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Case Report

Polymorphic Eruption of Pregnancy in a Female Patient, First-Time Mother, and Without Polymorphism in Cutaneous Lesions: A Case Report

Erupção polimórfica específica da gestação em paciente com gravidez única de sexo feminino e sem polimorfismo em lesões cutâneas: relato de caso

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Abstract
Polymorphic eruption of pregnancy is a specific dermatosis of pregnancy with an unknown, mechanically induced etiology. It is more observed in multiparous women,

first-time mother, and during the third trimester of pregnancy. Polymorphic eruption of pregnancy presents a broad range of differential diagnoses among gestational dermatoses, making clinical knowledge essential for proper investigation and timely diagnosis. This study reports a case involving a 34-week pregnant woman, first-time mother, which presents certain deviations from the classic epidemiological profile of the disease.

Resumo

A erupção polimórfica específica da gravidez é uma dermatose específica da gestação de desconhecida etiologia, mecanicamente induzida, mais comum em multíparas, primigestas e no terceiro trimestre da gestação. Apresenta ampla gama de diagnósticos diferenciais de dermatoses gestacionais, sendo necessário seu conhecimento clínico para correta investigação e diagnóstico oportuno. O presente trabalho é um relato de caso de gestante primigesta, de 34 semanas, com feto feminino, o que apresenta algumas diferenças na clássica epidemiologia da doença.

Introduction

Polymorphic eruption of pregnancy (PUPP) is a specific dermatosis of pregnancy with unknown etiology. It presents with variable clinical manifestations and has a favorable prognosis, typically resolving spontaneously in the postpartum period within an average of 7–10 days, without causing fetal complications [1,2]

It is the most prevalent specific dermatosis of pregnancy, affecting approximately 0.5% of women first-time mother, up to 16% of twin pregnancies, and up to 17% of triplet pregnancies [1,3]

ts occurrence is more frequent in first-time mother particularly during the third trimester [1,3,4]

Regarding fetal sex, it is twice as common in pregnancies with male fetuses compared to female fetuses. There is no association between the condition and a personal or family history of PUPPP or autoimmune diseases.

Case Description

We report the case of a 31-year-old female patient, first-time mother, at 34 weeks of gestation (female fetus), referred to secondary outpatient dermatologic care due to cutaneous complaints identified during a routine prenatal obstetric consultation in January 2024. The patient reported the onset of intense pruritus, most pronounced in the area of abdominal striae gravidarum, with progressive involvement of the lower (LL) and upper limbs (UL), persisting for 15 days without any relieving or aggravating factors. She reported prior use of loratadine, with no symptomatic improvement, and denied any similar previous episodes. Her past medical history was notable for gestational diabetes mellitus, for which she was continuously using folic acid and ferrous sulfate. She denied allergies, as well as any personal or family history of dermatoses, atopy, or skin cancer. The patient was a former smoker.

Physical examination revealed erythematous and widened striae on the abdomen and the proximal third of both thighs, along with multiple erythematous papules distributed across the entirety of the lower limbs and forearms, some of which coalesced into plaques **(FIG1).**

Treatment consisted of topical mometasone mixed in equal parts with a moisturizing cream, along with oral loratadine once daily for symptomatic relief. The patient was educated about the association of the dermatosis with pregnancy, its benign nature, favorable prognosis, and typical spontaneous resolution after delivery. Clinical follow-up was advised, with a return visit scheduled in 15 days or earlier if needed.

At follow-up, at 36 weeks of gestation, the patient reported partial improvement, with persistent pruritus on the abdomen and thighs. She denied any changes in the lesion pattern, development of vesiculobullous lesions, or generalized eczema **(FIG2**). Continuation of the topical regimen and oral loratadine was recommended. The patient experienced spontaneous resolution postpartum and was advised to discontinue treatment after symptomatic improvement. She did not return for further dermatological or obstetric follow-up.

Figures 1 and 2

Discussion

PUPPP is an inflammatory condition of uncertain etiology. However, its onset has been associated with abdominal distension, hormonal changes—especially elevated progesterone levels—placental factors, and fetal DNA. Studies have shown that 90% of cases result from damage to connective tissue within striae gravidarum, exposing collagen antigens that trigger an allergic response and the development of eruptions over the striae [1,2]

The pathophysiology is particularly associated with abdominal distension, such that women with excessive gestational weight gain have a higher incidence of the disease [1,2,3]

Furthermore, this mechanism does not appear to be associated with any specific HLA subtype.

