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CASE REPORT: A CASE OF ULCERATIVE COLITIS

General Medicine

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ABSTRACT

Inflammatory bowel disease (IBD) is a chronic idiopathic inflammatory disease of the gastrointestinal tract. Ulcerative colitis and Crohn's disease are the two major types of IBD. It has both environmental and genetic components. IBD develops in those genetically susceptible individuals who mount an abnormal response to environmental triggers. We are reporting a case of young man who presented with fever, vomitings, loose stools and pain abdomen. Based on history and clinical examination we suspected this as a case of inflammatory bowel disease and subjected him for further investigations which were suggestive of ulcerative colitis [UC].

KEYWORDS

INTRODUCTION:

Inflammatory bowel disease (IBD) is a chronic idiopathic inflammatory disease of the gastrointestinal tract. Ulcerative colitis and Crohn's disease are the two major types of IBD. They have emerged as global diseases in 21st century. In newly industrialised countries in Africa, Asia and South America where there is increased urbanization and westernization, the incidence of IBD has been rising steadily and mirrors the prior increase of IBD in western world in the 20th century. The most likely factors that explain the geographic and temporal variability of IBD rates; especially the rising incidence in developing countries and urban areas are environmental variables including changes in the diet (with down streaming effect on intestinal microbiota), exposure to sunlight, temperature differences, socio economic status and hygiene, to name a few. Peak incidence of UC is in the second to fourth decades with 51% of UC studies reporting the highest incidence among those 20 to 29 years old. A second modest rise in incidence occurs between seventh and ninth decades of life. The female to male ratio ranges from 0.51 to 1.58 for UC studies, suggesting that diagnosis is not gender specific. Paediatric IBD (less than 17 years old) composes 20 to 25% of all IBD patients. Epidemiological studies have identified a number of potential environmental factors that are associated with disease risk. Previous appendectomy with confirmed appendicitis particularly at young age has a protective effect on UC. Infectious gastroenteritis (e.g. Salmonella, shigella, campylobacter, Clostridium difficile) increases IBD risk by 2 to 3 fold. Diets high in animal protein, sugars, sweets, and shellfish and dietary fat especially rich in Omega 6 fatty acids have been implicated in increasing the risk of IBD. IBD location and behaviour show racial differences that reflect underlying genetic variations. Pan colonic disease is more common than left sided colitis among black, Latin, and Asians with ulcerative colitis. Older Asian patients with ulcerative colitis tend to have more aggressive course.

Here we are reporting a case of young man who presented with fever, vomiting's, loose stools and pain abdomen without a preceding history of consumption of contaminated food or water which is not uncommon in our area

Case Description

A 17-year-old boy presented with complaints of high-grade fever 3 days ago, continuous, associated with chills and rigours with no diurnal variation for which he went to a local hospital and was admitted, after 5 hours of treatment with IV fluids and antibiotics he developed vomiting's (3 episodes of food particles), non-bilious, non-blood stained associated with nausea. Next day he developed loose stools around 14 episodes per day, greenish in colour, watery to mucoid consistency, non-foul smelling, scanty in amount, more after having food, more during night time, feeling of incomplete evacuation associated with pain abdomen diffuse in nature, squeezing type, non-progressive, non-radiating, aggravated with passage of stools, no relieving factors, with one episode of tarry stools. No history of headache, recent travel, or outside food intake. No history of rash, joint pains, blurring of vision, photophobia. No history of similar complaints in the past and no history of similar complaints in the family. No history of previous abdominal surgery. Not a known case of TB, asthma, epilepsy and diabetes mellitus

VITALS:

Temperature 100.8 F
Pulse 132 bpm, regular, high volume, normal in character, no radio radial delay, no radio femoral delay, all peripheral pulses felt.

BP 90/50 mmHg in both upper limbs in supine position
Respiratory rate: 22cpm, abdomino thoracic type, regular
O2 Saturation: 98% at the room air

Patient is moderately built and moderately nourished (BMI 20) with mild pallor, no icterus, cyanosis, clubbing, lymphadenopathy or oedema. Patient presented with dehydration.

Immediately fluid infusion was initiated, all routine investigations with blood and stool culture and sensitivity was sent (reported negative subsequently). Based on the history and clinical examination and ultrasonography of abdomen, we suspected this as a case of inflammatory bowel disease and further investigations were conducted.

