CASE REPORT

Crohn's disease with multiple jejunum and ileum lesions: A case report

Dong Zhang, Nan Chen, Jie Yang, Shaoju Guo

Abstract

Crohn's disease (CD) affecting the jejunum and ileum is uncommon and its diagnosis can be challenging. This case report describes a 35 year old male patient who had been experiencing intermittent periumbilical pain, diarrhoea and fever for five years. Despite undergoing gastroscopy, colonoscopy and capsule endoscopy; no significant abnormalities were found. This case was seen at the Shenzhen Hospital of Traditional Chinese Medicine; Shenzhen, China. However, the patient underwent a double-balloon enteroscopy (DBE), which revealed multiple ulcers in the jejunum and ileum, leading to a confirmed diagnosis of CD. The patient was successfully treated with infliximab to relieve symptoms. DBE can be particularly valuable in diagnosing CD in young patients with symptoms when conventional endoscopic techniques have been unsuccessful. This case highlights the importance of considering small bowel disease in patients with CD symptoms and the potential benefits of DBE in diagnosing such cases.

Keywords: Crohn's disease, double balloon enteroscopy, small intestine, jejunum, ileum.

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Introduction

Crohn's disease (CD) is a chronic inflammatory condition affecting the gastrointestinal tract.[1] It is characterised by transmural inflammation and presents with various symptoms including weight loss, diarrhoea, abdominal pain, intestinal obstruction, fistula formation, and systemic manifestations like fever and joint pain.[1] Solely located in the jejunum for only 1% of patients, CD diagnosis relies on patient's age, disease location, and state but can be challenging due to symptomatic similarities with other gastrointestinal conditions which leads to delayed diagnosis and increased morbidity.[2,3] Diagnosing CD requires a combination of endoscopic, radiographic and pathological findings while considering similar presenting diseases.[4] Diagnostic delays may occur without terminal ileum involvement due to the discontinuous nature of CD in the small intestine.[5] As, CD incidence rises; it becomes crucial to address specific issues and challenges in its diagnosis and management. The justification for this case report revolve around the patient's prolonged and complex medical history, the challenge of diagnosing his condition, the presentation of recurrent symptoms, inconclusive initial imaging, and the subsequent advanced diagnostic procedures that ultimately led to the diagnosis of Crohn's disease and successful treatment.

Case Report

A 35 year old male patient, resident of Shenzhen, China presented to the Shenzhen Traditional Chinese Medicine Hospital, Shenzhen, China, on April 27, 2021. He had unexplained recurrent fever, periumbilical abdominal pain, vomiting, and diarrhoea for the past five years. Despite visiting multiple gastroenterology clinics, a clear diagnosis could not be made. The patient experienced several episodes each year, lasting for 3-5 days which subsided after adjusting his diet and self-prescribed bowel rest. While clinically presenting an incomplete intestinal obstruction, the patient's abdominal Computed Tomography (CT) examination did not reveal any such obstruction. Other

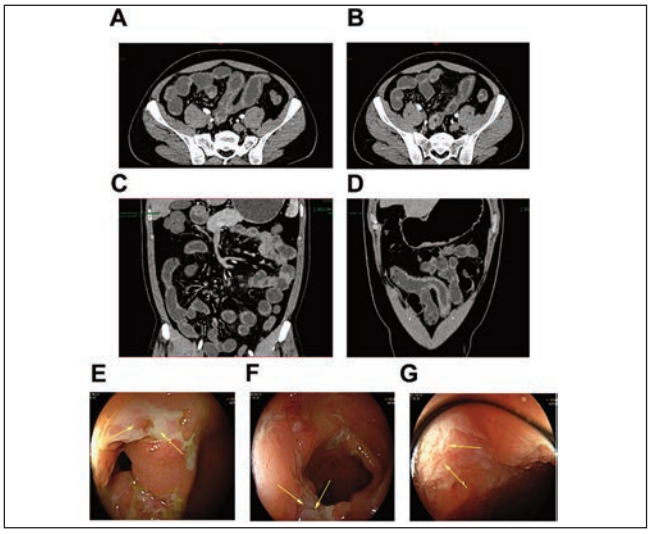

Figure-1: Abdominal enhanced CT scan and Colonoscopy. The abdominal enhanced CT scan revealed thickening of the intestinal wall and stenosis in the middle and end of the ileum and ileocaecum. Enlargement of the mesenteric lymph nodes and thickening of the intestinal wall were observed in the middle of the ileum (A, B, and C). Colonoscopy showed narrowness in the ileocaecal part of the small intestine, with an ulcer covered with white fur, as indicated by the yellow arrow (D, E, and F).

