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Early Crohn's Disease with Complication: A Case Report in Northern Ghana

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Abstract

Background: Acute intestinal perforation as an early complication of Crohn's disease in Ghana is rare. Crohn's disease with caecal perforation in a 38-year-old male is described in this case report. He presented with right flank pain which eventually extended to the hypogastrium. A diagnosis of ruptured appendix was made clinically. Intra-operatively there was a perforation on the caecum which was walled-off by the terminal ileum. A right hemicolectomy was performed and Crohn's disease of the caecum with perforation was made after histopathological examination of the bowel specimen.

Conclusion: The symptoms of CD may mimic many other abdominal conditions for which urgent medical intervention is required, and clinicians must consider it as a differential diagnosis in patients with acute abdomen. Early and accurate diagnosis with prompt management procedures is required to avoid life-threatening complications. Histopathological examination of tissues removed from patients plays a very important role in confirming the clinical diagnosis.

Keywords: ***Crohn's disease; Caecum; Perforation; Acute abdomen; Tamale; Ghana***

1. Introduction

Crohn's disease (CD), also referred to by others as regional enteritis, granulomatous enterocolitis, and terminal ileitis, is a chronic relapsing and remitting inflammatory disease of unknown cause that is often multifocal and can affect any portion of the gastrointestinal tract (GIT) [1,2], but commonly the large bowel [3]. Susceptibility to the disease is inherited, suggesting a

genetic contributor to its development [4]. Infectious aetiology has been suggested [5]. The first description of the disease was by Dalziel, a Scottish surgeon in 1913 [6].

Published literature of the disease among African subjects is limited [7]. The disease is probably under diagnosed in Africa because of difficulties in distinguishing it clinically from tuberculosis, schistosomiasis and other granulomatous disease of the bowel [7] which are very prevalent in this geographical location. More than three decades ago, Mayberry et al., [8] stated that the incidence and prevalence of Crohn's disease and ulcerative colitis in African population is very difficult to estimate. This is because of the limited access to diagnostic facilities and the lack of histological confirmation for the disease which is a key diagnostic step. As a result of these it will take some time before reliable estimates of the disease is arrived at [8]. This situation still exists today in many countries in Sub-Saharan Africa. A case of Crohn's disease with caecal perforation and peritonitis in a 37-year- old Ghanaian male from the northern region of Ghana is described in this case report. The diagnosis of Crohn's disease was made after histopathological examination of the right hemicolectomy specimen.

2. Case Report

2.1 Clinical history

A 38-year-old male from Tamale in the Northern Region of Ghana presented on the 9/11/2019, to the accident and emergency unit of the Tamale Teaching Hospital (TTH) with constant severe abdominal pain of a day's duration. He has always been in good health and this was the first episode. The pain was initially peri-umbilical in location, but later migrated to the right iliac fossa. The pain was not associated with vomiting and change in bowel habits, and he had no significant past medical history.

On examination, he was afebrile (Temperature =37.1ºC), His other vital signs were essentially within normal limits.

The abdomen was full and moved with respiration. He had right iliac fossa tenderness, guarding and rebound tenderness. Digital rectal examination revealed rectal tenderness. Alvarado score was 5/10 [right iliac fossa tenderness (Score: 2), rebound tenderness (score: 1) and leukocytosis (score: 2)]. A provisional diagnosis of acute appendicitis was made. An abdominal ultrasound did not show any significant findings. He was then managed non-operatively with intravenous antibiotics, analgesics and intravenous infusions.

He had some initial improvement and was then discharged home on oral ciprofloxacin, metronidazole.

However, on the 5th day, post-discharge patient returned with severe right iliac fossa pain, associated with tenderness, guarding and rebound tenderness, with extension to the supra-pubic region. A diagnosis of ruptured appendix was made. A repeat abdominal ultrasound still showed no evidence of appendicitis and complications of appendicitis.

He was optimized for emergency exploratory laparotomy. Intra-operative findings of significance were:

1. Normal appendix
2. Caecal perforation (2 cm × 3 cm) anteriorly, with indurated edges that was walled off by loops of ileum;
3. Greenish exudates on the serosa of the bowel;
4. Right iliac fossa contamination

5. Severe oedematous ileum, caecum and ascending colon.

A Right hemicolectomy was performed. And the resected bowel sent for histopathological examination.

