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[Case Study] Crohn's Disease Presenting As Acute Abdomen: A Case Report

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Abstract

An inflammatory condition, Crohn's Disease (CD) can affect any portion of the GI system. TB, ulcerative colitis, irritable bowel syndrome, and other gastrointestinal conditions share many of the signs and symptoms of CD. A third of patients have involvement in the small intestine, especially the terminal ileum, 20% have colon-only involvement, and about half have both colon and small intestine involvement. The most typical CD consequences, such as intestinal obstruction with segmental thickening and fibrosis, may occur in severe cases. Despite the extensive range of diagnostic methods available, including colonoscopy, barium x-rays, CT scans, and ultrasonography, a conclusive diagnosis of CD is still difficult to make, and there is no one "gold standard" sign of the disorder. Crohn's disease should be taken into consideration as a differential diagnosis in those who have an acute abdomen, especially if they have a long history of vague abdominal issues. We discuss a patient with an acute abdomen who was admitted to our hospital and was later found to have an intestinal obstruction. He was managed medically. Histology confirmed that the diseased excised parts as Crohn's Disease after an exploratory laparotomy.

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Introduction

Crohn's Disease (CD) is an inflammatory disorder and may affect any part of the GI tract.[1] The signs and symptoms of CD are similar to those of TB, ulcerative colitis, irritable bowel syndrome, and other gastrointestinal illnesses. It's possible that it'll involve systems other than GIT. The anatomical regions affected and the type of inflammation present determine the clinical appearance of Crohn's disease.[2] Crohn's disease presents with a wide range of symptoms that overlap various disease processes, necessitating a high level of suspicion to make the diagnosis.[3] Although Crohn's disease is a challenging diagnosis to make an initial presentation, quick elucidation of this disease process and morbidity as well as mortality for these patients can be reduced if the method and therapy are followed correctly. We present a case of acute abdomen admitted to our hospital and diagnosed as a case of intestinal obstruction. An exploratory laparotomy was conducted, and histology verified the diseased removed parts as Crohn's Disease.

Case presentation

An 18-year-old male presented with a history of abdominal distention for 2 weeks. It was associated with abdominal pain, dull aching in nature, and non-radiating. He had a history of vomiting which was non-bilious and non-blood mixed. He also developed fever for 10 days on and off, which was associated with chills and headaches.

Physical examination revealed a well-built man with a blood pressure of 110/70 mmHg, heart rate of 84 bpm, respiratory rate of 21 breaths per minute, and a temperature of 98.8 °F. The patient appeared appropriate for his stated age, and is alert and oriented to person, place, and time. The skin was warm and dry; edema was absent. The head, eyes, ears, nose, and throat reveal no abnormalities. Pulmonary and cardiovascular systems showed no abnormalities. The abdomen was observed to be flat and soft with no masses or organomegaly; bowel sounds were present. Diffuse tenderness to palpation was present. Murphy's sign was negative and hernias were absent. Rectal examination revealed no fistulas or fissures. There was a good anal sphincter tone and no palpable masses. There were no abnormalities in the genitourinary system. There were no gross neurological or musculoskeletal deficits.

The entire metabolic profile was found to be unremarkable except for hyponatremia (Na-119 mmol/liter). IV fluid NS was started. Sodium monitoring was done 6 hourly. Complete Blood Count was normal. A tropical panel for fever revealed nothing. Monteux test showed no induration after 72 hours of intradermal injection of tuberculin PPD. The chest radiograph was normal. Multiple lymph nodes were seen on the USG of the abdomen/pelvis, some of which were sub-centimetric in the short axis and involved the mesentery and retroperitoneal area. USG-guided FNAC of inguinal lymph node showed compatibility with reactive lymphadenitis, negative for malignant cells.

Computed tomography of the abdomen and pelvis revealed: mucosal hyperenhancement, bowel wall thickening, engorgement of the vasa recta, and submucosal edema.

