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Case Report

Autoimmune Hemolytic Anemia in Ulcerative Colitis

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Abstract

A 32- years-old malewithUlcerative Colitis (UC) presented with bloody diarrhea, anemia, jaundice, hepatosplenomegaly, and positive tests of hemolysis. The diagnosis of Autoimmune Hemolytic Anemia (AIHA) established with exclusion of other etiologies. Colonoscopy revealed moderate activity of UC. Management started with mesalamineandprednisolone. In addition, packed RBCs transfusion and immunosuppressant agent was added, but with unsatisfactory response. So, splenectomy was performed withmarked improvement in general condition and laboratory investigations.

Keywords: Autoimmune hemolytic anemia; Ulcerative colitis; Inflammatory bowel disease

Introduction

Anemia is a common complication of IBD affecting about one-third of patients. Iron Deficiency (ID) is the most common cause of anemia in IBD. The second major cause of anemia in UC is Anemia of Chronic Disease (ACD) [1]. The association of AIHA and Ulcerative Colitis (UC) was first described in the early 1950s but no more than 55 cases have been published in the literature. To the best of our knowledge, this is the first case report from Egypt.

		On admission	1 week	3 weeks	2 months	Before surgery	After surgery	6 months after
Hemoglobin (g/dl)		3.3	6.72	6.67	8.34	7.7	11.4	14.41
HCT (%)		11.7	20.7	20.59	24.39	23.8	35	36.96
MCV(Fl)		137.2	113	98.38	100	97.9	92.8	84.98
MCH(pg)		38.8	36.6	31.88	34.21	31.7	30.2	33.13
MCHC		28.2	32.4	32.41	34.21	32.4	32.6	33.1
Platelets count (/cmm3)		145	147	292	306	251	420	380.9
WBCs (/cmm3)		35.4	32.5	9.77	8.721	9.4	12.9	12.41
Granulocyte%		40.2	51.2	60.61	67	67.5	71.2	31.84
Lymphocytes%		54.9	44.4	30.51	23.6	23.3	16.2	52.46
MID%		4.9	4.4			9.2	12.6	
Reticulocyte	Percent	80%						1.50%
	RPI*	8.32						

ESR	163						15
LDH (U/L)	4103	3084	2500	2500	1800	61	55
S. ferritin	860						320
s. albumin	3.9	3.8	3.8	3.5	3.3	4.2	4.3
s. bilirubin total (mg/dl)	7.7	7.3	6.2	5.68	7.2	1.49	1.1
Direct bilirubin	1.1	1.3	1.2	1.46	1.3	0.3	0.3
ALT (IU/L)	18	12.57	15	15.2	18	21.02	19
AST(IU/L)	53	49.92	45	35	20	16	20
INR	1.2	1	1	1	1	1	1
Alkaline phosphatase (IU/L)	160.16	155.45	-	-	-	-	95
Coombs' test							
Direct	Positive						
Indirect	Positive						
HCV antibody	Negative						
HBsAg	Negative						
HIV	Negative						
IHA for Schistosomiasis	1/320						
CMV IgM	Negative						
S. calcium	7.45						
P-ANCA	Negative						
C-ANCA	Negative						
RPI* = Reticulocyte production index which indicates normal BM response to anemia if it is > 3.							

Table: Laboratory patient characteristics at time of admission and during follow up.

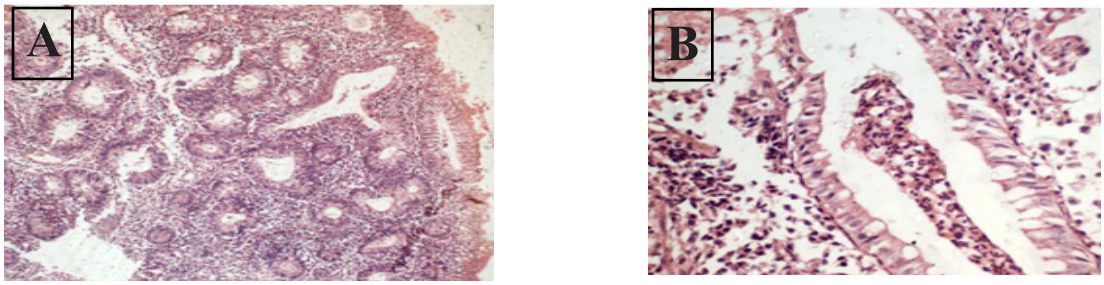

Figure 1: Colonic biopsy (A) showing mild crypt irregularity and infiltration of the lamina propria by moderate chronic inflammatory infiltrate (H&E, 200x) (B) showing infiltration of the lamina propria by moderate chronic inflammatory infiltrate and crypt abscess (H&E, 400x).

