

CROHN'S DISEASE : DIAGNOSIS AND MANAGEMENT

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ABSTRACT

Crohn's disease is a rare chronic inflammatory bowel diseases. The cause could be genetic factors, infection, immunology and psychological factors. The exact diagnosis is determined by colonoscopy and histopathology examination.

Key words: *Inflammatory bowel disease, Crohn's disease*

INTRODUCTION

Inflammatory bowel disease is a common terminology for chronic inflammatory disease disorder of unknown etiology involving the gastrointestinal tract. This disease is usually characterized by inflammation and ulceration. It sometimes relapses and can manifest as an intestinal complication as well as extraintestinal complication.^{1,2,3} Inflammatory bowel disease is divided into two groups: ulcerative colitis and Crohn's disease.^{4,5}

The purpose of this case presentation is to give an overview on Crohn's disease, since it is a rare case. Sometimes, we do not think about this disease when we face on patient with chronic diarrhea. Because of that, in order to make sure of the diagnosis, we need further examination such as colonoscopy and histopathology, since it could be the cause of death for a patient.

EPIDEMIOLOGY

Crohn's disease occurs more frequently in white people rather than in other color people. The peak occurrence for this disease is between ages 15 – 25 years, but it may occur in ages 55 – 65 years.^{3,7,8} Besides that factor, the incidence and the prevalence of Crohn's disease and ulcerative colitis also involves the geographical area, tribes, smoking habits, but has no significance differences in sex factor.^{3,7}

In Indonesia, there were no publications which reported the rate of incidence and prevalence of crohn's disease. Data from Dr. Cipto Mangunkusomo Hospital showed that from 62 patients with chronic diarrhea, there were 2 patients with Crohn's disease and 1 patient

with ulcerative colitis.⁸

ETIOLOGY

Even though the cause of Crohn's disease and ulcerative colitis remains idiopathic, but there are many factors involved such as genetic factors, infection, immunology and psychological factors. The high number of incidence in monozygote twins children strengthened the hypothesis of a genetic factors. On the other hand, the theory of role of immunological mechanism were based on extra intestinal manifestations i.e. arthritis, cholangitis, and others.^{3,5}

CLINICAL MANIFESTATION

The main symptoms for this disease are diarrhea, abdominal pain, and weight loss. The location of the manifestation were the mouth cavity, tongue, esophagus, gaster, duodenum, jejunum, ileum, colon. If the location is on the rectum, the symptom is small volume diarrhea with tenesmus, and if it is on intestine, the symptom is large volume diarrhea without tenesmus.¹⁻⁵

Visceral pain could happen if the inflammation extends up to serous tissue. Weight loss is also a common clinical sign, usually ranging about 20% from the normal weight. This is due to malabsorption, but for some people, it is also because of a decreased nutritional intake, since weight loss is usually also followed by abdominal pain and anorexia.

Physical examination on patients with Crohn's disease depends on the location and the severity of the disease. The patient looks pale, fatigue, and also malnutri-

Table 1. Clinical signs of Crohn's Disease

Clinical signs	Disease location (%)		
	Ileitis	Ileocolitis	Colitis
Diarrhea	100	100	100
Abdominal pain	65	62	55
Bleeding	22	10	46
Weight loss	12	19	22
Obstruction	35	44	17
Megacolon	0	2	11
Arthritis	4	4	16
Spondylitis	1	2	5

tious, the abdominal wall was not rigid, a mass could be palpated on the right lower abdominal quadrant and in the perianal area we could find an erythema, induration, and fistulae.^{1,3,7}

From the laboratory examination, there is no specific signs from the blood, but we could see anemia caused by chronic disease, bleeding, and deficiencies (iron, folic acid, vitamin B12). Leukocytosis shows that the disease is in an active phase or that there is an abscess or other complication. Thrombocytosis might be found during active phase. The erythrocyte sedimentation rate is higher for Crohn's disease in the colon rather than Crohn's disease in the ileum.^{1,2,3,4,5}

Hypoalbuminemia can manifest in severe cases and also due to malnutrition. Crohn's disease is rarely located in the stomach and duodenum, usually located in ileum and colon. In Crohn's gastroduodenal disease we could find epigastrical pain just like in duodenal ulcer, aphtous ulcer, and linear ulcer, which is located at the antrum of the stomach, that can be seen using endoscopy.^{2,3}

PROGNOSIS

Crohn's disease could relaps or remit. The remission of the disease takes place 30% in the first 4 month, 70% in the first year and 50% in the first two years. For post surgical patient, the recurrence rate is about 70% in the first year and 40 – 50% in the first fourth year and 45% need to be reoperated.

