รายงานผู้ป่วย / Case Report
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ลักษณะทางรังสีวิทยาของการติดเชื้อพยาธิ Capillaria ในลำไส้เล็ก: รายงานผู้ป่วยและทบทวนวรรณกรรม

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ภาควิชารังสีวิทยา คณะแพทยศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ

บทคัดย่อ

Intestinal capillariasis เป็นการติดเชื้อจากพยาธิตัวกลมชื่อ Capillaria philippinensis ในลำไส้เล็ก การติดเชื้อนี้พบได้ไม่บ่อยและพบครั้งแรกโดย N.P. Salazar โดยพบผู้ป่วยรายแรกที่โรงพยาบาลในประเทศฟิลิปปินส์ ในปี 2506 การฝังตัวของพยาธิที่เยื่อบุลำไส้ทำให้การดูดซึมอาหารแย่ลง โดยเฉพาะอาหารจำพวกไขมันและน้ำตาล นอกจากนี้การดูดซึมโปรตีนและเกลือแร่ก็ลดลงด้วย ทำให้ผู้ป่วยมีอาการท้องเสียเรื้อรังเป็นๆ หายๆ ปวดท้อง มีเสียงลำไส้เคลื่อนไหวดัง น้ำหนักลด มีการสูญเสียโปรตีนและเกลือแร่ทำให้ร่างกายซูบผอม เมื่อผู้ป่วยมาทำการกลืนแป้งตรวจทางรังสีวิทยาจะพบลักษณะของการดูดซึมของลำไส้ที่ผิดปกติไป เช่น ลำไส้ขยายขนาด พบการตกตะกอนของแป้งในลำไส้ที่ผิดปกติ หรือผนังลำไส้หนาขึ้น ผู้นิพนธ์รายงานผู้ป่วย intestinal capillariasis 1 ราย ที่มีลักษณะทางรังสีวิทยาเข้าได้กับภาวะนี้ พร้อมทั้งการทบทวนวรรณกรรม การพบความผิดปกติทางรังสีวิทยาเหล่านี้อาจเป็นตัวทำให้เรานึกถึงหรือช่วยวินิจฉัยโรค intestinal capillariasis ได้รวดเร็วยิ่งขึ้น

คำสำคัญ: การติดเชื้อพยาธิ Capillaria, การติดเชื้อในลำไส้เล็ก, กลืนแป้งตรวจทางรังสีวิทยา

Radiographic findings of Intestinal Capillariasis: Case report and review literatures

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Abstract

Intestinal capillariasis was infection with Capillaria philippinensis in small intestine. This parasitic infestration is not common and was discovered by N.P. Salazar in a male patient at Philippine General Hospital in 1963. Infestation of the small bowel by this parasite results in severe derangement of intestinal function which included malabsorption of fat and sugar as well as severe protein and electrolyte loss. Clinical symptoms are characterized by chronic diarrhea, abdominal pain, borborygmi, marked weight loss, protein and electrolyte loss and cachexia. All roentgenograms are inspected for the classical signs of the malabsorption syndrome.

During 1994 - 2003, there were 62 reported cases in Thailand. The first case was reported in 1973 by Pratutsoontornsarn A. It was 18-month-old girl, who presented with chronic diarrhea. The diagnosis was made more than 6 months after admission, that took much time for diagnosis. In our case was being presented to radiographic findings, which may be important clue for early diagnosis intestinal capillariasis.

Key words: Capillariasis, intestinal infection, small bowel follow through

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Case report

A 44-year-old man was fist admitted to the Princess Maha chakri Sirindhorn Medical center, Nakhon-Nayok, Thailand in September 2008 with a chief complaint of generalized edema of 1 month duration. Eight months prior to admission, he had anorexia, vomiting, malaise and weight loss. He had abdominal pain, intermittent diarrhea 1-2 times a day and generalized edema for one month.Two weeks prior to admission, the diarrhea became more frequent and sometimes developed steatorrhea. He went to a hospital, where he was confined for 2 weeks. He was given IV fluid and antispasmodic drug, but the symptom was not improved. He was referred to our center for further investigation and treatment. He had the history of eating raw food once a month.

On admission, the patient had good consciousness and normal vital signs. Physical examination showed that abdomen was not tender and no hepatosplenomegaly was found. Pitting edema at extremities was presented. Other physical findings were within normal limits. Laboratory result showed low serum albumin level (1.0 g/dl). Patient was admitted with the provisional diagnosis of malabsorption syndrome, probably due to malabsorption or malignancy. Therefore, upper GI study with small bowel follow through was performed for investigation. The upper GI study with small bowel follow through revealed diffuse mucosal thickening at jejunum (Fig 1). Segmentation of barium in small bowel loop was noted (Fig 2). Radiographic patterns were suggestive of malabsorption syndrome. Etiology could be from parasitic infestration, such as capillariasis or strongyloidiasis or celiac sprue. However, stool exam was negative for parasite.

