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CASE REPORT | INFLAMMATORY BOWEL DISEASE

Successful Treatment of Ulcerative Colitis With Vedolizumab in a Patient With an Infliximab-Associated Psoriasiform Rash

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Abstract

Psoriatic skin lesions associated with anti-tumor necrosis factor (TNF) agents are well-described in the medical literature. However, the etiology and optimal management of this condition remain unclear. Vedolizumab is a novel, gut-specific, anti-integrin agent used for the treatment of inflammatory bowel disease (IBD). We report a case of infliximab-associated psoriasiform lesions in an ulcerative colitis patient. Transition to vedolizumab resulted in resolution of the cutaneous lesions without recurrence and remission of his ulcerative colitis.

Introduction

Approximately one-third of patients with inflammatory bowel disease (IBD) experience disease-related skin lesions at some point in their disease process.[1] These lesions are often the result of extra-intestinal inflammatory manifestations, nutritional deficiencies, infections, or drug-related side effects.[1] Cutaneous symptoms occur in 20% of patients on anti-tumor necrosis factor (TNF) therapy and most commonly include psoriasiform rash and/or eczema.[2,3] Despite their prevalence, there are no evidence-based management or treatment strategies. Topical and/or methotrexate-based therapies are largely ineffective and approximately 25% of patients treated with a change of anti-TNF therapy experience cutaneous recurrence.[2,4]

Case Report

A 50-year-old man was diagnosed with left-sided ulcerative colitis (UC) in 2006. His medical history was significant for mild asthma, gastroesophageal reflux disease, and hypertension. He had no current or prior nicotine use. His family's medical history was negative for IBD, psoriasis, and allergic reactions. He was treated with mesalamine with no improvement, then azathioprine that was stopped secondary to thiopurine-associated pancreatitis. In June 2006, he started infliximab, an anti-TNF agent, at 5 mg/kg and achieved prompt clinical remission.

In October 2007, the patient was noted to have thick psoriatic plaques on his palms and feet after completing 12 infliximab infusions (Figure 1). Psoriasis was confirmed by skin biopsy, and the patient was prescribed topical steroid-based therapies for his skin lesions. This regimen was ineffective and the patient continued to experience cutaneous eruptions. Infliximab was discontinued, and he had significant improvement of his psoriasiform rash, but his colitis relapsed and endoscopic examination demonstrated significant inflammation. The patient was enrolled into a randomized, placebo-controlled, double-blind, phase III trial with a different class of biologic medication, an anti-$\alpha 4\beta 7$ integrin agent (vedolizumab). At 8 months post-induction, endoscopic assessment demonstrated complete mucosal healing (Figure 2), and he had near complete resolution of his rash (Figure 3). One year later, at the end of the clinical trial, unblinding confirmed that the patient indeed had received

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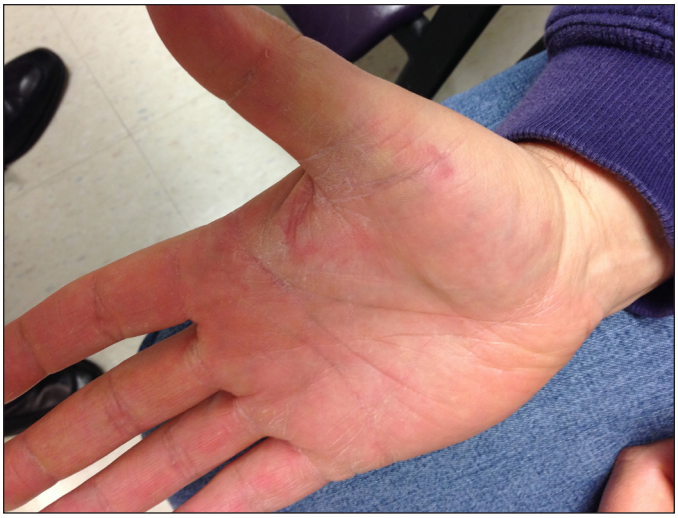

Figure 1. Psoriasiform plaques on the patient's palms during infliximab treatment.

vedolizumab 300 mg every 4 weeks per study protocol.[5] He agreed to participate in the open label phase of the trial and has been enrolled for over 4 years. He is doing well and remains in sustained clinical, endoscopic, and histological remission, and has not experienced a relapse of a psoriasiform rash.

