RADIOLOGICAL FEATURES OF ULCERATIVE COLITIS IN A NIGERIAN: A CASE REPORT

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ABSTRACT

Background: Ulcerative colitis is an inflammatory disease of the colon with unclear cause. It is common in the Jewish and European population but rare in blacks

Methods: The medical records of the patient who presented with ulcerative colitis and literature review of the case using available journals and pubmed search was employed. The radiological imaging and laboratory results were reviewed

Conclusion: There is need to include radiological imaging and to have high index of suspicion of ulcerative colitis in patients presenting with gastrointestinal signs and symptoms among black populations.

Keywords: Ulcerative colitis, Barium study, Nigeria.

INTRODUCTION

Ulcerative colitis is an idiopathic acute on chronic mural inflammatory/ulcerative disease of the rectum and/or the colon.[1]

Ulcerative colitis has bimodal age distribution.[1] The first age peak is between 15 and 30 years and the second peak is between 30-35 years. [1,2] Men and women are affected equally but in the adult age group, the ratio of women to men is 3:2. The prevalence rate is 35 – 100 cases per 100,000 people but prevalence rate are lower in Africa, Asia and South America.[2]

Ulcerative colitis occurs more frequently in white people and the incidence is reported to be 2-4 times higher in Jewish people.[2] Positive family history in 0.6-10% have been[1,2] reported.

Barium studies is essential in the diagnosis and management of ulcerative colitis

This case is reported because of its rarity in our environment.

CASE REPORT

Mrs. C.U is a 50-year-old Para 5^{+2} woman who presented with complaints of recurrent rectal bleeding, which was associated with recurrent diarrhea, low-grade fever, as well as vague left iliac fossa pain that later became generalized. All these symptoms have been on for four years. She had visited several peripheral hospitals where she was placed on buscopan, haematinics analgesics, and occasionally prednisolone with some relief. There was no associated tenesmus, jaundice, joint paints, or ocular disorder. She was not diabetic, or hypertensive. There was no history of peptic disease. She neither smoked nor consumed alcohol.

Physical examination revealed a middle-aged woman that was febrile to touch and pale. She was not jaundiced and had no peripheral Iymhadenopathy or pedal edema. Examination of the cardiovascular system revealed a pulse rate of 101/min, regular, with good volume. BP = 130/80mmHg. Heart sounds S_1S_2, without murmurs. There was mild to moderate generalized abdominal tenderness, no hepatomegally, splenomegally or masses were palpated. Central nervous and musculoskeletal systems were nil of note. The chest was clinically clear.

Haemogram showed PCV of 29%, WBC Total of 13.0 x 10^3 mm^3 with deferential count of neutrophil 60% lymphocytes 29%, basophils 9% and eosinophils 1%. Urinalysis was normal. Serum electrolyte and urea were within normal limits. Abdominal ultrasound showed normal abdominal viscera; no ascites or intra-abdominal masses were seen. Barium enema was very revealing; showing ahaustration or featurelessness, involving the ascending, transverse,

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Fig. 1 Barium enema showing ahaustration involving the entire colon (featurelessness) with associated rigidity simulating pipe stem (arrows)

and descending colon with rigidity, and foreshortening of the colon (See fig. 1). A diagnosis of ulcerative colitis was made and the patient was placed on steroids, sulfasalazine, and ciprofloxacin. The signs and symptoms subsided moderately while on the treatment protocol. She is currently being followed up.

DISCUSSION

Ulcerative colitis is considered idiopathic. The hypothesis is that there might be an infectious genesis from cytomegalovirus. It may be influence by immunologic, genetic factors – a polygenic (multifactorial) inherited disease, and psychosomatic factors, although the causal role of psychological factor is still undetermined.[1]

Other investigators have reported that autoimmune phenomena are associated with this disease. They noted that serum and mucosal auto antibodies against intestinal epithelial cells may be involved and that people with ulcerative colitis are often found to have p-antineutrophil cytoplasmic antibodies.[2] Immune mediated phenomena have also been implicated, in which abnormalities of humoral and cell mediated immunity and/or generalized enhanced reactivity against intestinal bacterial antigens may be the cause.[3] Genetic susceptibility (chromosomes 12 and 16) is also associated with ulcerative colitis[4] and positive family history is associated with increased risk of developing the disease. There was no positive family history of this disease in our patient.

The annual incidence of ulcerative colitis in the United State of America is 10.4 – 12 cases per 100,000 people.[5] The prevalence rate is 35 – 100 cases per 100,000 people. The disease is rare in Africans.[2] Our patient is an African.

