

A 13-year-old boy with chronic diarrhea

History:

A 13-year-old boy has presented with chronic mucous diarrhea for 3 years. The patient denies bloody stools. His bowel movements are approximately 3-4 times a day. The diarrhea is not related to meals. He has been treated with courses of antibiotics without clinical improvement. He lost 9 kg during the past 3 years.

Two months before referral to Ramathibadi Hospital, he was treated for *E. histolytica* infection based on discovery of *E. histolytica* cyst in stools. His clinical slightly improved, but after cessation of medication the diarrhea recurred. At that time, he has had a fever and been treated with cholestyramine. The serum albumin at the primary hospital was 1.8 g/dl.

Additional history:

The patient denies joint pain, abdominal pain, and history of contact tuberculosis. He also denies a history of eating uncooked food.

Physical examination:

A Thai boy, cachexia, BCG scar-negative

Body weight 26.7 kg, height 146 cm

Vital signs: T 36.5 C, PR 86/min, RR 24/min, BP 96/73 mmHg

HEENT: sunken eyeballs, mild pale conjunctiva, no jaundice

Lungs: clear

Heart: regular rhythm, no murmur

Abdomen: soft, mild distention, no hepatosplenomegaly, no mass

Ext: no evidence of arthritis, no rash

PR: anus: no perianal lesion, slightly loose sphincter tone, soft yellow stools

Basic investigations:

CBC : Hb 9.2 g/dl, Hct 27.2%, MCV 59, WBC 9410/cumm, N48, L37, Mono9, Eos4, Baso1, platelet 1,052,000/cumm

Reticulocyte count: 0.4%

Stool examination : WBC 10-15/HPF, RBC 0-1/HPF, AFB and modified AFB - negative, no parasite

Na 128 mEq/L, **K** 3.46 mEq/L, **Cl** 97 mEq/L, **CO₂CP** 14.4 mEq/L

Ca 9.1 mg/dl, **Phosphate** 5.8 mg/dl

ESR : 20 mm/hr

LFT: albumin/globulin 3.4/5.3 g/dl, AP 262 U/L, AST/ALT 93/61 U/L, TB/DB 0.6/0.2 mg/dl

CXR : normal

PPD test : negative

Anti-HIV : negative

Differential diagnosis :

1. Chronic infection e.g. tuberculosis, Giardia lamblia, Capillaria philippinensis
2. Inflammation e.g. inflammatory bowel disease, eosinophilic gastroenteritis
3. Vasculitis e.g. SLE
4. Malabsorption e.g. tropical sprue, lymphangiectasia
5. Unspecified colitis e.g. collagenous colitis, lymphocytic colitis

Imaging study:

Ultrasound abdomen : mild hepatosplenomegaly and dilatation of small bowel

Long GI study : Fold thickening at the jejunum and ileum, no evidence of fistula nor anatomical defect (Figure 1)

Colonoscopy : revealed only colonic mucosal edema without ulcer or mass (Figure 2)

Pathology : demonstrated cryptitis and crypt abscess with granuloma formation, AFB - negative (Figure 3)

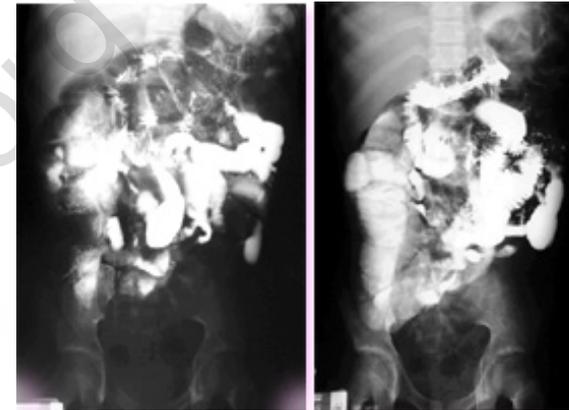


Figure 1: A long-GI study demonstrates fold thickening at the jejunum and ileum.

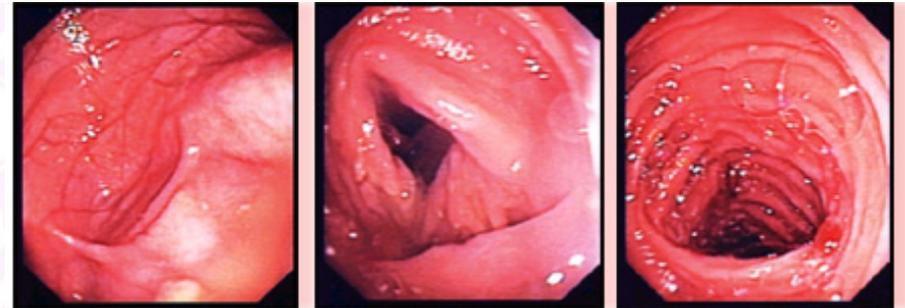


Figure 2: The colonoscopy reveals colonic mucosal edema without ulceration nor mass.

