DOI: 10.7860/JCDR/2026/84197.22389

Case Report

Radiology Section

Uncovering Ulcerative Colitis with Bilateral Sacroiliitis in a Patient of Chronic Back Pain: A Case Report

KUPPAM RITHYA[1], CHANDRASHEKAR PATIL[2], GIRIDHAR REDDY[3], MANGALAGIRI NIKITHA[4], B BHARATH KUMAR[5]

ABSTRACT

Ulcerative Colitis (UC) is the most common type of Inflammatory Bowel Disease (IBD), characterised by persistent and progressive inflammation. Unlike Crohn's Disease (CD), which affects the entire thickness of the intestinal wall, UC is limited to the mucosal and submucosal layers of the colon and rectum. The condition typically begins in the rectum and may gradually extend proximally to involve other segments of the colon. Sacroiliitis refers to inflammation of the sacroiliac joints at the base of the spine and often presents with lower back and buttock pain. It is more common in individuals with ulcerative colitis due to shared immune-mediated inflammatory pathways. Hereby, the authors present a case of a 35-year-old male who arrived at hospital with complaints of back pain radiating to the left lower limb for the past 5-6 days, along with 5-6 episodes of loose stools over the preceding 10 days. Magnetic Resonance Imaging (MRI) of the lumbar spine revealed diffuse bowel wall thickening as an incidental finding. Subsequently, a contrast-enhanced MRI of the abdomen was performed, which demonstrated features suggestive of ulcerative colitis with bilateral sacroiliitis. Radiologists play a crucial role in identifying early or subtle manifestations of disease, particularly in asymptomatic or occult cases, thereby facilitating timely clinical suspicion.

Keywords: Ankylosing spondylitis, Colonoscopy, Cytokines, Inflammatory bowel disease

CASE REPORT

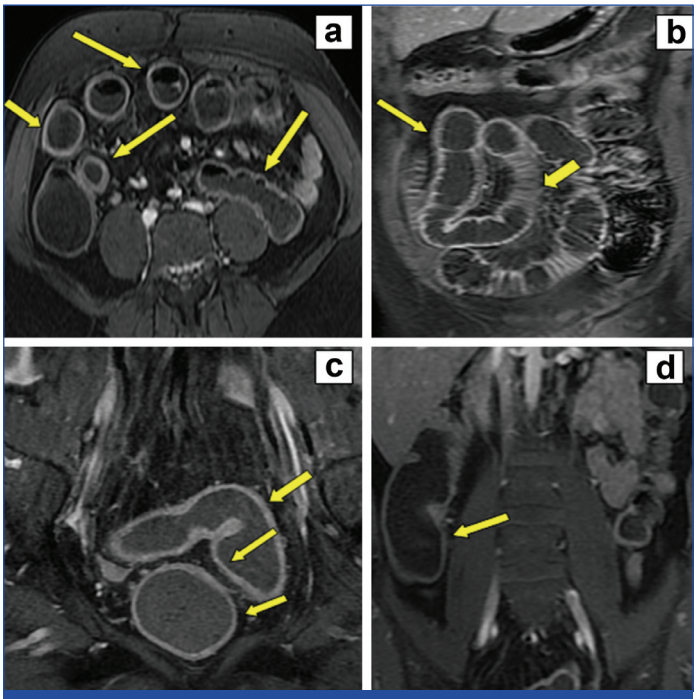
A 35-year-old male patient presented to the Orthopaedic Department with a history of low back pain radiating to the left lower limb. He reported experiencing lower back pain for the past 5-6 days and 5-6 episodes of loose stools over the past 10 days. There were no identifiable aggravating or relieving factors. On physical examination, mild tenderness was noted in the bilateral lower back regions, and no other systemic abnormalities were detected. The patient had no significant medical, surgical, or family history.

Patient was advised to undergo an MRI of the lumbar spine to determine the underlying cause of his symptoms. MRI of the lumbar spine revealed diffuse bowel wall thickening as an incidental finding, along with bilateral symmetrical sacroiliitis. Laboratory investigations showed an elevated total leukocyte count of 16,000 cells/cm^3, an Erthrocyte Sedimentation Rate (ESR) of 60 mm/h, and a C-reactive Protein (CRP) level of 46 mg/L.

