Case Report ISSN: 2833-0382

International Journal of Family Medicine & Healthcare

Ulcerative Colitis Presenting with Recurrent Alternating Bowel Habits and Rectal Bleeding in a Young Female: A Case Report

Sahr Abdelrahman Elhardalo* and Eman A ABUHZAIMA

Family Medicine Specialist, Primary Healthcare Corporation, Qatar.

***Correspondence:**
Sahr Abdelrahman Elhardalo, Family Medicine Specialist, Primary Healthcare Corporation, Qatar, Phone: 0097455417892.

Received: 24 Apr 2025; **Accepted:** 11 May 2025; **Published:** 22 May 2025

Citation: Sahr Abdelrahman Elhardalo, Eman A ABUHZAIMA. Ulcerative Colitis Presenting with Recurrent Alternating Bowel Habits and Rectal Bleeding in a Young Female: A Case Report. Int J Family Med Healthcare. 2025; 4(2): 1-4.

ABSTRACT

Background: *Ulcerative colitis (UC) is a chronic inflammatory bowel disease that mostly affects the colon and rectum. The condition frequently causes symptoms such as diarrhea, abdominal pain and rectal bleeding. Additionally, the delayed diagnosis is common because UC symptoms often mimic those of other conditions, such as hemorrhoids and IBS. This report underscores the need for timely diagnosis and intervention, based on clinical, endoscopic, and biomarker testing, including the use of fecal calprotectin.*

Case Presentation: *A 24-year-old female presented to her primary care provider with complaints of bowel habit complaints, lower abdominal pain and rectal bleeding. She was initially misdiagnosed as having hemorrhoids and IBS with no systemic conditions suspected. Lab testing showed normal C-reactive protein (CRP <5 mg/L) and normal results on complete blood count (WBC 4.2 × 10⁹/L, hemoglobin 13.2 g/dL, platelets 250 × 10⁹/L, RBC 4.8 × 10¹²/L). Fecal calprotectin levels were notably high at 1035 µg/g; normal < 50 µg/g). A colonoscopy revealed a diagnosis of distal proctitis that was classified as Mayo score 3. The first-line treatment included the use of mesalamine both orally and as a topical agent. Clinical improvement and reduced fecal calprotectin (34 µg/g) were reported during follow-up, reflecting gastrointestinal mucosal healing and a positive response to therapy.*

Conclusion: *The usefulness of fecal calprotectin as a key biomarker in the evaluation of disease progression in UC is highlighted by this case. Appropriate diagnosis along with early mesalamine treatment contributed to symptoms relief and mucosal recovery. Immediate care is important in reducing complications and promoting patient recovery*

Keywords

Ulcerative colitis, Inflammatory bowel disease (IBD), Fecal calprotectin, Mesalamine, Early diagnosis.

Introduction

Ulcerative colitis (UC) is an inflammatory bowel disease (IBD) that is characterized by persistent inflammatory processes of the mucosa within the colon beginning at the rectum and extending proximally [1]. The global incidence of UC in 2023 was estimated to be 5 million cases, with the number of new cases increasing on a global scalen [2]. Most UC cases are diagnosed in young adults where the onset peak is between 15 and 30 years. A second yet smaller peak occurs within the age span of 50-70 years [2]. Both men and women suffer from the disease, but studies show that men over 45 years have an increased risk developing UC [3]. The development of UC is determined by a group of genetic susceptibility, environmental triggers, and dysregulation of the immune system. Bloody diarrhea, abdominal discomfort, and the urgency of defecation are commonly found in UC patients [4].

The severity of UC differs between individuals. The disease can range from mild to severe with remission and relapse. Mayo score is frequently used for the evaluation of severity of the disease, considering clinical symptoms, endoscopic evidence and

physician's assessment [1,4]. About 10-15% of patients have an aggressive course, whereas the majority have mild to moderate course [5]. Extra-intestinal manifestations (EIMs) are frequent in UC patients that affect organs outside the gastrointestinal tract. 25-40% of the patients with IBD have EIMs that may affect the joints, skin, eyes, liver, and kidneys [6]. Skin-related EIMs include erythema nodosum and pyoderma gangrenosum while ocular manifestations involve the uveitis and episcleritis. In the joints, peripheral arthritis are ankylosing spondylitis likely to occur [7].

