

CASE REPORT

Sweet's Syndrome in a Patient with Acute Ulcerative Colitis: Presentation of a Case and Review of the Literature

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INTRODUCTION

Inflammatory bowel disease includes ulcerative colitis and Crohn's disease. Etiology is unknown and acute exacerbations and remissions are frequent. Pathogenesis is also unclear. Extra-intestinal features have been described and several skin manifestations have been associated with the disease. Some of them can precede bowel involvement but others used to accompany acute exacerbations or appear during remission periods of intestinal disease. Among these skin manifestations some acute dermatosis like neutrophilic dermatosis have been reported. Sweet's syndrome, pyoderma gangrenosum, erythema elevatum diutinum, subcorneal pustular dermatosis, pyostomatitis vegetans, and vesiculopustular eruption have been proposed to represent manifestations along a continuum of neutrophilic dermatosis [1]. Nevertheless, ulcerative colitis is rarely associated with Sweet's

syndrome. We report a case of acute onset of ulcerative colitis and Sweet's syndrome focusing into its pathophysiology and reviewing the literature.

CASE REPORT

A 52-year-old man was admitted to hospital because of fever, lower gastrointestinal bleeding and skin lesions. He was otherwise healthy except for previous mild depression. The patient was not taking any medication. He reported bloody feces for association with diffuse abdominal pain for the last three weeks. Fever began two days before admission with the onset of red and tender skin lesions. On physical exploration his body temperature was 38.5°C. The patient presented disseminated erythematous, tender plaques and nodules on the trunk, especially back, and both arms. Laboratory tests disclosed erythrocyte sedimentation rate 79 (Normal

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^b Abbreviations: ANA, antinuclear antibodies; ANCA, antineutrophil cytoplasmic antibodies; G-CSF, granulocyte colony-stimulating factor.

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range 0 to 20 mm/hr), C-reactive protein 10.5 (Normal range 0 to 5 mg/dl), white cell count 13.3 (Normal range 4.0 to 10.0 $\times 10^3/\text{mm}^3$ (80 percent neutrophils), platelet count 651,000 (Normal range 100,000 to 350,000/ mm^3). Other biochemical tests were normal as were blood coagulation and urinalysis. Antinuclear antibodies (ANA)^b were negative. Antineutrophil cytoplasmic antibodies (ANCA) were positive (1/160-pANCA). Blood culture specimens were negative. An EKG, chest radiographic film and an abdominal ultrasonographic study showed no abnormalities. Colonoscopy exploration disclosed intense proctitis affecting the last 15 cm with multiple ulcerative lesions. Colonic biopsy was conclusive with ulcerative colitis. A skin biopsy showed a dense infiltration of neutrophils establishing the diagnosis of Sweet's syndrome. Intravenous treatment with methylprednisolone at a dose of 60 mg/day was begun with rapid improvement in skin and colonic lesions and complete clinical recovery.

DISCUSSION

Sweet's syndrome, also known as acute febrile neutrophilic dermatosis, is characterized by the sudden onset of fever, leukocytosis, and tender, red inflammatory, well-demarcated papules, plaques or nodules usually affecting the face, neck, upper limbs or back. These lesions show dense neutrophilic infiltrates on histologic examination [2]. Treatment of Sweet's syndrome is based on systemic corticosteroids, usually successful, although colchicine, dapsone, cyclosporin, potassium iodide, indomethacin, doxycycline, clofazamine, pentoxifylline, and other immunosuppressants have been used. Spontaneous remissions have been reported [2, 3].

Sweet's syndrome has been described as occurring simultaneously in malignan-

cies, especially hematological dyscrasias and in the absence of them [4]. In this sense, the association with hematological disorders has recently been favored by demonstrating a rearrangement of the bcr gene in DNA obtained from a skin lesion as well as in blood DNA, indicating the presence of leukemic cells within the skin lesion [5].

Sweet's syndrome has also been reported as an unusual extra-intestinal manifestation of either Crohn's disease or ulcerative colitis. In patients with inflammatory bowel disease, Sweet's syndrome is more common in women, colonic involvement, and patients with other extra-intestinal features. The rash is associated with active disease in up to 80 percent but it may precede the onset of intestinal disease. It has been also described after proctocolectomy [1, 6]. In a retrospective study of 16 patients with Sweet's syndrome, only two patients (12 percent) suffered from malignancy and one patient had been diagnosed from ulcerative colitis previously [7]. In other larger retrospective study of 29 patients only four had an underlying disease (polycythemia, sarcoidosis, lymphoma, and ulcerative colitis) [3]. Some immune system disorders such as subacute thyroiditis, rheumatoid arthritis, ankylosing spondylitis, dermatomyositis, Behcet's disease, Sjögren's syndrome, sarcoidosis and other immunologic diseases have been reported in association with Sweet's syndrome [8-10]. Recently, Sweet's syndrome has been described during granulocyte colony-stimulating factor (G-CSF) therapy. In some of these patients, clinical presentation of the syndrome was not typical because of the appearance of gingival lesions [11, 12]. It has also been associated with primary T-cell immunodeficiency disease but these patients may fail to respond to standard treatment of Sweet's syndrome and suffer a prolonged and persistent course [13].

In other study, Mallolas et al. assessed sera from 18 ulcerative colitis patients known to be positive for perinuclear IgG-ANCA (antineutrophil cytoplasmic antibodies) by indirect immunofluorescence in order to identify ANCA in non-apoptotic and apoptotic neutrophils. They found that the most frequent localization of ANCA on scanning laser immunofluorescence microscopy in non-apoptotic neutrophils was in the nuclear periphery (50 percent). In all sera, ANCA fluorescence co-localized almost completely with apoptotic DNA. These data suggest an intracellular DNA redistribution during neutrophil apoptosis and a possible role of neutrophils in antigen exposure to the immune system [14]. Another study, using fluid samples of whole gut lavage with a polyethylene glycol electrolyte solution, showed that neutrophils migrate into the gut wall and lumen and patients with inflammation have significantly higher levels of cytokines IL-1 β and IL-8 in the whole gut lavage fluid [15].

We propose an underlying common alteration in the immune system (especially neutrophilic response) in patients with ulcerative colitis and in patients with Sweet's syndrome. In this sense, there is neutrophilic infiltration of the colonic mucosa in ulcerative colitis and about a third of patients with that disease have circulating ANCA. Neutrophils appear to be fundamentally important in Sweet's syndrome and ANCA has been identified in this neutrophilic disorder [1, 4]. As we have seen, *in vitro* studies suggest that ANCA may play a pathogenic role in the activation of neutrophils, and it has been theorized that endogenous G-CSF may play a role in Sweet's syndrome by stimulating the production, activation, maturation and chemotaxis in neutrophils [12]. Factors influencing neutrophilic influx into apparently normal skin are not well defined but might be explained on the

basis of cytokine activity and ANCA activation affecting granulopoiesis.

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