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Rare Case report on Crohn's Disease evolving into Ulcerative Colitis in North India

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ABSTRACT

Crohn's disease is one type of inflammatory bowel disease (IBD), the other being ulcerative colitis. Their clinical presentation is based on the anatomical region involved and the histology. IBD was contemplated as a western disease, but now the number of cases being reported in India are increasing. As per the literature review cases on ulcerative colitis turning into Crohn's are reported but to our knowledge there is hardly any case of Crohn's being evolved into ulcerative colitis, especially in North India. In this case study, we present a 28-year-old male diagnosed and being treated for Crohn's disease. Despite the adequate treatment the patient was suffering from relapses and then four years later it was diagnosed that the Crohn's had evolved into ulcerative type. Therefore, this case focuses on keeping a high degree of suspicion of conversion of either type of IBD as the disease progresses over time.

Keywords: Autoimmune, Crohn's, Ulcerative, IBD, Colonoscopy, Colitis.

INTRODUCTION

Inflammatory bowel disease is a chronic non-specific autoimmune disorder affecting the gastrointestinal tract characterised by repetitive episodes of inflammation. This condition has multiple etiological factors including genetics, environmental, gut micro-organisms derangement, and immunological factors [1]. The symptomatology of IBD depends on its type, which can be Crohn's or Ulcerative. Besides the gastrointestinal tract it can have many extraintestinal manifestations. The incidence and prevalence of ulcerative colitis in Punjab have been reported as 6.02 per 100,000 and 44.3 per 100,000 population respectively by Sood et al. [2] However the cases of Crohn's are rare in India thus there are no results of its incidence and prevalence till date. A thorough series of investigations is important to get hold of the disease and its complications in time via proper therapy and thus, leading to reduction in morbidity and mortality of these cases.

CASE DESCRIPTION

A 28-year-old male presented to the department of gastroenterology in August 2025 with chief complaints of diarrhoea with no passage of blood in stools, abdominal pain, joint pains involving large joints and symmetrical in nature, fever not crossing above 100°F, episodes of vomiting empty stomach and after intake of food, loss of appetite, and weight loss of 20 kg over a period of three months. His initial laboratory investigations revealed low hemoglobin, elevated total leucocyte count, increased C-reactive protein, negative blood and urine cultures, raised fecal calprotectin levels,

negative stool culture for Clostridium Difficile toxin A & B, glutamate dehydrogenase, Salmonella and Shigella, and negative viral markers. The lab test in view of thiopurine methyl transferase genotyping was unremarkable.

Table 1: Initial Laboratory Findings

Laboratory parameters	Result	Normal Range
Hemoglobin	8.3	13-17 g/dl
Total WBC Count	19100	4000-10000
C-reactive protein	91	0-6 mg/dl
Blood Culture	Negative	-
Urine Culture	Negative	-
Stool Culture	Negative	-
Fecal Calprotectin	>1000	<50 mg/kg
Dengue IgG & IgM	Negative	-
Malarial Antigen	Negative	-
Dengue NS1 Ag, IgG, IgM	Negative	-
Chikungunya IgG, IgM	Negative	-
Serum TSH	2.95	0.35-5.0 mIU/ml
Serum Uric Acid	4.8	3.4-7.0 mg/dl
Serum Creatinine	1.2	0.7-1.2 mg/dl
TPMT genotyping	Wild type	-
Extractable Nuclear Antigens	Negative	-
Qualitative Profile	Negative	-
Hepatitis B surface antigen	Negative	-
HIV	Negative	-
HCV	Negative	-
Procalcitonin		
Serum Fibrinogen	298	200-400 mg/dl
Serum Degradation products	0.35	0.00-0.50 µg/dl

The patient had a history of being diagnosed with Crohn's disease four years back with multiple episodes of relapse and flare up. He was already on mesalazine two gm, probiotics, prednisolone 10 mg, Mebeverine 135 mg, amoxiclav 1000 mg, and injection adalimumab 40mg once in two weeks. But despite this, his condition was not improving. He also had a history of cholecystectomy in 2021.

