense* (Figs. 2 & 3). Treatment with 600 mg praziquantel (Distocide®, Shinpoong Pharmaceutical Co., Korea) expelled 3 more *E. hortense* and 7 Miyata type *Metagonimus* (Chai et al., 1993) (Fig. 4).

The present symptoms might have been directly induced by early gastric carcinoma though it is not clear. However, the ulcerative

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![Fig. 1](image_url)  
**Fig. 1.** Fiberendoscopic views of the duodenum wall posterior to the bulb. **A.** A moving worm (arrow) is penetrating into the wall. **B.** The mucosal surface is obviously ulcerated after removal of the worm (arrow). Two nearby ulcers are of same nature.
lesions in the duodenum were evidently made by *E. hortense*. The lesions looked well progressed to induce bleeding and hunger pain. In endoscopy, the anterior half of the fluke was penetrating into the mucosa of the duodenum. Two nearby ulcers were of the same nature (Fig. 1), and seemed to be made by the worm.

This record may be the first description demonstrating ulcerative lesions of the duodenum in echinostomiasis. Together with known pathological lesions, the intestinal ulceration explains the known gastrointestinal symptoms of echinostomiasis very well. The mucosal defect made by the worm may cause luminal bleeding, and be a focus of secondary bacterial infection. Also the ulcer can be a route of the worm or eggs spreading into the submucosa or extraintestinal location. How does it make ulcerative lesions may be the subject of further researches.

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**십이지장 폐양을 동반한 호르텐스극구흡충 감염증례**

서울대학교 의과대학 기생충학실 및 평동병원연구소, 용산대학교 의과대학 내과학학교실

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상북부 종증과 토크유를 주소로 내원한 55세 한국인 남자 환자를 내시경으로 검사한 결과 위와 십이지장의 백에 폐양을 관찰하였다. 위벽의 폐양은 조기암으로 확인되어 위결체 수술을 받 았다. 십이지장의 벽은 유문부 직후의 위벽에 세 개의 폐양이 형성되어 있었고, 그 중 하나에 는 음적이 호르텐스극구흡충이 바르고 들여 있었다. 이 종류를 내시경 절개로 제거하여 표본을 만 들어 관찰한 바 호르텐스극구흡충으로 진단하였다. 환자를 폐쇄판필로 치료한 후에 충전 수질 을 시도하여, 호르텐스극구흡충 3마리와 미야타형 Metagonimus 7마리로 더 입었다. 이 증례를 소장 절막의 폐양을 처음으로 확인한 극구흡충증례로 기록한다.

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