Autoimmune progesterone dermatitis presenting as fixed drug eruption: a case report

Raya Mokhtari[1] MD, Mozhdeh Sepaskhah[1] MD, Fatemeh Sari Aslani[1,2] MD, Ladan Dastgheib[1] MD

Affiliations: [1]Molecular Dermatology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran, [2]Pathology Department, Shiraz University of Medical Sciences, Shiraz, Iran.

Corresponding Author: Mozhdeh Sepaskhah, Department of Dermatology, Faghihi hospital, Zand Street, Shiraz, Fars, Iran, Email: sepaskhah_m@yahoo.com

Abstract

Autoimmune progesterone dermatitis (APD) is a rare disorder characterized by periodic skin lesions that erupt during the luteal phase of the menstrual cycle. Clinical manifestations of APD is caused by an unusual allergy to progesterone and has a wide range of clinical manifestations from eczema and urticaria to angioedema and erythema multiforme. A 46-year-old woman described recurrent, round erythematous plaques on the lower lip, both forearms and buttocks. These skin eruptions waxed and waned for 10 months, reoccurring 3-4 days before menstruation. Based on her medical history and physical examination, APD was suspected and the progesterone challenge test showed positive results. After treatment with oral prednisolone (30 mg/day) before menstruation, the severity of eruptions decreased dramatically but recurrence did not cease completely.

Keywords: autoimmune progesterone dermatitis, fixed drug eruption, progesterone challenge test

Introduction

Autoimmune progesterone dermatitis (APD) is a rare, cyclical eruption that occurs in the luteal phase of the menstrual cycle and during pregnancy. Many manifestations have been reported including cyclical urticaria, vesiculobullous eruptions, erythema multiforme, eczema, maculopapular eruptions, purpura/petechiae, and stomatitis [1]. One case of fixed drug eruption has been reported as a very rare presentation of APD [2] The condition resolves spontaneously after menopause. Herein, a case of cyclical fixed drug eruption is reported as a very rare presentation of autoimmune progesterone dermatitis.

Case Synopsis

A 46-year-old woman visited our clinic with a 10-month history of recurrent pruritic erythematous eruptions on the lower lip, forearms, elbows, and buttocks bilaterally, with monthly fluctuating clinical symptoms. At each episode, approximately less than 10 percent of the body surface area was involved by skin lesions. Most of the skin lesions recurred at the same sites, but each month some lesions appeared at new sites. The patient did not have a history of taking any medication. Skin lesions always recurred 3-4 days before menstruation and resolved 1–2 days after the end of menstrual bleeding, leaving post inflammatory hyperpigmentation.

At her first visit, lesions appeared as sharply

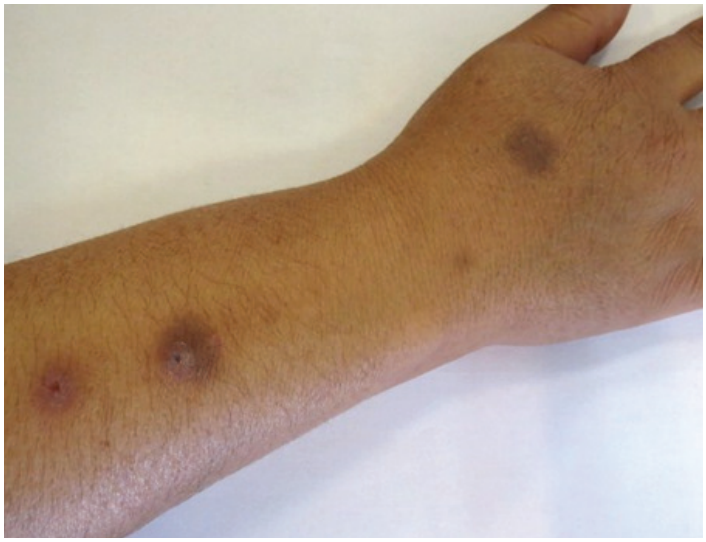

Figure 1. *Recurrent sharply demarcated round plaques with violaceous erythema on forearm.*