The patient was advised for contrast enhanced computed tomography of both chest and abdomen. Tuberculosis being a common complication of long-term use of adalimumab was ruled out. The impression on gastrointestinal tract showed active pancolitis with inflammatory stricture of ascending colon and backwash ileitis, increasing the possibility of ulcerative colitis more than Crohn's disease. In contrast to it the computed tomography performed a year back showed circumferential wall thickening in caecum and ascending colon with fat stranding along the mesenteric border and few sub centimetric perilesional lymph nodes, concluding the diagnose more towards Crohn's disease.

Further to confirm the diagnosis of ulcerative colitis evolved from previous Crohn's disease, the patient underwent colonoscopy with biopsy for histopathology examination. The recent colonoscopy showed concentric confluent involvement of ascending, transverse, and descending colon to caecum with loss of vascular pattern, ulcerations and granularity. Biopsy showed evidence of crypt abscess, mucin depletion, lack of granuloma, and no evidence of dysplasia.

Figure 1: Recent CECT Chest

Figure 2: Recent CECT Abdomen

Figure 3: Colonoscopy of Rectum & Sigmoid Colon

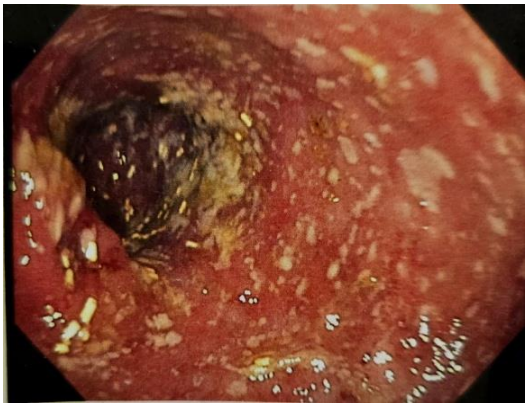

Figure 4: Continuous confluent involvement

In contrast, the previous colonoscopy revealed normal mucosal pattern in rectum, multiple aphthous ulcers with normal mucosa in sigmoid colon, multiple ulcers, and deep ulcerations with normal intervening mucosa in terminal ileum. The histopathology report showed normal epithelium with ulcers at places. Lamina propria predominant with chronic inflammation, evidence of cryptitis, and no evidence of malignancy.

Figure 5: Previous Colonoscopy showing normal mucosa rectum

Figure 6: Multiple ulcers and deep ulcerations with normal intervening mucosa

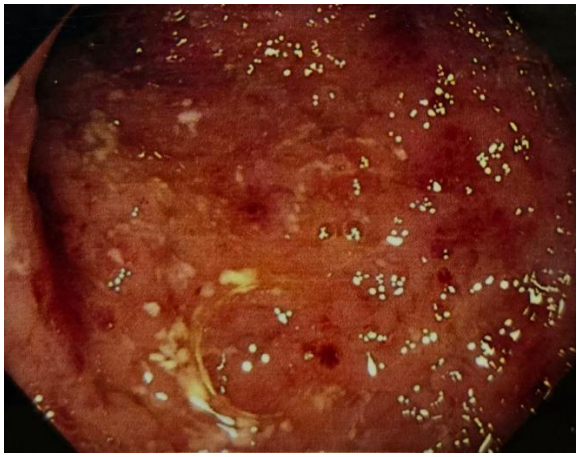

Figure 7: Previous colonoscopy showing cobblestone appearance

Thus, as the disease had changed its nature the patient was shifted to the treatment of ulcerative colitis. It included a sachet of mesalazine pellets two gm, tablet tofacitinib five gm (Janus kinase enzyme inhibitor), capsule rabeprazole and domperidone combination, and syrup cyproheptadine and tricholine citrate combination for stimulating appetite. The patient was instructed about the dietary changes and side effects of tablet tofacitinib in detail most common being tuberculosis, shingles and bleeding disorder. On follow up of the patient, the laboratory tests resulted in a decline of CRP levels to 24.0 mg/dl (table 2).