The patient was then advised to undergo a contrast-enhanced MRI of the abdomen, which revealed diffuse bowel wall thickening with moderate post-contrast enhancement and diffusion restriction involving the rectum, rectosigmoid junction, colonic loops, ileum, and jejunal loops, along with bilateral symmetrical sacroiliitis involving the posterior inferior aspects of the sacroiliac joints. Based on these imaging findings, a diagnosis of ulcerative colitis with bilateral sacroiliitis was made [Table/Fig-1a-d,2a-c].

The patient subsequently underwent colonoscopy, which revealed inflammatory changes with multiple subcentimetric ulcers in the rectum, sigmoid colon, descending colon, splenic flexure, and transverse colon. The scope could not be advanced beyond the transverse colon due to pain [Table/Fig-3a].

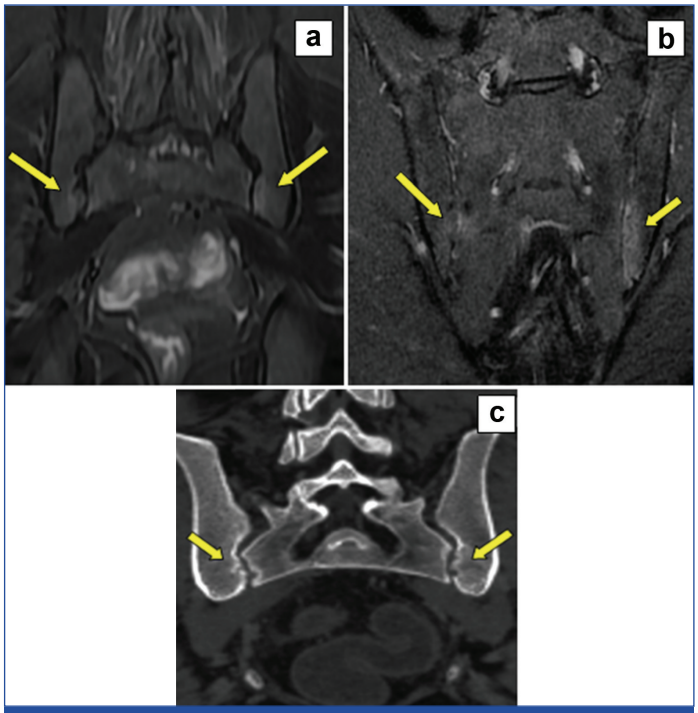
A colonoscopic biopsy was performed and histopathological examination {Haematoxylin and Eosin (H&E)} showed a polypoidal structure lined by colonic mucosa with focal ulceration. The lamina propria was focally loose and oedematous with chronic inflammatory infiltrate composed of lymphocytes and a few plasma cells. These findings were suggestive of ulcerative colitis [Table/Fig-3b].



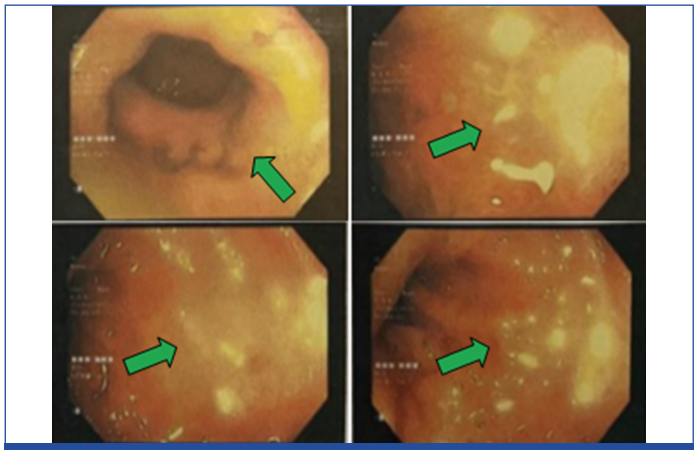
[Table/Fig-1]: a) Axial and b) Coronal post-contrast T1 fat saturated images showing diffuse bowel wall thickening with circumferential mural enhancement involving colonic, jejunal loops and ilial loops (yellow arrows); c) and d) Showing loss of normal colonic haustrations giving rise to lead pipe sign (yellow arrows) in ascending colon, sigmoid colon and rectum.