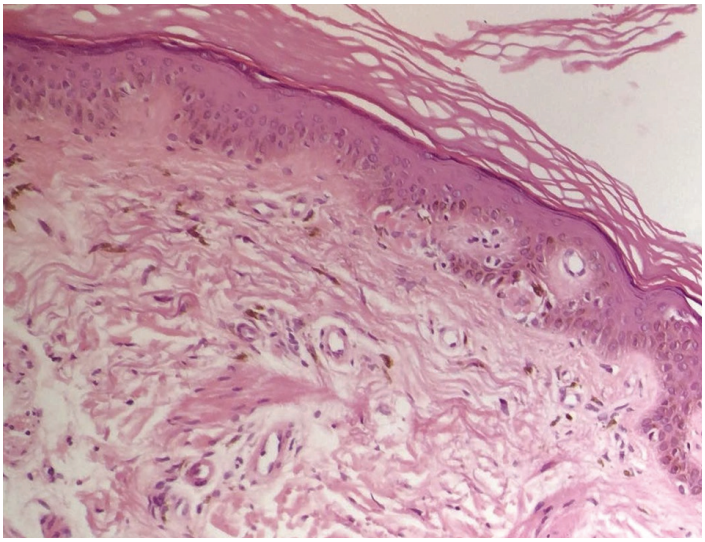

Figure 2. *Histological examination of the patch shows basket weave stratum corneum, basal cell vacuolar degeneration with Civatte bodies. Mild superficial perivascular lymphocytic infiltration and prominent pigment incontinence are noted in the dermis. H&E, 100x.*

demarcated round patches with a dusky brown color (**Figure 1**).

Histological study revealed basket weave stratum corneum, vacuolar degeneration of the basal layer, and Civatte bodies. Mild superficial perivascular lymphocytic infiltration and marked pigment incontinence were noted in the dermis (**Figure 2**).

APD was suspected based on the history and clinical features. Progesterone (10 mg) was injected intradermally into normal skin of the left arm and saline solution was injected into the right arm as a negative control [2]. After 36 hours, pruritus and erythema developed only at the site of the progesterone injection. After one week, a violaceous plaque developed at the site of the challenge test. The progesterone challenge test confirmed APD and according to clinicopathologic features and the relationship between eruption and menstruation, fixed drug eruption-like APD was considered as diagnosis. She was treated with oral prednisolone (30 mg daily) before menstruation. Although lesions recurred, their severity were significantly reduced.

Case Discussion

Classically, autoimmune progesterone dermatitis presents as cyclic flares of dermatitis that correspond to an increased level of progesterone in the luteal phase of the menstrual cycle. Patients present with a wide spectrum of cutaneous manifestations. Most patients have urticaria, but the morphology can vary; lesions may appear eczematous, papulovesicular, erythema multiforme-like, purpuric, and petechial; stomatitis has also been reported [1]. There are a few case reports of unusual presentations of autoimmune progesterone dermatitis. A woman with endometriosis presented with angioedema/urticaria over 20 years that had not been diagnosed owing to the variable timings of skin manifestations and menses [4]. APD occasionally presents as anaphylaxis [1, 5].

Presentation of this condition as a fixed drug eruption is very rare. According to our search, only one case of APD presenting as fixed drug eruption has been reported in the literature [2].

In many cases, the main hallmark for diagnosis of autoimmune progesterone dermatitis was a history of luteal phase skin and oral lesions, which recurred on a cyclic basis. Such a diagnosis was made even though the patients had negative test results for progesterone. Patients' age at onset ranged from 16 to 48 years and most patients were in the third decade of life [6]. In many cases the trigger mechanism for formation of circulating antibodies against endogenous progesterone remained undetermined. One possibility is a cross-reaction between endogenous progesterone and circulating antibodies formed against other potential antigens such as a viral infection, medication, or a particular food product [4].

For diagnosis of autoimmune progesterone dermatitis presenting as fixed drug eruption, a careful review of cyclically used medication is necessary, especially non-steroidal anti-inflammatory drugs, in order to rule out drug induced fixed drug eruptions. Autoimmune progesterone dermatitis is usually resistant to conventional therapies such as antihistamines. The use of systemic glucocorticoids, usually at high dose, has been reported to control cutaneous lesions of APD in some studies but not in others [7]. Treatment with GnRH agonists has been reported successful. Another therapeutic agent used to suppress ovulation and improve symptoms is tamoxifen [7]. Bilateral oophorectomy has been recommended for patients experiencing unremitting

symptoms after medical management [7].

Conclusion

The intent of reporting this case was to emphasize the importance of considering APD in the differential diagnosis of unexplained or intractable skin eruptions, including those presenting as a fixed drug eruption, particularly in cases in which there is cyclical variation.

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