Initial evaluation tests include a complete blood count (CBC) for anemia or leukocytosis, a serum C-reactive protein (CRP) to see the extent of systemic inflammation and stool test to rule out infections like Clostridioides difcile [8]. Another biomarker that could enable the diagnosis of IBD, including UC, is fecal calprotectin [9]. Most importantly, colonoscopy with biopsy continues to be the gold standard for diagnosing UC. The endoscopic examination shows characteristic mucosal inflammation and a biopsy confirms the histopathological features, including cryptitis and crypt abscesses, that are indicative of UC [10,11]. UC is sometimes associated with a number of other gastrointestinal disorders, such as IBS and hemorrhoids. IBS is a functional disorder of the gastrointestinal tract defined as pain and alteration of bowel habits without underlying inflammation [12], and hemorrhoids are swollen blood vessels in the rectum or anus that may present with rectal bleeding [13]. Misdiagnosis of UC as IBS or hemorrhoids is common, as approximately 10% of IBD patients were misdiagnosed with IBS, 3% of which prolonged for more than five years [14].

For mild to moderate UC, aminosalicylates, such as mesalazine are preferred because of anti-inflammatory properties [15]. For moderate to severe cases, biologic agents are used. These include anti-tumor necrosis factor (TNF) therapies (e.g., infliximab, adalimumab), integrin inhibitors (e.g., vedolizumab), interleukin inhibitors (e.g., ustekinumab), and Janus kinase (JAK) inhibitors (e.g., tofacitinib) [16]. Emerging therapies, including etrasimod, a sphingosine-1-phosphate receptor modulator, have shown promise in clinical trials [17]. Regular monitoring can also help assess treatment efficacy and detect early signs of relapse. Fecal calprotectin levels serve as a non-invasive biomarker for intestinal inflammation, aiding in the differentiation between IBD and irritable bowel syndrome [18]. This case report aims to highlight the importance of early diagnosis and appropriate management in UC.

Case Presentation

A 24-year-old female presented to primary care with a history of chronic abdominal pain ad recurrent alternating bowel habits. The patient reported fresh blood per rectum, and her current symptoms had been associated with hemorrhoids and IBS previously. The patient denied history of oral ulcers, fever, clubbing, rashes, uveitis, jaundice and arthritis etc. She denied having a history of iron deficiency anemia or significant pre-existing medical problems. She was a single university student, had no sexual relationship, did not smoke and did not drink alcohol. She was underweight, with a BMI of 17, but in general her physical health was good. She had no paleness and jaundice. The findings of abdominal examination revealed a soft, non-distended abdomen with no superficial or deep masses, and there was no evidence for chronic liver disease. The patient refused to undergo a rectal examination.

Laboratory results suggested that C-reactive protein (CRP) was within normal values, and at levels below 5 mg/L, indicating minimum systemic inflammation. Complete blood count (CBC) was also normal with white blood cell count=4.2 × 10^9 /L, hemoglobin=13.2 g/dL, platelets=250 × 10^9 /L, and red blood cells count= 4.8× 10^12 /L. However, a stool occult blood test came back positive. Additionally, fecal calprotectin was markedly elevated at 1035 µg/g (normal range: <50 µg/g), which suggested possible inflammation in the gastrointestinal tract. Both celiac screen and Helicobacter pylori testing were negative.

The patient was referred to a gastrointestinal specialist for further evaluation, and a colonoscopy and esophagogastroduodenoscopy (EGD) were performed. The colonoscopy showed distal proctitis, with a Mayo score of 3, indicating moderate disease activity. Rectal biopsy revealed cryptitis, crypt abscesses, and increased lamina propria cellularity with a lymphoplasmacytic infiltrate, all consistent with IBD, most likely ulcerative colitis. Based on these findings, the patient was started on oral and topical aminosalicylates (5-aminosalicylic acid, or mesalamine).