The patient is currently being treated with Wysolone (Prednisolone) 15 mg once daily for 1 month, followed by 10 mg once daily for the next month after breakfast, as a corticosteroid to manage inflammation. He is also receiving Mesalol (Mesalazine) 1.2 g, two tablets twice daily for 2 months as an anti-inflammatory agent for the treatment of inflammatory bowel disease, and Sompraz-D (Pantoprazole) 40 mg SOS, a proton pump inhibitor to reduce gastric acid secretion and manage gastroesophageal reflux.

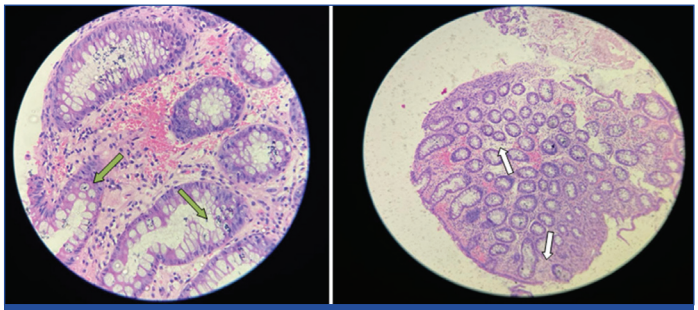
On subsequent follow-up at 2 months, the patient's symptoms showed clinical improvement. He was then started on Saaz



[Table/Fig-2]: Same patient (a) Coronal Short Tau Inversion Recovery (STIR) image depicting bilateral symmetrical subarticular marrow oedema involving the posterior inferior aspect of Sacroiliac (SI) joints (yellow arrows); (b) Coronal post-contrast image - note enhancement of subarticular marrow oedema; (c) Coronal Computed Tomography (CT) scan bone window depicting subarticular erosion of bilateral SI joints (yellow arrows).



[Table/Fig-3a]: There was complete loss of vascularity and multiple subcentimetric ulcers in rectum, sigmoid colon, descending colon, splenic flexure and transverse colon [green arrows].



[Table/Fig-3b]: Histopathological examination showed polypoidal structure lined by colonic mucosa with focal ulceration (green arrows). Lamina propria is focally loose and oedematous, with a chronic inflammatory infiltrate composed of lymphocytes and a few plasma cells (white arrows) (H&E, 10x and 4x).

(Sulfasalazine) 500 mg, two tablets twice daily, along with Wysolone (Prednisolone) 10 mg on alternate days for a duration of three months. Regular follow-up was advised.

DISCUSSION

Ulcerative colitis and Crohn's disease, together referred to as idiopathic IBD, continue to pose significant diagnostic and therapeutic challenges. Unlike other inflammatory gut disorders that may be identified by a specific cause or pattern of inflammation, both ulcerative colitis and Crohn's disease have unknown aetiologies, unpredictable disease courses, and variable responses to medical and surgical treatments. Colonoscopy and barium studies remain the primary methods for evaluating patients with known or suspected IBD [1].

Ulcerative Colitis (UC) is a chronic inflammatory disorder of the colon and is associated with the "lead pipe" sign, which refers to a shortened, rigid colon observed in chronic UC. This characteristic appearance results from muscularis mucosa hypertrophy and fibrosis, leading to a smooth, featureless haustral contour [2].

Upto 46% of patients with UC may develop Extraintestinal Manifestations (EIM), with articular involvement being among the most common [3]. A bilateral and symmetric pattern of Sacroiliac (SI) joint involvement is strongly associated with enteropathic sacroiliitis, as seen in ankylosing spondylitis, UC, or Crohn's disease. In contrast, unilateral or asymmetric involvement more commonly suggests psoriatic or reactive arthropathy [4].

Sacroiliitis can be graded on plain radiographs using the New York criteria. A patient is considered positive for radiographic sacroiliitis if the score is ≥ grade II bilaterally or ≥ grade III unilaterally.

Classification of sacroiliitis (New York criteria):

Grade 0: No visible abnormalities in the sacroiliac joints.

Grade I: Suspicious changes; joint margins appear slightly indistinct or blurred.

Grade II: Minimal abnormalities such as small erosions or sclerosis, without joint space alteration.

