Psoriatic Alopecia/Alopecia Areata–Like Reactions Secondary to Anti–Tumor Necrosis Factor-α Therapy: A Novel Cause of Noncicatricial Alopecia

Leona A. Doyle, MD, Leonard C. Sperling, MD,† Shashi Baksh, MD,‡ Jeffrey Lackey, MD,† Brian Thomas, MD,† Ruth Ann Vleugels, MD,§ Abrar A. Qureshi, MD, MPH,§ and Elsa F. Velazquez, MD**

Abstract: With the increasing use of anti–tumor necrosis factor α (anti-TNF) biologic drugs to treat autoimmune diseases, an expanding array of adverse reactions is emerging. Anti-TNF drug–induced alopecia is a less well-known side effect of this class of drugs. The aim of this study was to define the clinical and histopathological features of alopecia arising in the setting of anti-TNF therapy. Clinical and histopathological features of 3 patients who developed scalp alopecia during anti-TNF treatment were examined. Two of the 3 patients also developed psoriasiform lesions outside the scalp, and biopsies from both scalp and nonscalp sites were reviewed. Clinically, each patient had large scaly patches associated with the scalp alopecia. All scalp biopsies revealed psoriasiform epidermal features and alopecia areata–like dermal changes. Epidermal changes included acanthosis and confluent parakeratosis with neutrophils and frank pustules. Dermal changes included markedly increased catagen/telogen and miniaturized hairs and peribulbar lymphocytic inflammation. Numerous plasma cells and eosinophils were present in all cases. Biopsies from the nonscalp lesions showed psoriasiform changes and prominent eosinophils and plasma cells. Two patients showed significant improvement of the alopecia with topical treatment only. In conclusion, anti-TNF therapy–related alopecia may closely mimic psoriatic alopecia and alopecia areata but can be histologically distinguished from alopecia areata by epidermal psoriasiform changes and dermal plasma cells and from primary psoriasis by the presence of plasma cells and eosinophils. A correct diagnosis can enable effective treatment and, in some cases, allow anti-TNF therapy to continue.

Key Words: anti-TNF, alopecia, areata, psoriasis, psoriatic alopecia

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From the *Department of Pathology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA; †Department of Dermatology, Uniformed Services University of the Health Sciences, Bethesda, MD; ‡Pennsylvania Speciality Pathology, Lancaster, PA; and §Department of Dermatology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA. E. F. Velazquez is now with the Caris Diagnostics, Newton, MA.

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Reprints: Elsa F. Velazquez, MD, Caris Diagnostics, 320 Needham Street, Suite 200, Newton, MA 02464 (e-mail: evelazquez@carisdx.com).

INTRODUCTION

The use of anti–tumor necrosis factor (TNF) drugs for the management of autoimmune disorders such as rheumatoid arthritis, inflammatory bowel disease, and psoriasis has revolutionized treatment of these chronic debilitating diseases. However, as their use increases, new side effects are becoming evident. In addition to adverse systemic effects on the immune system, anti-TNF agents are now increasingly recognized as causing a wide array of cutaneous reactions.[1,2]

One seldom recognized side effect of treatment with anti-TNF agents is the development of alopecia, often associated with psoriasiform lesions on the scalp or elsewhere, in patients with no prior history of psoriasis. These lesions may clinically resemble primary psoriatic alopecia or alopecia areata. There are a few case reports in the literature describing this form of alopecia, but the histopathological features have not been described.[3–6] In this study, we report a series of such cases and define the entity "psoriatic alopecia/alopecia areata–like reaction secondary to anti-TNF treatment."

MATERIALS AND METHODS

Three patients (all women; 21, 27, and 39 years old) who developed scalp alopecia while receiving anti-TNF treatment for the management of Crohn's disease were included in this study. None of the patients had a history of psoriasis or alopecia before commencing treatment with anti-TNF agents. Two patients also developed a skin rash outside the scalp clinically consistent with psoriasis. The patients were examined and biopsied at 3 separate institutions over a 1-year period. None of the cases have been previously published. Four scalp punch biopsies (2 patients had 1 scalp biopsy and 1 had 2 scalp biopsies) and 3 biopsies from the lesions outside the scalp were reviewed. Slides stained with Hematoxylin and Eosin, Steiner, and Periodic Acid Schiff with diastase (PAS-D) stained slides were available for light microscopy assessment in all cases. The clinical characteristics of each patient and histopathological features of their biopsies were reviewed.

RESULTS

Case 1

Clinical Features

A 21-year-old woman with Crohn's disease developed scaly psoriasiform plaques on the trunks and extremities