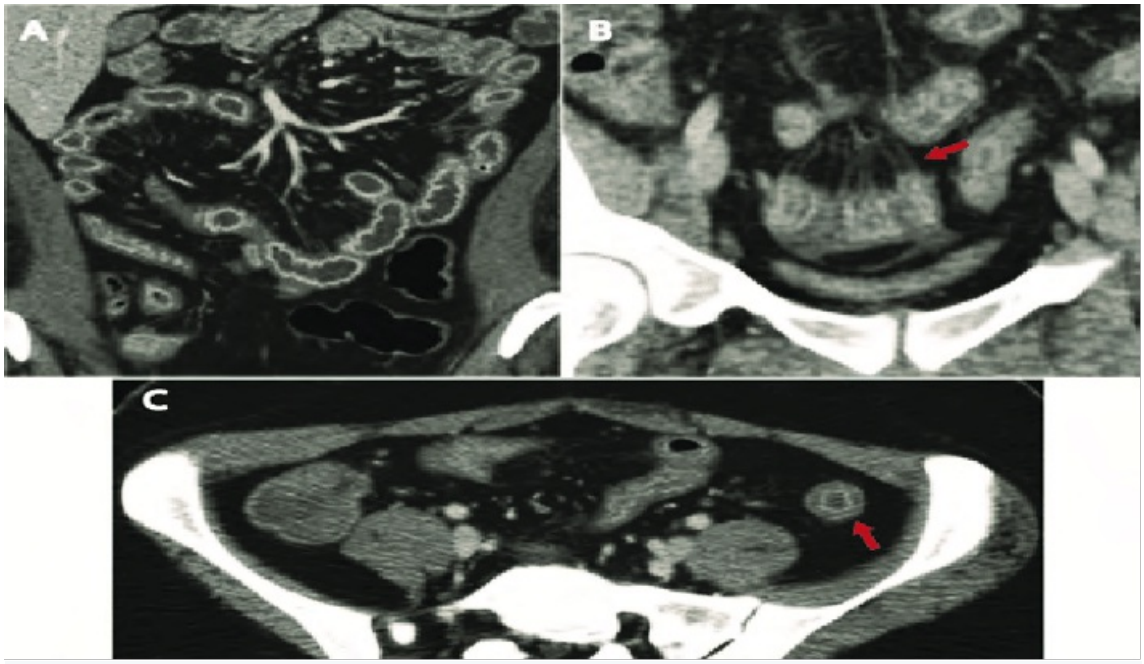

Figure 1. CT findings showing **(A)** Active inflammation causes mucosal hyperenhancement and bowel wall thickening greater than 3mm. **(B)** Engorgement of the vasa recta adjacent to an inflamed loop of bowel is a specific finding in active CD and has been coined the "comb sign." **(C)** Submucosal edema yields a characteristic "target sign."

Stool studies did not detect ova, parasites, Clostridium difficile, and other bacterial pathogens. However, the presumptive diagnosis of Crohn's disease was tentatively assessed based on historical information, physical examination, and diagnostic testing. For a definitive diagnosis, a colonoscopy with lesion biopsy was indicated. A colonoscopy, on the other hand, was considered to be contraindicated during the acute inflammation period and was postponed until later. Therefore, attention was focused on the management of the acute inflammatory stage of the presumptive diagnosis.

The acute gastrointestinal irritation had to go away before a colonoscopy could be used to provide a more conclusive diagnosis. The initial management plan was by keeping the patient nil per oral; intravenous fluid (normal saline) started. Sodium monitoring was done for 6 hours along with a recording of daily inputs and outputs. Salt capsules were added. IV antibiotic meropenem was continued and DVT prophylaxis was started. ICU care, neuromonitoring, and chest physiotherapy were done. Oral antibiotics like Rifaximin, azithromycin and metronidazole were added. Inj. celemin (5%) was added in 500 ml IV slowly over 5 hours every 24 hours due to poor oral nutrition. The patient was managed conservatively with antibiotics, proton pump inhibitors (PPI), steroids, and other supportive medication. After the patient's symptoms had subsided, the IV fluid therapy was switched to oral fluids, and the patient was allowed to resume a normal diet. After acute inflammation subsided, a colonoscopy was performed.

Colonoscopy findings: 1. multiple patchy erythematous erosions and ulcerations 2. Loss of vascular pattern and friable mucosa 3. Circumferential cobblestone appearance. Such findings were present in both small and large intestines.

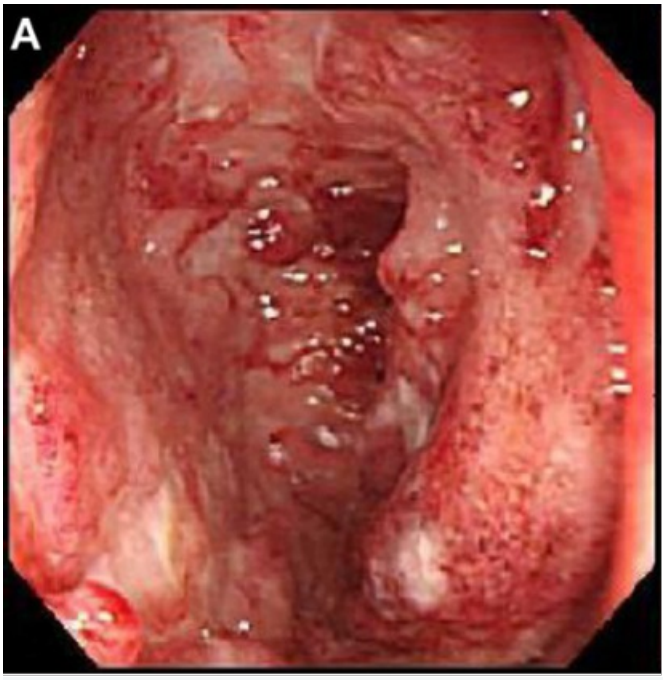

Figure 2. Colonoscopy showing deep ulcers (white areas) and circumferential cobble stone appearance between 50 cm and 55 cm from the anal verge.