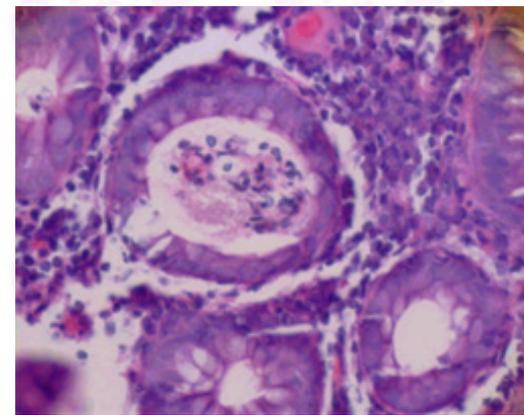


Figure 3: The colonic mucosal biopsy shows inflammatory cell infiltration and crypt abscess

Diagnosis: Inflammatory bowel disease-Crohn's disease

Treatment:

Azathioprine 2 mg/kg/day

Salofalk 30 mg/kg/day

Methylprednisolone 2 mg/kg/day

NG tube feeding and parenteral nutrition

Progression:

Despite specific treatments, the patient still had secretory diarrhea, in which octreotide was tried with some improvement. However, he developed bradycardia, possibly resulting from octreotide side effect. As a result, the medicine was withdrawn. Repeat stool examination revealed *Capillaria*'s eggs. (Figure 4) The patient was then treated with mebendazole with clinical improvement. Azathioprine was discontinued. He has been put on salofalk and low dose prednisolone. Autoimmune disease markers including pANCA, FANA, and antiLKM antibody, were all negative. However, anti smooth muscle antibody was positive with a titer of 1:640.

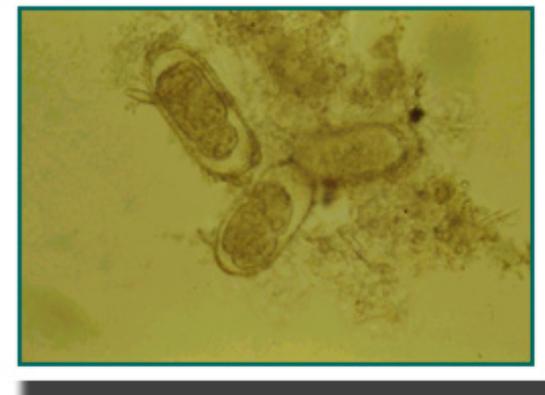


Figure 4. Stool examination reveals *Capillaria philippinensis* eggs.

Inflammatory bowel disease (IBD)

Inflammatory bowel disease is an idiopathic chronic inflammation of the GI tract. It can be divided into 2 spectrum, ulcerative colitis and Crohn's disease. In ulcerative colitis, the mucosal inflammation is homogenous and extending from the rectum to the proximal colon, whereas there is transmural inflammation in the Crohn's disease, in which any part of the GI tract could be involved. Sixty percent of the cases have ileal and colonic involvement. Thirty percent, 10-20%, and 30-40% of the Crohn's patients have limited terminal ileum, colon, and gastroduodenal involvement, respectively. Most of the cases develop gastrointestinal symptoms including bloody stool, chronic diarrhea, nausea/vomiting, abdominal pain and weight loss. Complications could be present in severe cases, such as toxic megacolon, intestinal fistula, and intraabdominal abscess. Compared to the ulcerative colitis, Crohn's disease has more associate systemic symptoms and extragastrointestinal symptoms as shown in Table 1.

The diagnostic investigations are consisted of CBC (anemia and thrombocytopenia), elevated sedimentation rate, colonoscopy and upper endoscopy with pathologic study, long GI study, and immunologic markers e.g. pANCA and ASCA.

Extragastrointestinal manifestations

	Crohn's disease	Ulcerative colitis
Fever	+++	+++
Perianal lesions	+++	+
Growth failure	+++	+
Aphthous ulcer	+++	+
Arthritis	+++	+
Ankylosing spondylitis	++	++
Clubbing finger	+	+
Erythema nodosum	+	+
Pyoderma gangrenosum	+	+
Episcleritis, uveitis	+	+
Amyloidosis	+	+
Thromboembolic disease	+	+
Hepatobiliary disease	+	+

The goals of treatment are to induce remission, maintain remission, minimize side effects of treatment, and improve quality of life. Medications for inflammatory bowel diseases include anti-inflammatory agents (5-ASA compounds, corticosteroids, topical antibiotics), immunomodulators (azathioprine, 6MP, methotrexate), and other medications (infliximab-TNFalpha antibody).