After initiating treatment, the patient showed significant clinical improvement, with a notable reduction in symptoms. Follow-up laboratory tests showed a dramatic decrease in fecal calprotectin levels to 34 µg/g (normal: <50 µg/g), suggesting a reduction in intestinal inflammation. The patient's progress continued, with both clinical and laboratory improvements indicating a positive response to therapy.

Discussion

In the case report, a 24-year-old woman was first diagnosed with hemorrhoids and IBS, but later on, a correct diagnosis of UC was made. All combined, high fecal calprotectin, cryptitis, crypt abscesses, and increased lamina propria cellularity significantly contributed to diagnosis. Aminosalicylate therapy resulted in relief of the symptoms and confirmed the diagnosis of UC [15].

Fecal calprotectin is a non-invasive marker of intestinal neutrophil activity and helps in distinguishing between inflammatory and functional bowel diseases [9]. Increased concentrations of fecal calprotectin are associated with active inflammation in UC. The high fecal calprotectin value, 1035 µg/g, pointed strongly to active UC in the case. Scientific bases approve that FC greater than 250 µg/g indicate active disease and higher FC levels are usually associated with higher severity [19]. This finding is also in line with previous research reporting associations between increased FC and endoscopic measures of infection in UC patients [20]. At the start of treatment, the FC levels of the patients were 34 µg/g. These findings highlight the necessity to improve clinical

protocols in order to integrate FC measurements for assessment of disease severity [21]. Also, fecal calprotectin levels may help detect mucosal healing, which emphasizes its importance as a tool for assessing the treatment response [22]. Ye et al. conducted the meta-analysis reporting that UC patients achieved histological remission having fecal calprotectin levels less than than 100 mc/g [23].

Abdominal pain, diarrhoea and rectal bleeding are the most common symptoms observed in patients with UC. The initial misdiagnosis of UC demonstrates the difficulties in differentiating it from gastrointestinal disorders such as IBS, which share the same symptomatology without an inflammatory element. Studies show the importance of FC testing to distinguish between IBD and IBS as increased FC values indicate inflammatory state [24].

Mayo score is one of the most common tests to assess the activity of UC. The Mayo score comprises four components: stool frequency, rectal bleeding, endoscopic findings and overall physician's assessment (all are scored from 0 to 3 with their synthetic score ranging from 0 to 12). A high score indicates an increased disease activity [25]. In their study involving a cohort of 2,608 UC patients, Naegeli et al. demonstrated the efficacy of the full and partial Mayo Scores as alternatives to endoscopy and physician's global assessment, determining them to be practical surrogates for analyzing the degree of disease activity in patients and clinical studies [26]. Apart from the full Mayo Score, the Mayo Endoscopic Subscore (MES) to predict long-term outcomes in UC has also been employed. A study by Xu et al. of 280 UC patients showed that increase in MES is associated with increased risk of malignant transformation thus highlighting the prognostic importance of endoscopic evaluation in UC [27].

In our case presented, patient was initiated on a combination of oral and rectal aminosalicylates as the first line therapy in the management of UC. This approach is based on clinical guidelines that advocate the use of 5-aminosalicylic acid (5-ASA) preparations in mild-moderate UC, particularly if the disease is limited to the distal colon [28]. The return to normal bowel routine verifies the expected outcome of administering therapy with 5-ASA preparations. A similar case presented a 16-year-old girl diagnosed to have ulcerative colitis presented initially with bloody diarrhea and abdominal pain, which were later confirmed by colonoscopy and biopsy. The utility of Mesalamine therapy resulted in remission, which underlined the effectiveness of 5-ASA therapies in the treatment of pediatric ulcerative colitis [28]. A case report of a seven-year-old Nigerian girl with UC who presented with bloody diarrhea and weight loss emphasizes the need for prompt intervention to protect against growth retardation and malnutrition [29]. Another case study described a 29-year-old patient with ulcerative colitis with the presenting features of diffuse vascular loss and superficial ulceration throughout her colon. Histopathological test results indicated chronic inflammation with cryptitis, crypt abscesses, and crypt architectural distortion [30]. This example demonstrates the variability in the manifestation of UC, emphasizing the need for a detailed diagnostic approach, the endoscopic and histopathological evaluations, to confirm UC. In another case presented by Scheller et al., a 23-year-old female with UC was successfully treated on the 5-Rs gut restoration program, encompassing removing, replacing, re-inoculating, repairing, and rebalancing. Nevertheless, after over six weeks without the use of the mesalamine suppositories, the patient became asymptomatic, which indicates that dietary and lifestyle changes can supplement pharmacological approaches in the management of UC [31].