Table 2: Laboratory results after changing treatment

Laboratory parameters	Result	Normal Range
Hemoglobin	9.5	13-17 g/dl
Total WBC count	7800	4000-10000
C-reactive protein	24.0	0-6 mg/dl
SGOT	31	8-40 IU/L
SGPT	20	5-40IU/L
Serum Creatinine	1.2	0.7-1.2 mg/dl
Serum B 12	491	187-1059 pg/ml

His post-treatment there was an improvement in the appetite of patient, there was no episode of fever and vomiting, the joint pains decreased to almost nil, and the patient starting gaining weight. The patient showed better results with regular follow up. Also, each time the patient was enquired about any new symptoms and routine test results to rule out the side effects of tablet tofacitinib.

DISCUSSION

The key factor responsible for IBD is the immune system of the gastrointestinal tract and intrinsic antimicrobial activities. In Crohn's the inflammation is in an interrupted manner while in ulcerative colitis it is in a continuous manner [3]. Considering the risk factors for this disease, genetics play an important role. The gene NOD2 polymorphism has shown the strongest association with IBD however, the studies by Pugazhendhi S et al. and Mahurkar S et al. assessed that there is no such association found in the Indian population [4,5]. Another study by Baskaran K et al. outlined a strong protective relationship between IBD and the Indian population. The microbiome role is almost similar in the Indian and Western population regarding this disease. There is a reduction in the diversity of the bacterial population which includes bacteroides, bifidobacterium, lactobacillus and ruminococcus in both Crohn's and ulcerative [6]. Environment, hygiene and drug abuse is

also seen to contribute to progression of disease.

Crohn's disease is a type which involves the whole thickness of bowel wall (transmural inflammation) and may affect any part of the gastrointestinal tract. Histopathology shows a deep ulcer with non-caseating granuloma which is seen in around 33% of the population. The classic cobblestone appearance with skip lesion and acute flare episodes are significant in Crohn's [7]. In our case the initial colonoscopy revealed multiple aphthous ulcers, skip lesions, cobblestone appearance, and multiple flare episodes. The initial treatment provided relief.

Ulcerative colitis type is more confined to the involvement of the colon superficially. A typical case starts in the rectum and extends like a backwash in a continuous manner. However, atypical presentations should be kept in mind while diagnosing the patient. Studies have shown that proctitis is found in 30% to 60% of the patients, left-sided colitis in 16% to 45%, and pancolitis in 14% to 35% [8]. In our case the recent colonoscopy after four years showed continuous involvement of ascending, transverse, and descending colon to caecum with loss of vascular pattern, ulcerations and granularity which made a diagnosis of ulcerative colitis rather than Crohn's. In contrast to our study, as per the case report by Yadav and Zhang their patient underwent transformation from UC to Chron's [9].

Approximately 10% to 20% of the time it is difficult to distinguish between Crohn's and UC on clinical, radiological, or histopathological examination. It is important to make a correct diagnosis since the fate and treatment of both diseases is different and the delays can worsen the condition [10]. The extraintestinal manifestation in Indian population is found to more in Crohn's than Ulcerative and the prevalence of EIMs are comparable to the western countries [11,12]. Our patient suffered from the peripheral arthropathy involving the joints ankles, knees, and wrists.

On getting to the final diagnosis of ulcerative colitis the patient was shifted on to tablet tofacitinib instead of injection adalimumab and the patient consistently improved with no acute flares on follow up. There are only two studies on the Indian population in view of IBD by Khosla et al. in 1984 and 15 years later by Sood et al. and hardly any case reports. Thus, this case report adds a significant contribution to the existing literature.

CONCLUSION

This case draws attention towards the evolution of one type of IBD to another and the importance of follow up to grasp new changes in patients, be it clinically, radiologically, on colonoscopy, histopathology, or any other laboratory test. To differentiate between Crohn's and ulcerative can be challenging but it is necessary to make an accurate diagnosis. Any delay is physically, mentally, and economically exhausting for the patient.

Declaration by Authors

Consent of patient: The consent of patient was taken for presenting this case report and the images.

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