Another proposed trigger for PUPPP is peripheral chimerism, which results from contact with fetal tissue, particularly in the third trimester. This exposure may lead to collagen damage and vascular alterations, potentially triggering an immune response [4]

Although the pathophysiology of PUPPP remains unclear, studies have shown that it is not an autoimmune disorder and is not associated with a specific human leukocyte antigen (HLA). The mechanism through which this condition becomes systemic is also unknown, but it is hypothesized to involve cross-reactivity between collagen and intact skin, as abdominal distension alone does not fully explain the disease—especially since unaffected, non-distended areas can also be involved [1,4,5]

Lesions typically appear in the third trimester, particularly after the 36th week of gestation and even during the immediate postpartum period [3,4,6,7]

This case involved an earlier presentation than is typical in the literature, occurring at 34 weeks. In terms of fetal sex, the condition is twice as common in pregnancies with male fetuses, which differs from the case presented here.

On physical examination, PUPPP initially presents as small, erythematous, edematous, and pruritic papules, beginning in the striae gravidarum and sparing the

periumbilical region, with no mucosal involvement. Lesions may coalesce into urticarial plaques with a pale halo. Over time, the eruption may extend to the trunk and limbs, and rarely to the face and distal extremities [2,3]

In the present case, the patient's lesions and their progression matched the classic clinical presentation. As the disease progresses, most cases develop polymorphis [1,2] including generalized erythema, target lesions, small vesicles (up to 2 mm), and eczematous patches [1,2,8,9]

In this case, however, no lesion polymorphism was observed; the condition remained limited to erythematous, pruritic papules and plaques—unlike the majority of cases in the literature. Only a few cases report large bullous lesions [2,10,11]

No post-inflammatory pigmentation or scarring occurs following spontaneous resolution.

Diagnosis is clinical, as histological and immunofluorescence findings are nonspecific, and laboratory tests remain within normal limits [1,2]

Biopsy may be necessary in selected cases to exclude other gestational dermatoses [9]

In this case, the classic presentation made biopsy unnecessary. Differential diagnoses include atopic eruption of pregnancy, intrahepatic cholestasis of pregnancy, and gestational pemphigoid (also known as *herpes gestationis*) [1,2,9,11]

The most relevant differential diagnosis is gestational pemphigoid (PG), due to its clinical similarity. Both conditions present with erythematous lesions that are nearly indistinguishable, except for PG's typical periumbilical involvement. Despite the clinical resemblance, their progression and outcomes differ. PG usually arises in the second or third trimester and is a true autoimmune disease involving autoantibodies against BP180, a placental antigen. PG is associated with fetal complications such as prematurity and intrauterine growth restriction. Additionally, PG tends to recur, often earlier and more severely in subsequent pregnancies—unlike PUPPP, where recurrence is rare. Definitive differentiation between these conditions is achieved by direct immunofluorescence, which in PG reveals linear C3 and IgG deposits [2,9]

Among other differentials, atopic eruption of pregnancy is the most common dermatosis during pregnancy. It typically begins in the first or second trimester and occurs in 20% of patients with a history of atopic dermatitis—or, more commonly, as a first-time idiopathic presentation [2,9]

Eczema tends to involve a personal or family history and manifests as pruritic erythematous lesions in flexural areas, differing from the case described. Other possibilities include drug eruptions, urticaria, and viral or bacterial infections.

PUPPP is a benign condition with a good prognosis, resolving spontaneously in most cases and rarely recurring in subsequent pregnancies—possibly due to the development of immunological tolerance. When recurrence occurs (in approximately 15% of cases), it tends to be milder and less symptomatic [2,9]

The condition does not cause fetal morbidity, and neonatal skin is typically unaffected [1,2,4,9]

Therefore, PUPPP is not a formal indication for preterm delivery [1,5]

Due to its self-limited nature, treatment is symptomatic. In the present case, the patient had previously used loratadine with no relief. This may be attributed to the lower potency of second-generation antihistamines, despite their better safety profile, and to the higher intensity of pruritus at the time. Studies have shown better efficacy with first-generation antihistamines, though these cross the blood-brain barrier and often cause drowsiness [2,9]

Consequently, topical mometasone was prescribed with a moisturizing cream to enhance the therapeutic response, as corticosteroids are known to improve immune control. Other symptomatic options include topical corticosteroids and emollients. In refractory or more severe cases, systemic prednisone may be used, with gradual tapering following clinical improvement [1,2]

This study aims to inform the medical and academic community about a common complaint that presents a wide range of dermatological differential diagnoses in a pregnant patient, who is often followed by physicians from other specialties not related to dermatology, from prenatal care to delivery. Awareness of the existence of such a condition allows for the establishment of a diagnostic hypothesis and reduces patient suffering. The main limitation of this study is the fact that only one patient was included in the report.

Conclusion

This case report presents features that diverge from the most commonly described epidemiological profile of PUPPP, including a female fetus, earlier-than-usual gestational age at onset, first-time mother, and absence of the typical polymorphic nature of the lesions. Nonetheless, the clinical presentation is consistent with the classical description in the literature and reinforces the primarily clinical nature of the diagnosis, as well as the favorable response to symptomatic treatment in most cases.

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