Shenzhen Traditional Chinese Medicine Hospital, Shenzhen, China.
Correspondence: Shaoju Guo. e-mail: gsj1080@163.com
ORCID ID. 0000-0003-4176-5803

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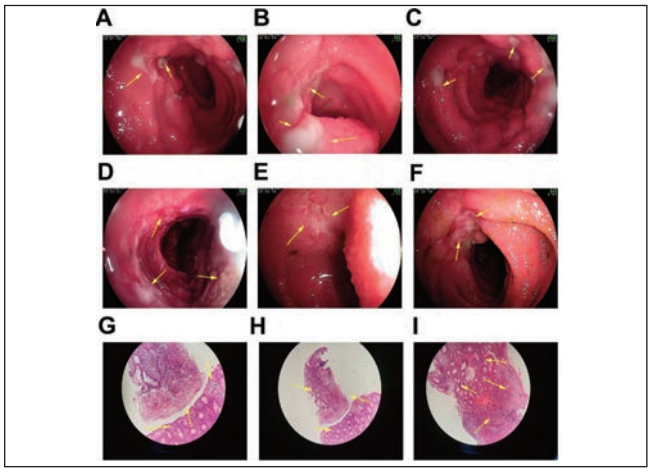

Figure-2: The patient's enteroscopy and pathology. The enteroscopy and pathology tests showed multiple scattered ulcer foci in the jejunum and ileum, with white fur, as indicated by the yellow arrow(A-F). Additionally, chronic active inflammation of the intestinal mucosa, interstitial infiltration of lymphocytes, plasma cells, eosinophils, and neutrophils were observed in the middle and lower segments of the jejunum and ileum, along with local mucosal necrosis with ulceration (G, H, and I). Moreover, there was a focal aggregation of epithelioid cells in the middle and lower segment of the ileum.

examinations including gastroscopy, colonoscopy and capsule endoscopy (CE) performed during the patient's last attack, showed no obvious abnormalities. However, the patient lost 5 kg in the past three months and the laboratory tests indicated active inflammatory disease with elevated white blood cells and C-reactive protein. Further examinations including enhanced CT scans, double-balloon enteroscopy (DBE) and biopsy revealed multiple ulcers, inflammation and necrosis in the small intestine (Figure 1 and Figure 2). The evidence supports the diagnosis of Crohn's disease (CD) which was eventually made for the patient. Infliximab was given by intravenous infusion and after 4 courses of treatment, the medication was switched to ustekinumab with the patient showing amelioration at follow-up. Conducting a six-month follow-up on the patient. During the follow-up period, the patient was assessed monthly to closely monitor the response to treatment and overall health.

Discussion

Crohn's disease (CD) is a chronic inflammatory disorder affecting the digestive tract commonly located in the distal ileum and adjacent colon.[6] The primary treatment goal is achieving long-term remission and preventing complications including surgery. Biomarkers for predicting treatment response are crucial for personalised medical decisions.[7] Diagnosing CD in the small intestine poses challenges due to limited access. Radiological methods like ultrasonography, MRI, balloon enteroscopy and capsule endoscopy are used, along with CT enterography which is being the preferred first-line method, despite of the limitations in sensitivity.[8,9] CD's complex behaviour often leads to recurrence after treatment; making an early diagnosis and treatment essential to prevent complications. A case study illustrates the importance of timely diagnosis, as delayed diagnosis can occur due to a lack of endoscopic evidence.[10] The article highlights the superiority of Double-Balloon Enteroscopy (DBE) over Complete Enteroscopy (CE) in diagnosing and treating small intestine diseases, particularly CD in young patients. The findings emphasize the need for alternative diagnostic methods like DBE and underscore the importance of developing biomarkers for treatment response prediction and exploring new therapies for small intestine CD management.

Conclusion

The case of a 35 year old male patient with confirmed diagnosis of CD was reported which helped in underscoring the diagnostic difficulties of using CE compared to DBE, particularly in young patients with Crohn's disease symptoms who have already undergone colonoscopy and other tests. This study contributes to the literature on diagnosing Crohn's disease in the small intestine with multiple lesions in the jejunum and ileum.

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Conflict of interest: None.

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Author Contribution:

DZ: Design and analysis of the results of this study.
JY: Collecting patient data.
NC: Writing the draft of the manuscript.t
SG: Critical revision, approval of the final version, responsible for all aspects of this study.