2.2 Pathological examination: S/887/19

2.2.1 Macroscopy

A composite resected bowel specimen consisting of the distal ileum, caecum, ascending and transverse (two-thirds) colon as well as the appendix was received in the laboratory. There were purulent exudates on the serosa of the bowel. The mesenteric lymph nodes were enlarged and palpable. Opening the bowel revealed a thickened and fibrotic wall, prominent dilated submucosa capillaries and tiny minor mucosal ulcerations, no tumour seen. The bowel lumen was severely narrowed. The ileo-caecal valve was greatly thickened. The appendiceal lumen was dilated and filled with faecal material. A total of sixteen (16) lymph nodes were retrieved from the mesenteric and para-colic fat (FIG. 1).

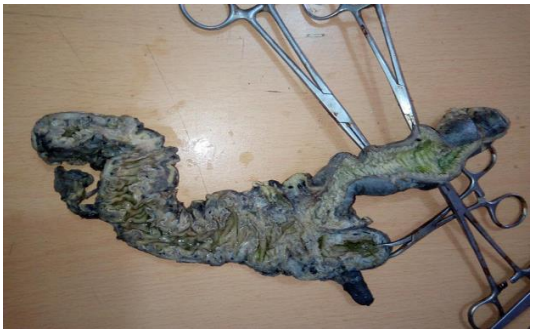

FIG. 1. **Longitudinal Section of the Bowel Specimen Showing Part of the Terminal Ileum, Caecum Appendix, the Ascending and Part of the Transverse Colon with a Fairly Intact Mucosa.**

2.2.2 Microscopy

Sections of representative portions of the bowel specimen showed fissures perpendicular to the mucosa with extension into the muscularis externa and the serosa (perforation), associated with intramuscular abscess formation (FIG. 2a). There multiple mucosa ulcerations, some extending into the submucosa lymphoid follicles (FIG. 2b). The submucosa is hyalinised and also contains dilated lymphatic channels and hyperplastic lymphoid follicles. All the sixteen (16) lymph nodes showed reactive changes. No malignancy seen.

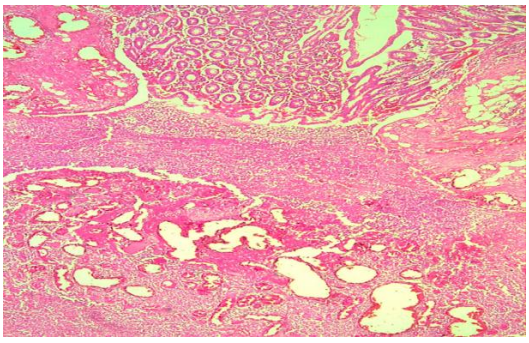

FIG. 2a. **Mucosa Ulceration with Perforation and Extension of the Infiltrates onto the Serosa Surface.**

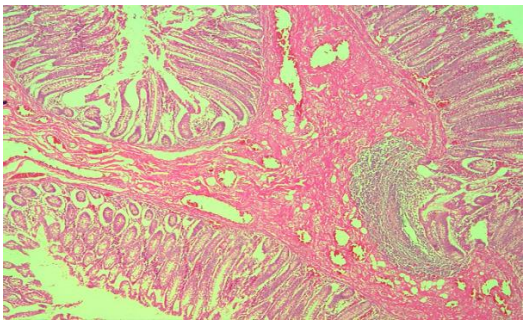

FIG. 2b. **Mucosa Ulceration with Extension of the Inflammatory Infiltrates into a Lymphoid Follicle.**

2.2.3 Histological diagnosis

Colon (Right hemi-colectomy): Acute Crohn's disease with caecal perforation.

The histopathology report was received by the attending clinician and the histopathological diagnosis was accepted as the final diagnosis: Acute Crohn's disease with caecal perforation. He was discharged on post-operative day eight (8) on oral antibiotics and to have daily wound dressing.

The patient was subsequently referred to the internal medicine department for further management.

3. Discussion

There is paucity of published data on Crohn's disease (CD) in Africa due to under reporting [7,9,10]. The rarity of CD in Africa and other developing countries is further hampered by the fact that in these areas, granulomatous gastrointestinal disease such as tuberculosis are prevalent and tend to unnecessarily make clinicians hesitant in making the diagnosis clinically [11-13]. Similarly, published literature on CD in Ghana is scanty, more so within the northern belt of the country where chronic granulomatous gastrointestinal diseases such as tuberculosis and schistosomiasis are common. We report the first of its kind in the northern part of Ghana, CD with early complication and hence very important to clinicians and other health workers.