Discussion

Psoriasiform rash and eczema are the most common anti-TNF–associated skin lesions, and are estimated to occur in 1.62–8.8% of all anti-TNF–treated IBD patients.[3,4,6,7] Palmoplantar psoriasis, involving the palms and plants, affects 15–20% of patients with psoriasis, but is found in more than 30% of IBD patients with anti-TNF–associated psoriasis.[7,8] Several studies and case reports report the median time of onset of psoriasis to be between the third and fourth infusion of anti-TNF exposure, but vary between 2 weeks to several years.[8,9]

Anti-TNF–associated psoriasiform lesions are unrelated to type of IBD, gender, treatment duration, smoking status, disease activity, location, phenotype, or concomitant immunosuppressive therapy.[7,10,11] This psoriasis is considered paradoxical inflammation—development of inflammatory lesions in patients with immune-mediated inflammatory disorders after initiation of anti-inflammatory agents (such as anti-TNF).[12] The underlying pathogenic mechanism is poorly understood.

Management of IBD patients who experience anti-TNF–associated psoriasis is complex and complicated by many factors, including a typically poor response to topical medication (while maintaining anti-TNF therapy) and cross-reactivity upon switching anti-TNF therapy. Case studies and case series show high rates of recurrence—between 33% and 100%—after commencing a second anti-TNF agent.[2,7,8] These data suggests a class effect and confirms a poor prognostic response to alternative anti-TNF therapy. Anti-TNF withdrawal occurs in 40% of these patients, and is the most effective treatment strategy when combined with topical therapy[4]; however, withdrawal of biologic therapy elevates the risk of IBD relapse.[2,4] Concomitant treatment (anti-TNF agent with immunomodulators) has demonstrated minimal efficacy.