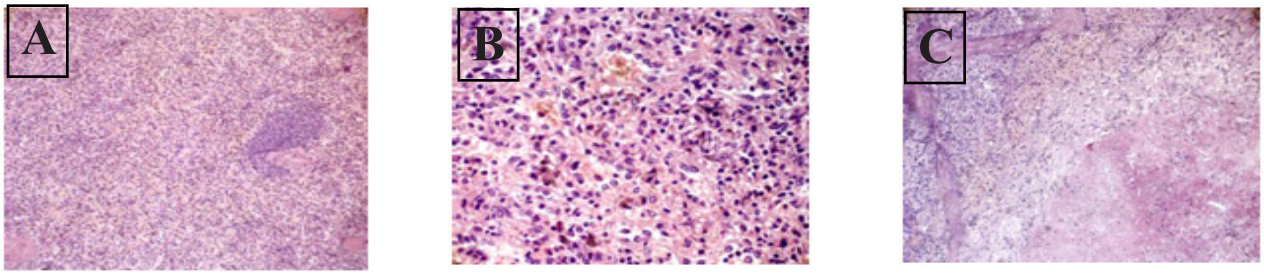

Figure 2: Histopathology of splenic specimens (A) The photograph shows compressed lymphoid follicle with congestion and distension of the cords and sinuses (H&E, 200x) (B) The photograph shows congestion and distension of the cords and sinuses by RBCs and excess hemosiderin laden macrophages (H&E, 400x) (C) The photograph shows wide area of coagulative necrosis (H&E, 200x).

Discussion

Several reports demonstrated a significant association of extensive colitis with the high prevalence of AIHA of up to 28% [2]; a situation that was observed in our case with ulcerative pancolitis in association with AIHA.

The link between UC and AIHA was suggested by a lot of theories; (a) alteration of RBCs through the gastrointestinal tract with absorption of these antigenic components through the ulcerated colonic lesion, (b) absorption of non red cell antigen through the affected colonic mucosa resulting in the formation of cross reacting antibodies that bind patient RBCs, (c) formation of cross reacting antibodies that react with both colonic mucosa and RBCs, (d) non-specific provocation of the immune system either by chronic IBD or its therapeutic drugs and inducing anti-erythrocyte antibodies [3,4].

The approach to AIHA in the presence of ulcerative colitis is similar to that for idiopathic AIHA. Steroids produce a remission in approximately half of the cases. There is considerable individual variation in the dosage required to induce and maintain remission. The initial dose of prednisolone is 60-80 mg daily as a single morning dose. Parenteral therapy may be necessary in acutely ill patients; methyl prednisolone 500-1,000 mg daily IV for five days is followed by oral prednisolone therapy. Treatment with steroid should be continued for at least 3 weeks before being considered as ineffective. When remission occurs, dosage of steroid should be gradually reduced to the minimum dose necessary to maintain a hemoglobin level of at least 11g%.

In resistant cases of AIHA associated IBD unresponsive to steroids and /or immunosuppression, some authors favor splenectomy with or without colectomy, whereas others suggest that splenectomy may not be the preferred option, especially in the absence of severe active colonic disease, and colectomy should be considered only for fulminant or intractable colitis.

Those individuals who are not responding to splenectomy may respond to immunosuppressive therapy with cyclophosphamide in a dose of 1.5-2.0 mg/kg/day or azathioprine, 2-2.25 mg/kg/day. Finally, if the hemolysis is not responsive to these modalities, total proctocolectomy seems effective and hemolysis invariably abates after this procedure [5].

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