Grade III: Definite sacroiliitis with more pronounced erosions, marked sclerosis, joint space narrowing or widening, or partial ankylosis.

Grade IV: Complete ankylosis of the sacroiliac joint [5].

According to the New York grading system, present case is classified as Grade II sacroiliitis.

The MRI remains the gold standard for imaging. Early active sacroiliitis is characterised by subchondral bone marrow oedema on T2/STIR sequences, which may progress to erosions, subchondral sclerosis, fat metaplasia, and eventually ankylosis changes that reflect the typical progression of axial enteropathic arthropathy [6].

Primary involvement of the sacroiliac joints in UC is frequently under-recognised on routine gastrointestinal imaging, often delaying referral to rheumatology or initiation of appropriate axial Spondyloarthritis (SpA) therapy. Awareness of radiologic hallmarks is therefore essential. Identification of bilateral symmetric marrow oedema and structural changes in patients with known or even occult UC can significantly influence patient management and reduce long-term morbidity [7].

Leclerc-Jacob S et al., conducted a retrospective cohort study of 186 IBD patients who underwent MRI enterography or colonography between 2004 and 2011. On these MRI scans (axial and coronal fat-suppressed, contrast-enhanced T1-weighted sequences), the sacroiliac joints were assessed by two independent readers using the Assessment of SpondyloArthritis International Society (ASAS) criteria for active sacroiliitis. Inflammatory sacroiliitis was identified on MRI in 16.7% of patients with IBD [8].

Chronic lower back pain in ulcerative colitis may occur due to axial spondyloarthritis or sacroiliitis, which are well-recognised extraintestinal manifestations of inflammatory bowel disease. Other possible causes include osteoporosis with vertebral compression fractures (related to chronic inflammation or prolonged corticosteroid use), mechanical or muscular strain, and, rarely, infectious spondylodiscitis in immunosuppressed individuals. MRI helps differentiate these causes by identifying characteristic patterns of involvement, fracture configuration, and enhancement, such as those seen in spinal infections [9].

The link between gut and joint inflammation is believed to arise from overlapping immune pathways, particularly cytokines such as Tumour Necrosis Factor (TNF)-α and Interleukin (IL)-23 [10]. Treating sacroiliitis in IBD can be challenging while Non Steroidal Anti-inflammatory Diseases (NSAIDs) may relieve joint pain, they can worsen bowel symptoms [10].

Management of ulcerative colitis with bilateral sacroiliitis requires addressing both gastrointestinal and musculoskeletal inflammation. Sulfasalazine is effective for mild to moderate UC and can alleviate peripheral arthritis, making it a reasonable initial therapy [11]. For moderate to severe disease or cases with significant axial involvement, anti-TNF agents such as infliximab and adalimumab are preferred because they effectively control both intestinal and articular inflammation [12]. Vedolizumab, although effective for intestinal disease, has limited efficacy in treating joint manifestations and is therefore less favored in such scenarios [13].

CONCLUSION(S)

Early MRI detection of axial sacroiliitis in patients with ulcerative colitis, even before irreversible structural damage occurs, can significantly influence management strategies. Radiologists play a pivotal role in raising early suspicion, especially in asymptomatic or occult cases. The present case highlights the importance of heightened awareness and close collaboration among Gastroenterologists, Radiologists, and Rheumatologists to ensure early diagnosis and effective management.

REFERENCES

[1] Feldman M, Friedman LS, Brandt LJ, editors. Sleisenger and Fordtran's Gastrointestinal and Liver Disease: Pathophysiology, Diagnosis, Management. 11th ed. Philadelphia (PA): Elsevier; 2021.

[2] Gordon IO, Agrawal N, Willis E, Goldblum JR, Lopez R, Allende D, Liu X, Patil DY, Yerian L, El-Khider F, Fiocchi C. Fibrosis in ulcerative colitis is directly linked to severity and chronicity of mucosal inflammation. Aliment Pharmacol Ther. 2018;47(7):922-39.

[3] Barkhodari A, Lee KE, Shen M, Shen B, Yao Q. Inflammatory bowel disease: Focus on enteropathic arthritis and therapy. Rheumatol Immunol Res. 20221;3(2):69-76.

[4] Antonelli MJ, Magrey M. Sacroiliitis mimics: A case report and review of the literature. Musculoskelet Disord. 2017;18(1):170.