The patient in this case report is a 38 -year-old Ghanaian male from Tamale in the Northern Region of Ghana who presented with constant severe abdominal pain of a day's duration. The condition did not improve on non-operative management. He subsequently had a right hemicolectomy which was reported by the pathologist as Crohn's disease with caecal perforation.

Crohn's disease (CD), is a chronic relapsing and remitting inflammatory disease, with bowel wall fibrosis, decrease in lumen diameter with associated increased risk of intestinal obstruction and fistula formation as the common complications [9,14]. However, Crohn's disease with early bowel perforation as reported in this case report is not a common complication of the disease.

The age and the clinical picture described in this in-depth case are in line with studies that found the disease to have an early onset in young black males [9,15], but differs from others who described it as a disease with specific age limits [10]. For instance, Deveaux et al., [9] in their study reported that CD occurs in young black males, who commonly present with

inflammatory symptoms. This however differs from Alegbeleye who reported a case of CD in a 70-year male with obstructive symptoms [10]. In the conclusion of their case report, the emphasis was on the point that it is interesting to know that CD, which affects mainly young adults, may debut at any age.

The caecum was involved by CD in this case, similar to published literature that found the disease to commonly involve the large bowel [1-3,13,16]. This however differs from Hanauer et al., [17] who reported that CD commonly involved the ileum.

The patient was initially managed as a case of acute appendicitis based on the clinical features. Further assessment of the patient revealed worsening of the clinical signs and symptom, resulting in a review of the initial diagnosis as ruptured appendix. This however was not supported by the abdominal ultrasound investigation. This could be due to the fact that ultrasound scans in TTH are routinely done by sonographers. Moreover, sensitivity and specificity using ultrasound are operator dependent. The intraoperative findings were initial suggestive of caecal carcinoma. The diagnosis of CD was only reported on histopathological examination. These explain the difficulties in clinical diagnosis of acute GIT pathology in resource limited settings, and hence the possibility of under reporting in areas where histopathological services are not available. Similar diagnostic challenge has been expressed by previous case reports [10,13,18] and hence the importance of histopathological examination of the resected bowel clearly stated.

3.1 What are the lessons to be learned from the clinical presentation of this case report from northern Ghana?

1. Clinicians practicing in Ghana and other developing countries should know that CD was once considered rare in the developing world; its epidemiology is changing, and the incidence of both CD and ulcerative colitis (UC) is increasing in the Asia-Pacific region, India, Eastern Europe, and South Africa [13,18].
2. The clinical presentation of CD in most patients in developing countries may mimic many other granulomatous gastrointestinal conditions for which medical attention is required. Thus clinicians must keep the diagnosis of CD in mind when treating patients with long-standing GIT symptoms.
3. Having an initial suspicion of the disease, and establishing an appropriate treatment will avoid short- and long-term complications, which may be life-threatening. For instance, in this case report, CD was never a differential diagnosis of the patient's condition even though the peri-operative findings did not support the diagnosis of appendiceal pathology.
4. For any organ, tissue or cells aspirated from a patient in our health facilities, histopathological examination and diagnosis plays a very vital role. The histopathological examination of the resected bowel in this case report, was invaluable in making the actual diagnosis of the patient intestinal condition. Histological confirmation of CD is also very necessary because of the emerging evidence that there is an increased risk of adenocarcinoma in patients with CD.

4. Conclusions

The symptoms of CD may mimic many other abdominal conditions for which urgent medical intervention is required, and thus must be considered as a differential diagnosis for any patient with acute abdomen. Early and accurate diagnosis with the

initiation of prompt and appropriate management procedure is required to avoid life-threatening complications. Histopathological examination of tissues removed from patients plays a very important role in confirming the clinical diagnosis.

5. Conflict of Interest

There is no conflict of interest.

6. Consent to Publish this Case Report

We obtained consent from patients and their relatives.

7. Funding

The authors received no funding for the work

8. Author's Contribution

8.1 Study conception and design: Der

8.2 Acquisition of data: Der, Osman, Wondoh, Owusu, Tabiri

8.3 Analysis and interpretation of data: Der, Osman, Wondoh, Owusu, Tabiri

8.4 Drafting of manuscript: Der, Osman, Wondoh, Owusu, Tabiri

8.5 Critical revision: Der, Osman, Wondoh, Owusu, Tabiri

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