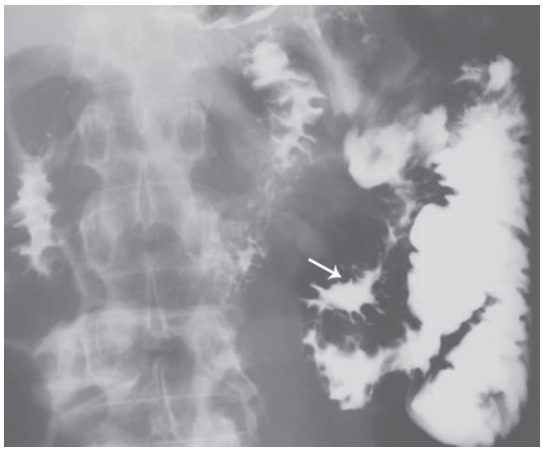
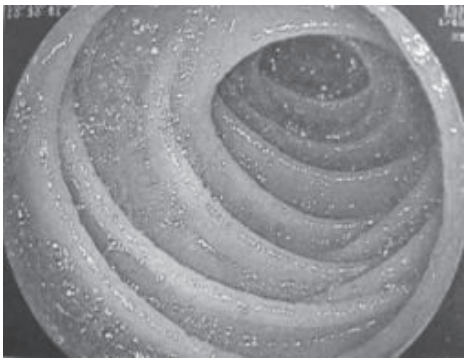
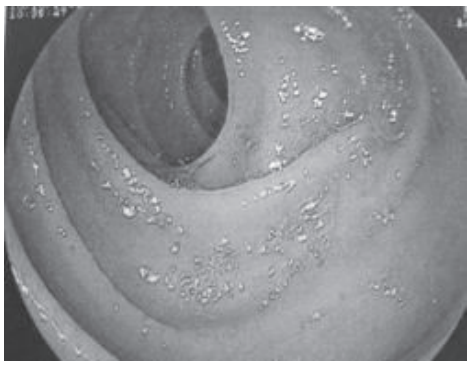


Figure 1. The small bowel follow through revealed thicked mucosal fold at proximal jejunum (white arrow)

Figure 2. The small bowel follow through showed segmentation of barium in small bowel loop at left upper quadrant and mid abdomen.

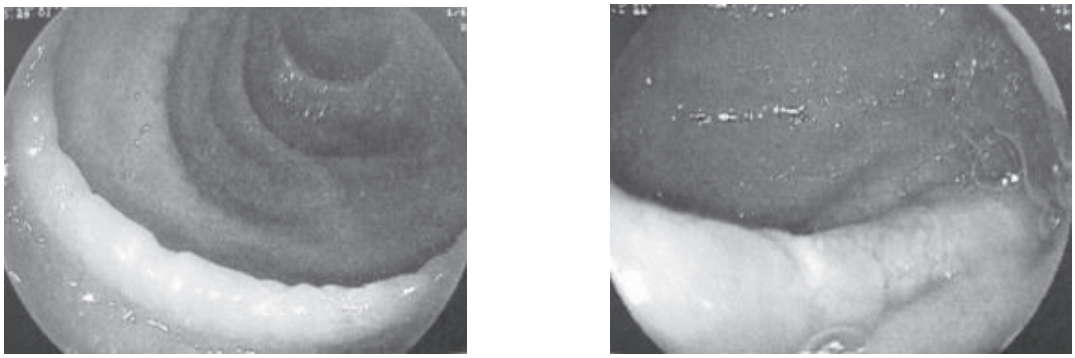
The patient was then underwent enteroscopy. The endoscopic study revealed diffuse flattening of villi and scalloping appearance of proximal jejunum (Fig 3) and mid jejunum (Fig 4a). Multiple shallow ulcers were seen at mid jejunum (Fig 4b).





(a) (b)

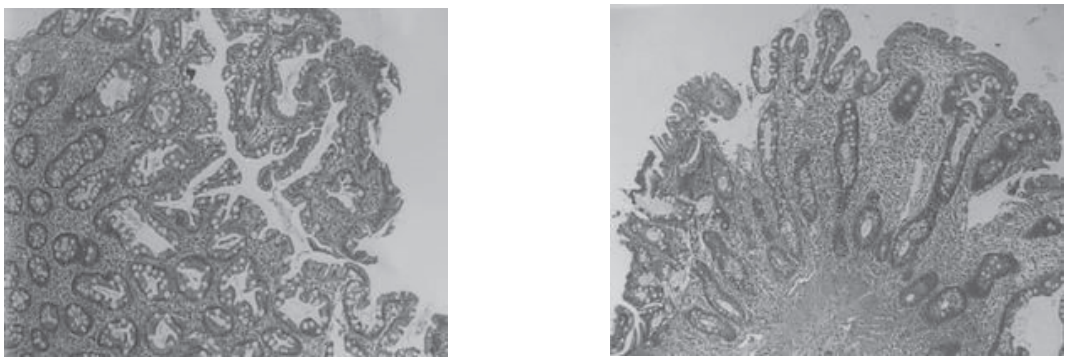
Figure 3. Enteroscopy at proximal jejunum found diffuse flattening of villi and scallop appparance of mucosal pattern.