[5] Rudwaleit M, van der Heijde D, Landewé R, Listing J, Akkoc N, Brandt J, et al. The development of Assessment of Spondyloarthritis international Society classification criteria for axial spondyloarthritis (part II): Validation and final selection. Ann Rheum Dis. 2009;68(6):777-83. Doi: 10.1136/ard.2009.108233. Epub 2009 Mar 17. Erratum in: Ann Rheum Dis. 2019;78(6):e59. Doi: 10.1136/ard.2009.108233corr1. PMID: 19297344.

[6] Navallas M, Ares J, Beltrán B, Lisbona MP, Maymó J, Solano A. Sacroiliitis associated with axial spondyloarthropathy: New concepts and latest trends. Radiographics. 2013;33(4):933-56.

[7] Kim DK, Lee KC, Kim JK. Sacroiliitis in inflammatory bowel disease on abdominal computed tomography: Prevalence, misses, and associated factors. Scandinavian Journal of Rheumatology. 2024;53(4):248-54.

[8] Leclerc-Jacob S, Lux G, Rat AC, Laurent V, Blum A, Chary-Valckenaere I, et al. The prevalence of inflammatory sacroiliitis assessed on magnetic resonance imaging of inflammatory bowel disease: A retrospective study performed on 186 patients. Aliment Pharmacol Ther. 2014;39(9):957-62. Doi: 10.1111/apt.12680. Epub 2014 Mar 4. PMID: 24593050.

[9] Wáng YX, Wu AM, Santiago FR, Nogueira-Barbosa MH. Informed appropriate imaging for low back pain management: A narrative review. J Orthop Translat. 2018;15:21-34.

[10] de Souza HS, Fiocchi C. Immunopathogenesis of IBD: Current state of the art. Nat Rev Gastroenterol Hepatol. 2016;13(1):13-27. Doi: 10.1038/nrgastro.2015.186. Epub 2015 Dec 2. PMID: 26627550.

[11] Das KM. Pharmacotherapy of inflammatory bowel disease. Part 1. Sulfasalazine. Postgrad Med. 1983;74(6):141-48, 150-51. Doi: 10.1080/00325481.1983.11698537. PMID: 6139795.

[12] Zhang M, Li M, Ou Y, Huang Q, Leng M, Yang X, et al. Infliximab for patients with moderate to severely active ulcerative colitis: An updated meta-analysis of randomized controlled trials. BMC Gastroenterol. 2025;25(1):458. Doi: 10.1186/s12876-025-04065-w. PMID: 40597681; PMCID: PMC12210827.

[13] Huseynzada S, Yüce İnel T, Hajiyev F, Köken Avşar A, Balcı A, Akpınar H, et al. The Effect of vedolizumab on spondyloarthritis symptoms in a cohort of inflammatory bowel disease patients. Eur J Rheumatol. 2023;10(2):50-56. Doi: 10.5152/eurjrheum.2023.22049. PMID: 37171478; PMCID: PMC10542484.

PARTICULARS OF CONTRIBUTORS:

1. Junior Resident, Department of Radiology, Mallareddy Medical College for Women, Hyderabad, Telangana, India.
2. Assistant Professor, Department of Radiology, Mallareddy Medical College for Women, Hyderabad, Telangana, India.
3. Doctor, Department of Medical Gastroenterologist, Mallareddy Medical College for Women, Hyderabad, Telangana, India.
4. Junior Resident, Department of Radiology, Mallareddy Medical College for Women, Hyderabad, Telangana, India.
5. Senior Resident, Department of Radiology, Mallareddy Medical College for Women, Hyderabad, Telangana, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Chandrashekar Patil,
Assistant Professor, Department of Radiology, Mallareddy Medical College for Women, Hyderabad-500055, Telangana, India.
E-mail: drchandruhbli@gmail.com

PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Sep 16, 2025
- Manual Googling: Nov 03, 2025
- iThenticate Software: Nov 05, 2025 (11%)

ETYMOLOGY: Author Origin

EMENDATIONS: 6

AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? NA
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **Sep 11, 2025**
Date of Peer Review: **Oct 04, 2025**
Date of Acceptance: **Nov 07, 2025**
Date of Publishing: **Feb 01, 2026**