Crohn's disease has been established as a diagnosis. The management plan included oral mesalazine and prednisolone. Later surgery was planned after complete resolution of inflammation. An exploratory laparotomy was conducted, and histology verified that the diseased removed parts as Crohn's Disease. Histology revealed trans-mural inflammation and granulomas consistent with Crohn's disease.

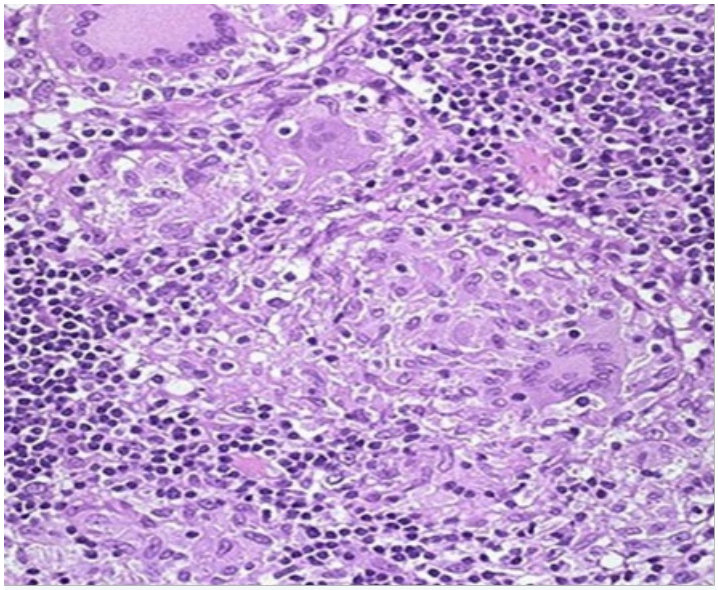

Figure 3. H&E stain showing Granulomatous inflammation with multinucleated giant cells in terminal Ileum.

Discussion

Crohn's disease may cause inflammation of the digestive tract from mouth to anus. However, it most commonly affects the ileum. Roughly one-third of patients have small bowel involvement, particularly the terminal ileum, another 20% have solely colon involvement, and about half have both colon and small intestine involvement.[4] All layers of the intestine may be involved, and normal healthy bowel can be found between sections of the diseased bowel.[5] It affects men and women equally in all age groups with predilection in the second and third decades with familial preponderance in a few cases.[6]

CD usually presents with abdominal pain especially due to the involvement of ileum, blood-stained diarrhea, and anemia. Some may have a low-grade fever, nausea, and vomiting. Fissures or cracks may appear, and anal involvement can lead to fistulas and abscesses.[7] It may also present with extra-intestinal manifestations like skin or mouth lesions, pain in the joints, eye irritation, kidney stones, gallstones, and other diseases of the hepatobiliary system. Affected children may have delayed milestones.[8] Severe cases of CD may have the most common complications like intestinal blockage with thickening and fibrosis of the affected segment. Despite the wide range of diagnostic techniques available, such as ultrasonography, barium x-rays, CT scans, and colonoscopy, a definitive diagnosis of CD remains elusive, and there is no single "gold standard" sign of the condition.[9] Most patients with CD are usually managed by conservative treatments which include adequate rest, a nutritious diet, multivitamins, iron, folic acid, antioxidants, and sulfasalazine. Even when surgery is required to alleviate obstruction, repair a perforation, treat an abscess, or close a fistula, a careful approach to the patient is essential when intervening or continuing with conservative management to avoid life-threatening consequences.[10] The outcome of Cronh's Disease has improved with good medical care. It's a serious condition, yet it's not fatal.

The risks of surgery or accompanying diseases are the causes of death in these patients. Even if these patients are doing well, they should be followed up annually, and any new symptoms should be taken seriously[11].

Conclusion

In individuals presenting with acute abdomen, Crohn's Disease should be considered as a differential diagnosis, especially if they have a lengthy history of vague abdominal problems.

Consent

Written informed consent was obtained from both the patient and his parents for publication of this case report and any accompanying images.

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