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Case Study

ACROMEGALY AND ULCERATIVE COLITIS – A RARE ASSOCIATION

Atul Jha*, Sachin Yadav, Vishal Jha, Gauri Jha

Dept of Gastroenterology, Army Hospital (Research and Referral), New Delhi

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For Correspondence
Email ID:
docatuljha@gmail.com

Abstract

Acromegaly results from excessive growth hormone (GH) and is easily diagnosed in patients who present with typical clinical features like macrognathia, field loss, and enlargement of appendages. It is associated with a number of Gastrointestinal complications like colonic polyps and neoplasia. Ulcerative colitis (UC) is an immune-mediated inflammatory bowel disease of with multitude of extra-intestinal manifestations but has never been described in association with Acromegaly. We report two cases of the simultaneous affliction of Acromegaly and ulcerative colitis.

Keywords: Ulcerative colitis; Acromegaly

Introduction:

Acromegaly is the clinical syndrome that results from excessive secretion of growth hormone (GH). The diagnosis of Acromegaly should be suspected in individuals who present with typical clinical features of GH excess like macrognathia and enlargement of hands and feet with long-term implications of the cardiovascular disease, sleep apnea, metabolic disorders, colonic polyps, and neoplasia. Ulcerative colitis (UC) is a chronic immune-mediated inflammatory disease of the colon which has multiple associations that manifest as extra-intestinal disease. UC has never been described in association with Acromegaly. We report two cases of the simultaneous affliction of Acromegaly and ulcerative colitis.

Case report 1:

A 64-year-old woman, a known case of hypertension, diabetes mellitus, had been diagnosed as a case of Acromegaly in 2012 when she presented with diminution of vision, headache, and enlargement of hand, feet, and jaw. Investigations had shown raised serum IGF1 and serum growth hormone levels (basal and post-suppression) with pituitary adenoma (large lobulated sellar and suprasellar mass 1.9 x 1.5 x 3.5 cm) on MRI. She underwent transnasal trans-sphenoidal (TNTS) excision of tumor and had been on octreotide therapy. She presented to the Gastroenterology OPD with complaints of bloody diarrhea and generalized weakness of eighteen months duration. She had pallor, coarse skin and abdominal tenderness with normal bowel

sounds. Investigations revealed microcytic hypochromic anemia (Hemoglobin 8.0 g%, Mean corpuscular volume 72 fl and blood smear showing microcytic hypochromic cells). Stool examination revealed numerous RBCs and pus cells. Stool culture was sterile. Ultrasonography abdomen was normal. Videocolonoscopy revealed loss of vascular pattern, granularity, erosions, and friability in colon till splenic flexure. Biopsy showed architectural distortion and focal ulcerations with diffuse cryptitis with crypt abscess and immunodepletion. Thus on the basis of clinical findings, colonoscopy and biopsy, a diagnosis of active ulcerative colitis were made and she was started on 5-ASA therapy. She has responded to treatment and is on routine follow-up.

Case report 2:

39-year-old lady, was diagnosed as a case of Ulcerative colitis in 2015 when she presented with bloody diarrhea and anemia and colonoscopy and biopsy revealed features suggestive of Ulcerative colitis. She was managed with 5-ASA based therapy and was in remission. She was noted to have features of Acromegaly in the form of prognathism and frontal bossing. On further evaluation, she was found to have elevated IGF_1 and GH and perimetry revealed bi-temporal field defects. MRI Brain revealed a pituitary macroadenoma for which she underwent TNTS and is presently recovering well. She is on hormone replacement and 5-ASA with stool frequency of 2 per day and is under monthly follow-up under gastroenterology and endocrinology.

Discussion:

Acromegaly results from persistent hyper-secretion of growth hormone (GH). Excess GH and insulin-like growth factor-1 (IGF-1) have both somatic and metabolic effects. The somatic effects include stimulation of growth of many tissues, such as skin, connective tissue, cartilage, bone, viscera, and many epithelial tissues. When there is clinical suspicion of the disease, biochemical confirmation is required to establish the diagnosis. Biochemical diagnosis is made by determining IGF-1 levels and loss of GH suppression after 75 gm glucose challenge. The current international consensus for the diagnosis of Acromegaly recommends a nadir GH equal to or greater than 0.4µg/L after glucose challenge in conjunction with clinical suspicion and high IGF-1 levels [1]. The gastrointestinal manifestations associated with Acromegaly are colon carcinoma, adenomatous polyps, colonic diverticular disease and dolichocolon [1,2]. Patients with Acromegaly have a higher prevalence of colorectal neoplasms. The pathogenic mechanisms are still unclear and may be related to a sustained increase in serum GH & IGF-1, hyperinsulinemia or altered local immune response and reduced expression of the peroxisome proliferator-activated receptor gene [1,3]. A positive correlation between mortality from colorectal cancer and disease activity is seen. Therefore, complete colonoscopy should be offered in all patients with Acromegaly [4].

UC usually present with diarrhea, which may be associated with blood. Bowel movements are frequent and small in volume as a result of rectal inflammation. Associated symptoms include colicky abdominal pain, urgency, tenesmus, and incontinence [5]. It is characterized by recurring episodes of inflammation limited to the mucosal layer of the colon. It commonly involves the rectum and may extend in a proximal and continuous fashion to involve other parts of the colon. Extraintestinal manifestations from nearly every organ system are frequent in IBD, occurring in 20-40% of patients. Systems commonly involved are the skin, musculoskeletal system, and eyes, but the hepato-pancreatic-biliary, nervous, cardiovascular, renal and respiratory systems may also be affected [5,6]. Endocrinal associations are frequent and include metabolic bone disease, growth failure [5], dyslipidemia, insulin resistance [7], infertility, pubertal delay and hypogonadism [8].

Evidence suggests that IGF-I may promote an increased risk of intestinal cancer and fibrosis through the excessive trophic drive. High levels of IGF-1 in the circulation may increase the risk of colon cancer [9]. Considerable evidence also suggests that local IGF-I acting in a paracrine and/or autocrine manner may be a mediator of excessive wound-healing responses that lead to fibrosis during intestinal inflammation. IGF-I derived from intestinal mesenchymal cells regulates the growth and function of neighboring epithelial cells, as well as mesenchymal cells themselves [10].

We searched the internet using keywords Acromegaly; Ulcerative Colitis; Inflammatory Bowel Disease; Growth Hormone and IGF-1. We could not find any reported case of simultaneous Acromegaly and UC. Here we report two such cases that were diagnosed to have both conditions together. There may be possible explanations for the association between UC and Acromegaly but further study is needed to fully establish the pathophysiology of one to the causality of the other.

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