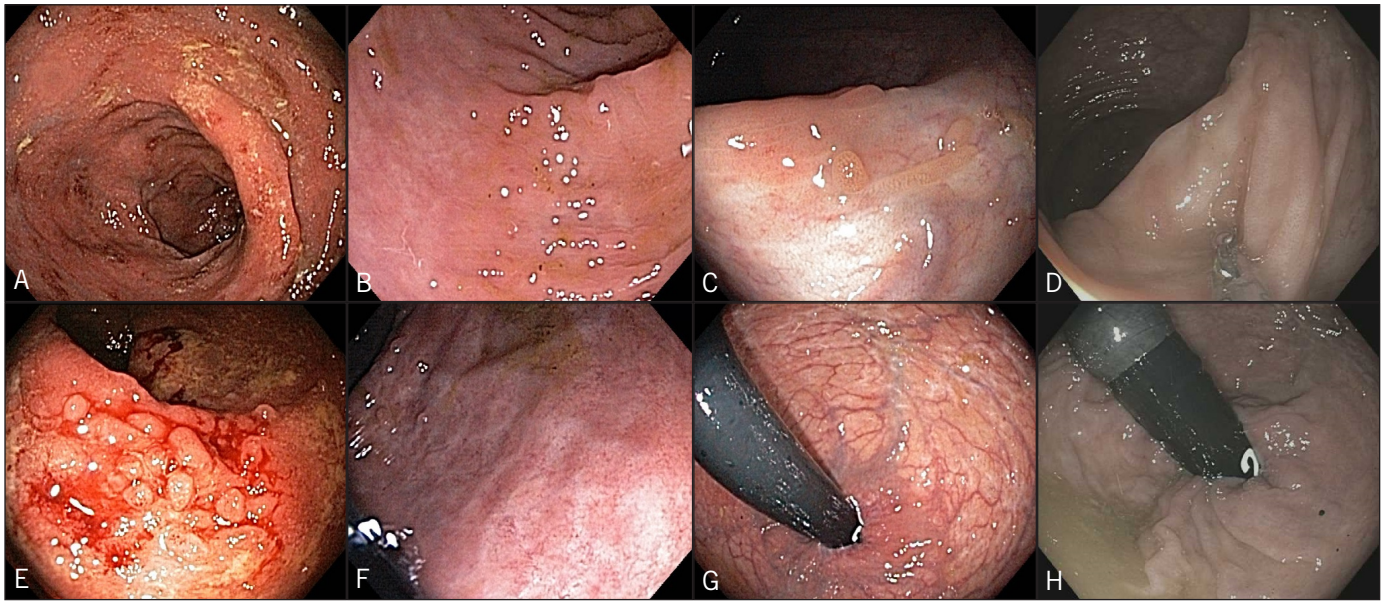

Figure 2. Endoscopic images of the sigmoid colon (A) before vedolizumab, (B) at week 6 of treatment, (C) at week 52 of treatment, and (D) at 4.5 years of treatment. Endoscopic images of the rectum (E) before vedolizumab, (F) at week 6 of treatment, (G) at week 52 of treatment, and (H) at 4.5 years of treatment.

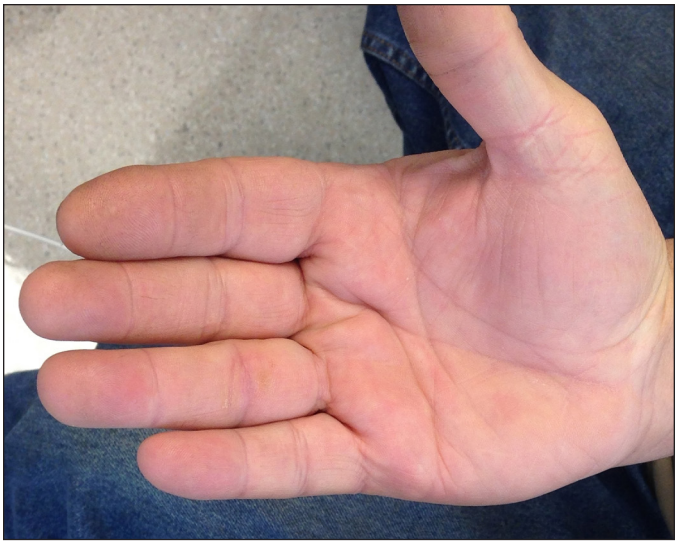

Figure 3. Patient's palm after infliximab discontinuation and treatment with vedolizumab.

A few case studies have demonstrated newer therapeutic options that utilize alternative biologic classes. One small case series found that 9 patients with Crohn's disease (CD) and psoriatic lesions who were treated with another monoclonal antibody, ustekinumab (anti-IL12/IL-23), demonstrated a robust cutaneous response and clearance of their lesions. Unfortunately, the patients' CD did not respond to ustekinumab therapy.[13] Another case report described aggravation of preexisting psoriasis in a patient with multiple sclerosis during treatment with natalizumab (anti-α4-integrin) treatment.[14] Vedolizumab is a novel drug that has been FDA-approved for the induction and maintenance of remission in patients with UC and CD.[5,15] This is a monoclonal antibody that blocks the α4β7 integrin, inhibiting lymphocyte migration from the blood stream and resulting in gut-specific, anti-inflammatory activity.

Disclosures

Author contributions: A. Hirsch and RJ Colman conceptualized the case report, reviewed the literature, drafted the manuscript, and share first authorship. GD Lang conceptualized the case report and drafted the initial manuscript. DT Rubin supervised and conceptualized the case report, drafted the manuscript, and is the article guarantor.

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