INVESTIGATIONS:

sHEMOGRAM:

DATE	20th march 2023	23rd march 2023
HAEMOGLOBIN	9.2 g/dl	9.6 g/dL
RBC	2.7 million/cumm	2.9 million/cumm

WBC	2,200 cells/cumm	10,900 cells/cumm
PCV/HCT	25.9 %	27.2 %
MCV	94.1 fL	91.4 fL
MCH	33.3 pg	32.1 pg
MCHC	35.4 g/dl	35.1 g/dL
PLATELET COUNT	85,000 cells/cumm	93000 cells/cumm
DIFFERENTIAL COUNT		
Neutrophils	60%	72%
Lymphocytes	31%	23%
Eosinophils	00%	01%
Monocytes	09%	04%
Basophils	00%	00%
BLOOD GROUPING AND Rh TYPING	'B' POSITIVE	

Peripheral smear for abnormal cells: No abnormal cells seen
Procalcitonin: 77 ng/mL [normal: <0.5 = infection is unlikely >10 = severe bacterial sepsis or septic shock]
Plasma Lactate: 14 mg/dL [normal: 4.5 – 19.8 mg/dL]

Complete Urine Examination:

PHYSICAL EXAMINATION	
Volume	18Ml
Color	Yellow
Appearance	Slightly turbid
Reaction(pH)	6.0
Specific gravity	1.025
CHEMICAL EXAMINATION	
Protein	++
Glucose	NIL
MICROSCOPIC EXAMINATION	
Pus cells	3-4/hpf
Epithelial cells	1-2/hpf
RBC cells	1-2
Casts	NIL
Crystals	NIL
Others	NIL

Serum Electrolytes:

Na	137 mEq/l
K	4.1 mEq/L
Cl	102 mEq/L
Ca	1.2 mmol/l

Liver Function Tests:

PARAMETER	RESULT
TOTAL BILIRUBIN	1.4 mg/dL
DIRECT BILIRUBIN	0.4 mg/dL
ALKALINE PHOSPHATASE	58 U/L
ALANINE TRANSAMINASE	27 IU/L
ASPARTATE TRANSAMINASE	81 IU/L
TOTAL PROTEIN	4.9 g/dL
ALBUMIN	3.2 g/dL
GLOBULIN	1.7 g/L

Renal Function Tests:

DATE	20th march 2023	23rd march 2023
BLOOD UREA	109 mg/dL	31 mg/dL
SERUM CREATININE	1.9 mg/dL	0.6 mg/dL

Fecal Calprotectin: 5.5 micrograms/gram [<50 – normal, 50-120 – borderline, >120 -elevated]

Acute Phase Reactants:

ESR	30 mm/hr
CRP	< 5 mg/L

Microbiology:
1. Complete stool examination
Physical examination
Appearance: semisolid
Helminthic worms/segments: absent
Blood: absent
Mucus: absent
Microscopic examination
Trophozoites: nil
Ova and cyst: nil
Helminthic larva: nil
Pus cells: seen
Rbc: nil

2. Specimen: Blood for Malaria antigen detection (Qualitative)- Negative
3. Test: Blood for Dengue NS1 antigen and IgM & IgG antibody – all negative
4. Blood culture and sensitivity: No bacteria isolated in the culture after 48 hours of aerobic incubation
5. Stool culture and sensitivity: Normal flora isolated from the culture after 48 hours of aerobic incubation
6. Clostridium difficile toxin A and B and GDH – Negative

Viral Markers:
Specimen: Blood (Qualitative detection)
HV 1 & 2 antibody: Negative
HCV antibody: Negative
HBsAg: Negative

USG ABDOMEN:
Thickened and oedematous walls of caecum, ascending, transverse and descending colon and sigmoid colon with maximum bowel wall thickness measuring 4.3mm - s/o PAN COLITIS
Moderate splenomegaly (15cm)

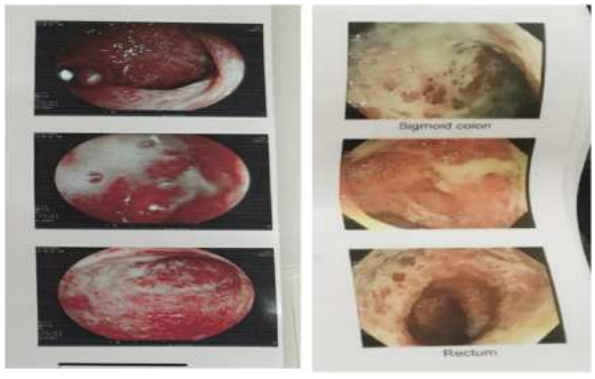
CT ABDOMEN:
Colitis involving entire colon
Mesenteric lymphadenopathy

Lower Gi Endoscopy:
RECTUM: Diffuse ulceration with complete loss of vascularity, bleeding seen on scope touch

SIGMOID COLON: Diffuse ulceration with complete loss of vascularity, bleeding on scope touch

COLONOSCOPE passed up to transverse colon – similar findings seen up to splenic flexure

IMPRESSION: Acute severe Pancolitis – Biopsy was taken



Histopathology Report:
Sections studied showed cryptitis, crypt abscesses, crypt distortion, fusion and lymphoid aggregates. Lamina propria is oedematous with dense infiltration of neutrophils and lymphocytes suggestive of ulcerative colitis. No evidence of granulomas or malignancy

DISCUSSION:
The major symptoms of ulcerative colitis are diarrhoea, rectal bleeding, tenesmus, passage of excess mucus and crampy abdominal pain. The severity of symptoms correlates with the extent of disease, although ulcerative colitis can present acutely, symptoms usually have been present for weeks to months prior to medical consultation. Extent of ulcerative colitis at the time of initial presentation will be 30 % as proctitis, 40 % as distal / left sided colitis and remaining 30 % as extensive /pan colitis.