Four types of clinical presentations have been documented, these are:

1. Acute fulminant type seen in 10 – 50% cases
2. Subacute recurrent type seen in 50 to 60% cases.
3. Recurrent type with progression to a chronic course
4. Chronic course with intermitted exacerbation, seen in 10 – 25% of cases.[1]

Our patient has the recurrent type with progression to a chronic course. Symptoms of the disease usually include frequent episodes of rectal bleeding (seen in 90% - 100% of cases) with a characteristic feature of blood in each bowel movement, tenesmus, abdominal cramps, and weight loss in severe cases. Other extra colonic manifestations include synovitis, ankylosing spondylitis, erythema nodosum, iritis, primary sclerosing cholangitis, uric acid renal stones, pyoderma gangrenosum, and rarely, thromboembolic events (central nervous system thrombosis). Our patient complained of abdominal pains and rectal bleeding.

Physical examination usually reveals, fever, tachycardia, dehydration. Our patient was febrile, pale and had abdominal tenderness.

Diagnostic imaging modalities are plain abdominal radiograph, which may show dilated colon in severe cases suggesting toxic megacolon, obstruction, or ileus. Free peritoneal air or air under the diaphragm seen in chest radiograph (erect) suggest perforated bowel.[6,7] Barium enema, especially double contrast studies is the imaging modality of choice. The earliest change is fine mucosal granularity with blurring of the sharp mucosal lines due to edema and hyperaemia; these changes are seen in 90% of cases.[7] As the disease worsens, there will be stippling of the mucosal pattern shown as granular appearance, then ulceration, which correlates with the severity of the disease. As the disease progresses, the ulcers become deeper and may assume the shape of a flask, 'T' or collar button. With chronic or inactive ulcerative colitis, the mucosa appears coarsely granular without ulceration. The entire colon may be foreshortened and appear narrow and straightened with loss of haustration, simulating a 'lead pipe'.[8,9] This 'lead pipe

appearance was demonstrated in our patient. In acute colitis, there may be spread of mild inflammation into the terminal ileum, which will then appear slightly dilated due to incompetent ileocaecal valve. The mucosae sometimes show faint granularity over a considerate length. This phenomenon is called backwash ileitis.[8] This was not demonstrated in our patient. The rectum may also be narrowed with widening of the presacral space. Dedombal *et al*[10] have documented stricture formation in 10% of chronic cases of ulcerative colitis. There was no demonstrable stricture in our patient.

Polypoid changes have been reported at any state of the disease, these are described as pseudopolyp or inflammatory polyp, and they may be linear or branching 'filiform' in appearance.[9] Although classic barium studies remain the principal tool for diagnosis and evaluation of suspected inflammatory bowel disease,[10, 11] computed tomography (CT) could sometimes aid in differentiating Crohns disease from ulcerative colitis, when results of barium studies are equivocal.[10-11] CT has the advantage of allowing visualization of the bowel wall as well as adjacent structures and therefore, plays an important role in detection of complications of inflammatory bowel disease. At CT, the most frequent finding is wall thickening (7.8mm), which may be diffuse, and symmetric.[12] Another CT feature of ulcerative colitis is the halo sign, which is a low attenuation ring in bowel wall due to deposition of submucosal fat .[12] Our patient was not investigated by CT because of lack of funds.

Besides, barium enema demonstrates classical imaging appearance of ulcerative colitis.
Transabdominal bowel sonography cannot diagnose early mucosal disease. It has a spatial resolution that is inferior to barium enema. [13] However, ultrasound can readily diagnose bowel wall thickening. It may also be useful in assessing complications of the disease such as abscesses and fistulae. Gasche *et al* [14] reported that in experienced hands, ultrasound approaches the sensitivity of CT and MRI.

Normal ultrasound study does not exclude pelvic collection or abcesses,[14] in our patient, the abdomino-pelvic ultrasound scan was normal. The role of MRI is similar to that of CT, but with the use of fat suppression techniques combined with sequences that highlight fluid, it demonstrates collections (abscess) better than CT.[13] We did not investigate our patient with CT and/or MRI because barium enema provided adequate diagnostic clues besides cost benefits.

Clinical management may be medical or surgical. Surgery (proctocolectomy) is frequently performed for failed medical therapy and for treatment of complications. Our patient was managed on medication, which consisted of steroids, sulphasalazine, and ciprofloxacin.

Complications of ulcerative colitis may include acute toxic dilatation, stricture formation, and perforation of the gut.[15] Again; this was not seen in our patient.
Malignant transformation has also been documented and the incidence of malignant change is 5-10% in patients who have ulcerative colitis for more than 20 years, as well as in those who have colonic involvement.[15] Our patient is being followed up.

CONCLUSION

A case of ulcerative colitis in a 50-year-old Nigeria female is report. The importance of radiological investigation in clinical management of non- specific abdominal pain is highlighted, vis-a-vis diagnosis of disease that is rare in a given environment.

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