Timely and proactive UC management can improve the outcomes of patients significantly. Delayed diagnosis and treatment are indicative of higher risk of disease progression, complications, and of a lower quality of life [20]. As seen in this case, timely initiation of proper therapy is capable of clinical improvement and mucosal healing, as shown by reduction in fecal calprotectin levels [16,32].

Conclusion

The case highlights the importance of early diagnosis and individualized approaches in UC management. From the patient's initial symptoms of abdominal pain, alternating bowel movement, rectal bleeding, and elevated fecal calprotectin, a timely diagnosis of UC was established. The efficacy of aminosalicylate therapy in mild to moderate UC is reflected in the improvement of bowel habits and a decrease of fecal calprotectin levels. The case demonstrates that fecal calprotectin is a pivotal non-invasive biomarker for assessing disease activity and determining the effectiveness of various treatments.

Further studies should be directed towards improving biomarkers such as fecal calprotectin for diagnosing disease earlier and the development of new treatments that target specific inflammatory mechanisms in UC. Long-term studies are necessary to determine whether early mucosal healing can actually have reduced risk of colorectal cancer and unnecessary surgery.

References

1. Le Berre C, Honap S, Peyrin Biroulet L. Ulcerative colitis. The Lancet. 2023; 402: 571-584.
2. Gajendran M, Loganathan P, Jimenez G, et al. A comprehensive review and update on ulcerative colitis. Dis Mon. 2019; 65: 100851.
3. Gros B, Kaplan GG. Ulcerative Colitis in Adults: A Review. JAMA. 2023; 330: 951-965.
4. Segal JP, Le Blanc JF, Hart AL. Ulcerative colitis: an update. Clin Med. 2021; 21: 135-139.
5. Fumery M, Singh S, Dulai PS, et al. Natural history of adult ulcerative colitis in population-based cohorts: a systematic review. Clin Gastroenterol Hepatol. 2018; 16: 343-356.
6. Al Quorain AA. Extraintestinal manifestations of inflammatory bowel disease. Med. 2019; 65.
7. Rogler G, Singh A, Kavanaugh A, et al. Extraintestinal manifestations of inflammatory bowel disease: current concepts, treatment, and implications for disease management. Gastroenterology. 2021; 161: 1118-1132.