Our patient presented with **PANCOLITIS.**
MONTREAL CLASSIFICATION OF EXTENT AND SEVERITY OF ULCERATIVE COLITIS
Extent E3 Severity S3

EXTENT	ANATOMY
E1: Ulcerative proctitis	Involvement limited to the rectum
E2: Left-sided UC (distal UC)	Involvement limited to the colorectum distal to the splenic flexure
E3: Extensive UC (pancolitis)	Involvement extends proximal to the splenic flexure
SEVERITY	**DEFINITION**
S0: Clinical remission	Absence of symptoms
S1: Mild disease activity	≤4 stools/d (with or without blood), absence of systemic illness, normal inflammatory markers (ESR)
S2: Moderate disease activity	≥4 stools/d but minimal signs of systemic toxicity
S3: Severe disease activity	≥6 bloody stools/d, pulse ≥90 beats/min, temperature ≥37.5°C, hemoglobin <10.5 g/100 mL, and ESR ≥30 mm/h

Abbreviation: ESR, erythrocyte sedimentation rate.

Source: C Gasche et al: A simple classification of Crohn's disease: Report of the Working Party for the World Congresses of Gastroenterology, Vienna 1998. Inflamm Bowel Dis 6:8, 2000; and J Satsangi et al: The Montreal classification of inflammatory bowel disease: Controversies, consensus, and implications. Gut 55:749, 2006.

TOTAL MAYO SCORE: 8

TABLE 3: **Mayo clinic score for UC.**

		Points
Stool frequency	Patient reporting a normal number of daily stools	0
	1–2 more stools than normal	1
	3–4 more stools than normal	2
	≥5 more stools than normal	3
Rectal bleeding	None	0
	Blood streaks seen with stool less than half of the time	1
	Blood with most stools	2
	Pure blood passed	3
Endoscopic severity	Normal or inactive colitis	0
	Mild friability, erythema, decreased vascularity	1
	Friability, marked erythema, absent vascular pattern, erosions	2
	Ulcerations and spontaneous bleeding	3
Physicians global assessment	Normal Mild colitis Moderate colitis Severe colitis	0 1 2 3

Total score:
- ≤2: Clinical remission
- 3–5: Mild disease
- 6–9: Moderate disease
- ≥10: Severe disease

MODIFIED TRUELOVE AND WITTS CRITERIA CLINICAL CLASSIFICATION OF ULCERATIVE COLITIS: SEVERE

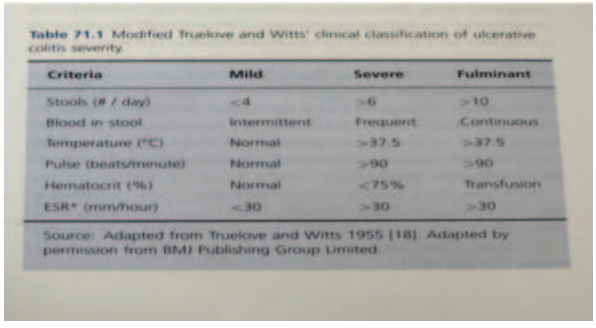


Table 71.1 Modified Truelove and Witts' clinical classification of ulcerative colitis severity

Criteria	Mild	Severe	Fulminant
Stools (# / day)	<4	>6	>10
Blood in stool	Intermittent	Frequent	Continuous
Temperature (°C)	Normal	>37.5	>37.5
Pulse (beats/minute)	Normal	>90	>90
Hematocrit (%)	Normal	<75%	Transfusion
ESR* (mm/hour)	<30	>30	>30

Source: Adapted from Truelove and Witts 1955 [18]. Adapted by permission from BMJ Publishing Group Limited.

FEATURES OF THE PATIENT THAT MATCH ULCERATIVE COLITIS:

Clinical: Loose stools around 14 episodes per day- greenish in colour, scanty in amount, more after having food, and more during night time, feeling of incomplete evacuation, associated with pain abdomen and h/o passage of black tarry stool

ENDOSCOPY: Pancolitis
BIOPSY: cryptitis, crypt abscess, crypt distortion, with lymphoid aggregates. Lamina propria with dense infiltration of neutrophils and lymphocytes suggestive of ulcerative colitis.

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