ENDOSCOPY EXAMINATION

Endoscopy plays an important role for making the diagnosis of the inflammatory bowel disease.^{2,3,10} Different from radiology examination, with endoscopy, we could see directly to the exact location on the intestinal mucosa, the changes in the color of the intestinal mucosa, the location of the bleeding and it also consists biopsy. Endoscopy can be done with or without a barium enema radiology examination, because if there are signs of toxic megacolon, severe inflammation, deep ulcer,

peritonitis or perforation, then endoscopy is a contra indication.

Endoscopy is a golden standard examination for diagnosing inflammatory bowel disease. In ulcerative colitis we could find fragile mucosa appearance, an ulcer, diffuse hyperemia followed by rectal bleeding in 95% of all cases.^{2,3,10}

Inflammatory reactions are usually located in intestinal mucosa, unlike ulcerative colitis, where the inflammatory reaction could inflict all the intestinal tissue from the mucous tissue up to the serous tissue, and also involving the lymph tissue. The most common lesion is non-diffused hyperemic mucosa, cobble stoning, aphtoid ulcers, and non-aphtoid ulcers with a variety of size, combined with stenosis, fistulae and pseudo polyp.

The accuracy of endoscopic examination to determine the diagnosis is around 89%. From histopathological examination over Crohn's disease, we can see macrophage and lymphocyte infiltration in the lamina propria or deeper tissues, granuloma besides the ulcer border, or at the normal intestinal mucous. This granulomatous appearance is very helpful for physicians to differentiate Crohn's disease from ulcerative colitis, since granulomatous appearance is very rarely found in ulcerative ulcer, but on the other hand the histopathological appearance of the ulcerative colon shows polymorphonuclear cells and mononuclear infiltration at the lamina propria, abscess in the crypt and mucous in the goblet cell.^{1,2,3,9,10}

DIFFERENTIAL DIAGNOSIS

The differential diagnosis of this disease is ulcerative colitis, appendicitis, amebiasis, salmonellosis, shigellosis, intestine tuberculosis, diverticulitis and intestinal carcinoma.

COMPLICATIONS^{1,3-5}

- Nutritional and metabolic disorder
- Musculoskeletal
- Hepatobiliar disease
- Mucous membrane and skin disorder
- Eye disorder

THERAPY

Malnutrition is an important problem in inflammatory bowel disease especially in Crohn's disease. While the physician tries to make a diagnosis, almost all of the patients with Crohn's disease have lost their weight and suffer from hypoalbuminemia, anemia and vitamin deficiency.

We could find the weight loss due to Crohn's disease in about 70-80% patients and also in 18-20% patients with ulcerative colitis.

Anti diarrheal drugs and medication, should not be given in acute phase, but could be very useful for patients with mild chronically disease. Blood transfusion can be given to the patients with severe anemia.

1. Diet

There are 5 factors that cause malnutrition in Crohn's disease:

- Low food intake, because of the anorexia caused by inflammation, depression or side effects of therapy.
- The increased calorie demand, due to high catabolism, related with inflammation and fever.
- There is electrolyte and protein losses
- The side effect of sulfasalazine therapy can cause a folic acid malabsorption that can cause anemia.
- Corticosteroid also can disturb the absorption of calcium.

Patients are recommended to have a high calorie diet; 2500-3000 calories, and high protein diet 125-150 grams/day. The food should contain sufficient amounts of fiber food.

Try to avoid fatty foods or skim milk, because they could cause anorexia and diarrhea, which makes the evaluation of the response of therapy difficult. If the patient's condition is still weak or there is continuous diarrhea, we must try to let the colon rest and fulfill the needs for fluid, electrolyte and nutrition parenterally.

2. Sulfasalazine

Sulfasalazine is a primary drug, consisting of two active components sulfasalazine and 5-aminosalicylic acid. The drug is broken down into two active components sulfasalazine and 5-aminosalicylic acid by bacteria in the distal part of intestine, caecum, or colon. The initial dose starts with 2 x 500 mg/day and could be increased daily or every two days about 1 gram until the therapeutic dosage is achieved, usually 4-6 grams/day. But most experts do not administer over 4 grams/day. The treatment period is 3 weeks and could even reach 2-3 months. As soon as the clinical signs show progression and remission is achieved, the drug dosage can be decreased up to 2-3 grams/day. The side effect of sulfasalazine are nausea, vomiting, headache, oligospermia, infertility, hepatotoxicity, skin allergic reaction, and malaise.

3. Corticosteroid

Corticosteroid is used as a primary additive drug that could be used to achieve the remission period faster. According to this effect, the experts combine sulfasalazine and corticosteroid especially in moderate to severe cases. They use prednisone as a drug of choice with a dosage of 45-60 mg/day for 36 weeks. Some other experts use prednisone with a dosage of 0.25-0.75 mg/kg body weight/day for 17 weeks. If the clinical signs improve, the prednisone dosage can be decreased, usually to 30 mg/day for 3-4 weeks, then we taper it off. If the clinical response does not show any progression in 10-14 days, we could consider surgical action.

