# Segmental Darier's disease postpartum and following tubal ligation

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SUMMARY

**Segmental Darier's disease is a rare clinical variant of autosomal dominant Darier's disease (keratosis follicularis) exhibiting eruptions in a unilateral arrangement following the lines of Blaschko. It occurs in approximately 10% of patients with Darier's disease. We report two cases of type 1 segmental Darier's disease that appeared a few months after childbirth; in one case, recurrence of the disease occurred after tubal ligation.**

KEY WORDS

**Darier's disease, segmental Darier's disease, keratosis follicularis**

## Introduction

Segmental Darier's disease is a rare clinical variant of autosomal dominant Darier's disease (keratosis follicularis) exhibiting eruptions in a unilateral arrangement following the lines of Blaschko. It occurs in approximately 10% of patients with Darier's disease (1). The localized, type 1 segmental disease is distinguished from type 2 disease by segmental lesions that are more pronounced and superimposed on the original, symmetrical involvement of Darier's disease.

We report two cases of type 1 segmental Darier's disease that appeared a few months after childbirth; in one case, recurrence of the disease occurred after tubal ligation.

## Case 1

A 39-year-old woman had a 2-month history of hyperkeratotic papules in a Blaschkoid pattern on the left abdomen and the lateral aspect of the left thigh (Fig. 1). The rash appeared 7 months after undergoing tubal ligation. A skin biopsy showing acantholytic dyskeratosis confirmed the diagnosis of segmental Darier's disease (not shown).

She recalled having had exactly the same rash in the same location 5 years ago. That time it appeared about 5 months after giving birth to her fourth child and regressed within 4 months, as her medical records confirmed. Interestingly, the skin disease did not occur in previous postpartum intervals.

We treated her with topical mometasone furoate 0.1% ointment alternating with tretinoin 0.05% cream. The cutaneous lesions gradually resolved and she has been in remission ever since.

## Case 2

A 31-year-old woman had a history of herpes simplex encephalitis, autoimmune thyroiditis, and chronic hepatopathy after prior EBV and CMV infection. Since giving birth to her first child she has suffered

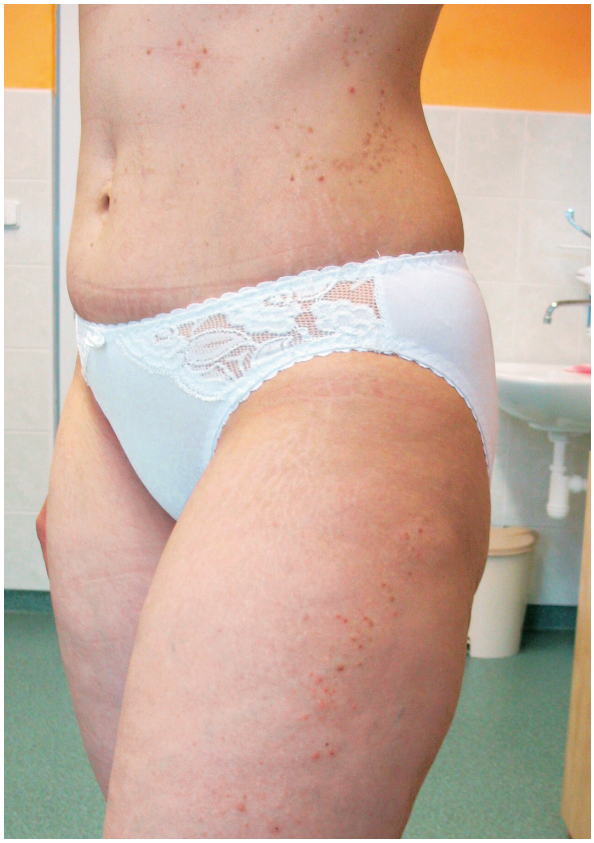

**Figure 1. Hyperkeratotic and hyperpigmented papular lesions in a Blaschkoid pattern on the left abdomen and on the lateral aspect of the left thigh.**

