



Pruritic rash on chest and back

Was a recent change in diet to blame for this patient's rash?

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A **26-YEAR-OLD WOMAN** presented to our clinic with pruritic, hyperpigmented, symmetric edematous plaques on her upper flank, chest, and lower back (FIGURE) 3 weeks after starting a strict ketogenic (high fat/low carbohydrate) diet for postpartum weight loss. The patient

was an otherwise healthy stay-at-home mother with an unremarkable medical history.

- WHAT IS YOUR DIAGNOSIS?
- HOW WOULD YOU TREAT THIS PATIENT?

FIGURE

Edematous, reticulated rash on upper flank and back



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➤ The characteristic presentation of prurigo pigmentosa has led to the alternative name of the “keto rash” in online nutritional forums.

**Diagnosis:
Prurigo pigmentosa**

We recognized that this was a case of prurigo pigmentosa based on the characteristic pruritic rash that had developed after the patient started a strict ketogenic diet.

■ **Prurigo pigmentosa** is a benign, pruritic rash that most commonly presents with erythematous or hyperpigmented, symmetrically distributed urticarial papules and plaques on the chest and back. Females represent approximately 70% of cases with a predominant age range of 11 to 30.¹

While the pathophysiology remains unknown, the rash most often is reported in association with ketogenic diets.¹ Despite occurring in only a fraction of patients on the ketogenic diet, the characteristic presentation has led to the alternative name of the “keto rash” in online nutritional forums and blogs.

Although prurigo pigmentosa is relatively uncommon (with an unknown incidence), primary care physicians may begin to encounter the characteristic rash more frequently, given the number of articles over the past 5 years in the primary care and nutritional literature highlighting the diet’s health benefits.² The ketogenic diet is a high-fat, low-carbohydrate diet with preliminary evidence of improved weight loss, cardiovascular health, and glycemic control suggested by a meta-analysis of 13 randomized controlled trials.³ Additionally, the popular press and general public’s rising interest are likely to increase the number of patients on this diet.

A clinical diagnosis

The diagnosis is made clinically, so the appearance of a symmetric pruritic, hyperpigmented rash on the chest and back should prompt the physician to ask about any recent changes in diet. Laboratory analysis is unnecessary, as a complete blood count, basic metabolic panel, and liver function panel are almost always normal. Urinary ketones are present in only 30% to 50% of patients; there is, however, an absence of blood ketones.^{1,4}

Other conditions can mimic prurigo pigmentosa

Urticaria presents as individual lesions that

often have a pale center. The lesions may occur anywhere on the body and generally last less than 24 hours. History may reveal a trigger including drugs, infection, food, or emotional stress in up to 50% of cases.⁵

■ **Irritant contact dermatitis** often is associated with a stinging or burning sensation. Irritant and allergic contact dermatitis may have a geometric, or “outside job,” distribution suggestive of external contact, potentially with plants, alkalis, acids, or solvents.⁵

■ **Confluent and reticulated papillomatosis** is a rare asymptomatic dermatosis of unknown etiology that presents as hyperpigmented papules on the upper trunk, neck, and axillae. Most patients lack associated pruritis which is in contrast to prurigo pigmentosa.⁶

■ **Pityriasis rosea** is a viral exanthem that may be associated with constitutional symptoms and often presents initially with a herald patch progressing to a classic “Christmas tree” distribution with a fine collarette of scale. It often is asymptomatic, although some cases may be pruritic.⁵

Treatment focuses on dietary modification

Primary treatment includes resumption of a normal diet. This often leads to rapid resolution of pruritis. Residual hyperpigmentation may take months to fade.

Pharmaceutical intervention may be necessary

If additional treatment is required, minocycline 100 to 200 mg/d has been reported most effective, likely due to its anti-inflammatory properties.^{1,4} Topical corticosteroids and oral antihistamines provide symptomatic relief in some patients.^{1,4}

■ **Our patient** had resolution of the pruritis and urticarial lesions within 2 days of resuming a normal diet; however, residual asymptomatic hyperpigmentation persisted. A retreat of the ketogenic diet initiated a flare of the rash in the same distribution. It rapidly resolved with carbohydrate intake. **JFP**

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