8. Wenzel A, Gold BD, Strople J. Laboratory evaluation of inflammatory bowel disease. Pediatric Inflammatory Bowel Disease. 2023; 229-244.
9. Wang W, Cao W, Zhang S, et al. The Role of Calprotectin in the Diagnosis and Treatment of Inflammatory Bowel Disease. Int J Mol Sci. 2025; 26: 1996.
10. Limdi JK, Farraye FA. An update on surveillance in ulcerative colitis. Curr Gastroenterol Rep. 2018; 20: 1-12.
11. Malik A, Nadeem M, Javaid S, et al. Estimating the optimum number of colon biopsies for diagnosing microscopic colitis: a systematic review. Eur J Gastroenterol Hepatol. 2022; 34: 733-738.
12. Ng QX, Soh AYS, Loke W, et al. The role of inflammation in irritable bowel syndrome (IBS). J Inflamm Res. 2018; 11: 345-349.
13. Nallajerla S, Ganta S. A comprehensive review on hemorrhoids a recto anal disorder. Pharmacology online. 2021; 1: 270-282.
14. Card TR, Siffledeen J, Fleming KM. Are IBD patients more likely to have a prior diagnosis of irritable bowel syndrome? Report of a case-control study in the General Practice Research Database. United European gastroenterology J. 2014; 2: 505-512.
15. Nakashima J, Patel P, Preuss CV. Mesalamine (USAN). Stat Pearls Publishing. 2024.
16. D'Amico F, Parigi TL, Bonovas S, et al. Long-term safety of approved biologics for ulcerative colitis. Expert Opin Drug Saf. 2020; 19: 807-816.
17. Choi D, Becker M, Ivanov M, et al. Etrasimod: A Sphingosine-1-Phosphate Receptor Modulator for the Treatment of Ulcerative Colitis. Ann Pharmacother. 2024; 58: 1054-1063.
18. Sarhan RSR, Marei YM, Marei YM. Evaluation of the diagnostic performance of estimated fecal calprotectin and serum intelectin-1 and C-reactive protein solo or in combination for differentiation between patients with query ulcerative colitis and irritable bowel syndrome. The Egyptian Journal of Internal Medicine. 2023; 35: 79.
19. Kristensen V, Røseth A, Ahmad T, et al. Fecal calprotectin: a reliable predictor of mucosal healing after treatment for active ulcerative colitis. Gastroenterol Res Pract. 2017; 2017: 2098293.
20. Zamani H, Barzin G, Yousefinia M, et al. Diagnostic value of fecal calprotectin in patient with ulcerative colitis. Middle East J Dig Dis. 2013; 5: 76-80.
21. Chen F, Hu Y, Fan YH, et al. Clinical value of fecal calprotectin in predicting mucosal healing in patients with ulcerative colitis. Front Med. 2021; 8: 679264.
22. Steinsbø Ø, Aasprong OG, Aabakken L, et al. Fecal Calprotectin Correlates With Disease Extent but Remains a Reliable Marker of Mucosal Healing in Ulcerative Colitis. Am J Gastroenterol. 2025.
23. Ye X, Wang Y, Wang HHX, et al. Can fecal calprotectin accurately identify histological activity of ulcerative colitis? A meta-analysis. Therap Adv Gastroenterol. 2021; 14: 1756284821994741.
24. Güven B, İssi F, Sağ E, et al. Impact of Fecal Calprotectin Measurement for Inflammatory Bowel Disease in Children with Alarm Symptoms. JPR. 2022; 9: 126-131.
25. Kawakatsu S, Zhu R, Zhang W, et al. A longitudinal model for the Mayo Clinical Score and its sub-components in patients with ulcerative colitis. J Pharmacokinet Pharmacodyn. 2022; 49: 179-190.
26. Naegeli AN, Hunter T, Dong Y, et al. Full, partial, and modified permutations of the Mayo score: characterizing clinical and patient-reported outcomes in ulcerative colitis patients. Crohn Colitis 360. 2021; 3: 007.
27. Xu W, Liu F, Tang W, et al. The Mayo endoscopic score is a novel predictive indicator for malignant transformation in ulcerative colitis: a long-term follow-up multicenter study. Front surg. 2022; 9: 832219.
28. Salma MD, Siva Y, Narendra JB. Case Report on Ulcerative Colitis in 16-year girl. World Journal of Current Medical and Pharmaceutical Research. 2020; 287-290.
29. Senbanjo IO, Oshikoya KA, Onyekwere CA, et al. Ulcerative colitis in a Nigerian girl: A case report. BMC Research Notes. 2012; 5: 1-4.
30. Vuyyuru SK, Jairath V, Hanžel J, et al. Case Report: Medical Management of Acute Severe Ulcerative Colitis. Gastroenterol Hepatol. 2023; 19: 621.
31. Scheller B, Winter C, Zamyad J, et al. The Successful Management of Ulcerative Colitis with A Nutritional Intervention: A Case Report. Integr Med J. 2019; 18: 40.
32. D'Amico F, Fiorino G, Solitano V, et al. Ulcerative colitis: Impact of early disease clearance on long-term outcomes-A multicenter cohort study. United European gastroenterology J. 2022; 10: 775-782.