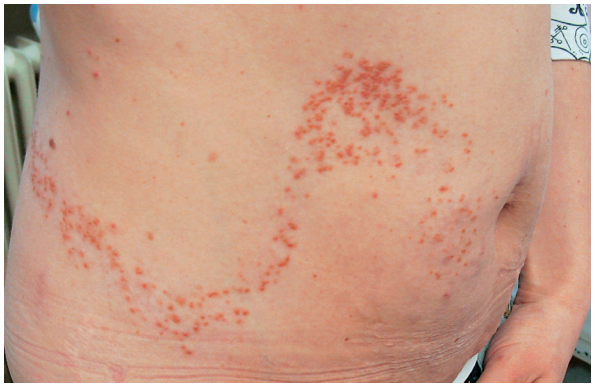

**Figure 2a. Bizarre configuration of grouped hyperpigmented papules on the right abdomen.**

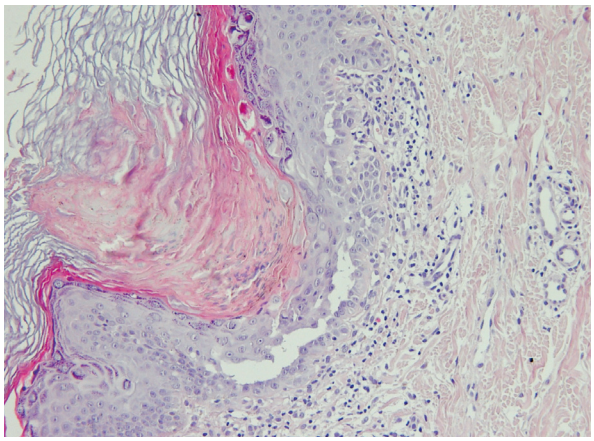

**Figure 2b. Focal acantholytic dyskeratosis with prominent dyskeratosis (hematoxylin-eosin, original magnification ×200).**

from intermittent headaches and has been taking antidepressants.

Her skin disease appeared 4 months after giving birth to her second child. On examination, a hyperpigmented and hyperkeratotic papular rash was found in a segmental arrangement on the right abdomen (Fig. 2a), flank, and right thigh. A skin biopsy was consistent with the diagnosis of segmental Darier's disease, as shown in Figure 2b.

Periods of improvement have been alternating with exacerbations. Patients with Darier's disease have an increased susceptibility to neuropsychiatric disorders (1). This patient, however, experienced this prior the onset of the disease. In both patients, the family history was negative and no contraceptives were taken.

## *Discussion*

Darier's disease is caused by mutations in the ATP2A2 gene, located on chromosome 12q23-24, encoding the sarco-endoplasmic reticulum $Ca^{2+}$-ATPase type 2 isoform (SERCA2), which plays an important role in intracellular $Ca^{2+}$ signaling. Postzygotic mosaicism has been proposed to underlie the development of segmental Darier's disease (2).

A recent study demonstrated an altered epidermal calcium gradient and abnormal ATP receptor expression in the epidermis of Darier's disease. It was speculated that this might promote a defect in differentiation, desmosomal disruption, and suprabasal acantholysis. Abnormal transition of keratin 14 to keratin 10 was demonstrated by the presence of suprabasal keratinocytes expressing both keratins; however, involucrin and transglutaminase I were normally expressed in the granular layer (3). Estrogen was shown to promote the formation of the epidermal $Ca^{2+}$ gradient (4).

The onset of Darier's disease at puberty and changes in disease activity during menstruation, pregnancy, and menopause support the hypothesis that sex hormones may play a role in disease pathogenesis. Im-

provement of women's conditions with the use of oral contraceptives has been reported. The responsible hormone, however, has yet to be identified. Involvement of a rise in estrogens, progesterone, or follicle-stimulating hormone has been speculated (5). Laparoscopic tubal ligation increases follicular phase estradiol levels, which peak 3 months after the procedure and decline to the presterilization level by 12 months (6).

To our knowledge, the onset of segmental Darier's disease following childbirth or tubal ligation has not been reported yet. Although there was a gap of several months, it is not known whether their hormonal status during the postpartum period and after tubal ligation could have predisposed our patients to develop this rare disorder.

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