(a) (b)

Figure 4. Enteroscopy at mid jejunum revealed diffuse flattening of villi and scallop ap pearance (a) with multiple shallow ulcers (b).

The jejunal biopsy showed moderate chronic and acute jejunitis with hyperplastic polyps (Fig. 5a). Pathologic examination of random ileal biopsies showed moderate chronic and acute ileitis with mucosal hyperplasia (Fig. 5b). No organism was found.



(a) (b)

Figure 5. Sections from jejunum(a) and ileum(b) showed hyperplastic change and widening of villi. There was diffuse infiltration of mixed chronic and acute inflammatory cell in the surface epithelium, lamina propria and among hyperplastic crypts. Worm was not detected.

Because the radiographic and enteroscopic findings were suggestive of inflammatory process, serological test for capillariasis was subsequently performed and the positive result was found.

Review Literature and discussion

Intestinal capillariasis caused by Capillaria philippinensis was a relatively uncommon infection discovered in humans. It was first described in 1963[1,2] . The reports of Capillaria philippinensis infection was growing and spreading geographically. Cases had been reported in Southeast Asia, the Middle East, and Southern Europe[3]. In Thailand, the first case was reported in 1973[4] . Humans acquire the infection commonly by the ingestion of raw freshwater fish. Infestation of the small bowel by this parasite results in malabsorption. Marked hypoproteinemia, particularly hypoalbuminemia levels was uniform finding in the patients.

The diagnosis of intestinal capillariasis depended on identifying eggs, larvae, or adult worms in biopsy specimens. In this presented case, the histopathological result from small bowel biopsy revealed only small bowel inflammation and multiple shallow ulcers without identified organism. However, serologic test for capillariasis was positive. Moreover, radiologic findings correlated with malabsorption, which can be found in intestinal capillariasis. Malabsorption and protein-losing enteropathy in Capillariasis are might be related to mucosal penetration and lymphatic obstruction by the parasite[5].

Roentgenograms for the signs of the malabsorption syndrome previously described[6] as follows:

1. Dilatation of small bowel

Normally, the diameter of small bowel mesentery taper gradually from duodenojejunal junction to terminal ileum. Therefore, jejunum usually has larger caliber than ileum. Dilatation of small bowel in small bowel follow through study is defined as luminal diameter larger than 3 cm in jejunum and 2 cm in ileum[7]. The average caliber of the dilated jejunum is 3.4 cm, and that of the dilated ileum is 3.6 cm[6]. In capillariasis, the small bowel dilatation is usually involved a short segment, and marked dilatation is rare.

2. Hypersecretion-related artifact

The findings include segmentation, scattering and flocculation, which are usually founded in malabsorption syndrome. Segmentation is defined as breaking up of normal continual column of barium creating large masses of barium in dilated segments. Scattering is considered as faint stippling of residual barium, resembling snowflakes. This finding is associated with

segmentation due to excessive fluid. The other finding is due to excessive fluid, causing clumping of disintegrated barium, making coarse granular appearance. This appearance called flocculation.

3. Thick valvulae conniventes and nodularity of mucosal fold

Thick mucosal fold is defined as folds larger than 3 mm in thickness in jejunum and 2 mm in ileum on small bowel follow through studies[7]. In capillariasis, the abnormal mucosal fold patterns are mainly in distal jejunum and proximal ileum.

Gerardo and Paulino[8] revealed that all Capillariasis patients in their study had abnormal mucosal fold pattern. The most common abnormality was a uniform thickening of folds. Only few patients were considered to have fold nodularity. They believed that uniform valvular thickening may be related to the hypoalbuminemia, which was commonly present in patients with this disease. They also founded that malabsorption features was most frequently affected mid small bowel, which was thought to be middle jejunum, distal jejunum and proximal ileum. In our case, an image from the upper GI with small bowel follow through study showed mucosal wall thickening at jejunum and segmentation of barium in small bowel loop. The result was correlated with the previous radiographic reports, so malabsorption syndrome from capillariasis was suspected.

Conclusion

Patients with intestinal capillariasis usually present with non-specific symtomps, including chronic diarrhea, abdominal pain, borborygmi, marked weight loss, protein and electrolyte loss and cachexia. Roentgenologic findings of malabsorption pattern may be an important clue for early diagnosis and treatment. The characteristics of malabsorption pattern by Roentgenologic examination include dilatation of small bowel, hypersecretion-related artifact, thicked valvulae conniventes and nodularity of mucosal fold.

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