4. Immunomodulator Agents

Azathioprine and Mercaptopurine, as immunomodulator agents, will be given if the treatment with sulfasalazine or sulfasalazine combined with corticosteroid does not achieve a remission. The dosage of azathioprine is 2-2.5 mg/kg body weight/day and mercaptopurine 1-1.5 mg/kg body weight/day.

5. Surgery

Surgery is performed if conservative treatment fails or there is toxic megacolon, perforation, bleeding, carcinoma, abscess, fistulae, or signs of obstruction.

CASE REPORTS

A 27 year old female, who worked in a leather bag manufactory, and classified as a middle up to low class of economical, was hospitalized in Persahabatan hospital with a chief complaint of watery defecation since 8 months prior to hospital admission.

Since 8 months prior to hospital admission, the patient complained of watery stool 2 - 3 times a day, sometimes even more than 3 times. There was no mucous and bloody defecation. The patient also complained of abdominal pain and fever which is only sometimes high but it never reached normal temperature except when she took antipyretic pills. After the effect of the pills disappeared, she had a fever again. Other complaints are about her fatigue, loss of appetite, sometimes nausea and vomiting, always headaches and blurred vision. Last week, she had the same complaints, especially after physical activities. Since the last 6 months she had lost around 12 kg, had no appetite, hair loss, and always had an aphthae. There was no history of prolonged cough or night sweat. She had no complaint about her urination and the color of her urine was normal.

From the past history of illness she has no record of heart disease, rheumatic disease, and diabetes mellitus.

From the familial history of illness there are no members of her family who had an illness like her.

She was moderately ill and fully alert. Her nutritional status was bad (bodyheight 145 cm, bodyweight 28 kg). Her vital signs showed blood pressure 100/60 mmHg, the pulse rate 120 times/minute, respiration rate 30 times/minute, and body temperature 38°C. Her conjunctiva was pale, and her sclera was not icteric. Her JVP was 5-2 cm H₂O. She had an atrophic and hyperemic tongue papilla and no lymphadenopathy. The examination of heart, lung, and abdomen were within normal limits. The extremities were not cold, with slight edema. Digital rectal examination were within normal limits.

From laboratoric examination, we found the hemoglobin level was 5.1 g/dl, the differential blood count showed 68% segmented neutrophil, the leukocyte count was 8100/mm³, hematocrit was 19, the complete urinalysis examination was in normal range, urine urea was 15 mg/dl, creatinin was 0.60 mg/dl.

The chest x-ray examination showed CTR <50% and no signs of lung infiltrate. The ECG was within normal limits. Colonoscopy revealed the mucous surface of the rectum was smooth, not hyperemic; there was an irregular ulcer with pseudopolyp; and nodes covering the lumen of the whole colon continuing up to the proximal with a narrowing of the lumen. The conclusion of this colonoscopy was Crohn's colitis with special differential diagnosis as ulcerative colitis.

The hystopathological specimen consisted of a small plate of colon mucous surface (single columnar layer epithel and lamina propria). The local lamina propria was edematous and there was a spread of mononuclear inflammation and polymorphonuclear inflammation cells. The histological results reflected infective colitis. There were no signs of malignancy. From the stool culture, we got a colony of candida.

The therapy that given to the patient were Sulcolon 3 x 500 mg, micostatin 3 x 1 tablet, and high calorie high protein diet of 2100 Calories.

DISCUSSION

Crohn's disease is an idiopathic inflammatory process of the bowel that could manifest in every part of the lumen from the mouth to the anus, but more frequently manifests in the terminal ileum and ascending colon.

This case describes a Crohn's disease. Its symptoms

varies, depending on its location of the bowel and the severity of the inflammation process.

The most frequent chief complaints are diarrhea, abdominal pain, and weight loss, with other systematic complaints such fever, loss of appetite, and anemia. In this case, patient came to the hospital because of diarrhea.

From physical examination the results depend on the severity of the disease and other complications such as stomatitis. The stomatitis we found in this patient was considered as an extraintestinal complication of the Crohn's disease.

From the laboratoric examination the results showed no specific signs of the disease. The only finding was a result of secondary complication of the disease such as folic acid, iron, vitamin B12 deficiency and hypoalbuminemia caused by malabsorption.

Colonoscopy examination is the appropriate method to establish the diagnosis, since we could see the lesion directly, and it will help us make a decision using hystopathologic examination guided by the results of the endoscopy.

The diagnosis of this case was confirmed by hystopathologic examination.

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