Pityriasis Rosea like Eruption Possibly Due to Anti-rabies Vaccine Administration in a Young Man: A Rare Case Report

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Abstract

Pityriasis rosea (PR) is an acute, self-limited skin disease thought to be a viral exanthem caused by reactivation of HHV-7 and HHV-6 viruses; although, numerous studies have explored various pathogens. Several reports associate PR with drugs and vaccines. We report a typical case of PR in a 26-year-old male following intradermal anti-rabies vaccine (ARV). There are reports of vaccine-induced pityriasis like eruptions due to various vaccine. However, PR-like eruptions due to ARV is rarely reported. This case represents a new side effect of an already existing vaccine and throws light on varied etiologies of vaccine-induced PR.

Keywords: Adverse reaction, anti-rabies vaccine, pityriasis rosea

Introduction

Pityriasis rosea (PR) is a common acute self-limited skin eruption that tends to favor otherwise healthy adolescents and young adults. It is a papulosquamous disorder characterized by a distinctive skin eruption and associated with minimal constitutional symptoms and is normally lasting for about 4–10 weeks. There are several reports associating PR and PR-like eruptions with drugs and vaccines. We report a case of PR in a 26-year-old male following intradermal anti-rabies vaccine (ARV). This case represents a new side effect of an already existing vaccine and throws light on varied etiologies of vaccine-induced PR.

Case Report

A 26-year-old male patient presented to our outpatient dermatology department with pruritic papulosquamous rash on trunk and proximal extremities for the past 3 days. He had a dog bite 10 days back for which he was administered intradermal ARV from (ARV clinic) of our Institute (verocell vaccine schedule: Day 0, 3, 7, and 28). He received two more doses of ARV on day 3 and 7. On further enquiry, the patient said that he had first developed a large patch on the left arm [Figure 1] 24 h after the third dose (day 7 dose) and the remaining patches gradually appeared. He was otherwise healthy and had no accompanying fever, cough, or coryza. There was no history of any drug intake in the recent past. Patient did not have a history of similar reactions in the past.

On examination, there were multiple oval to round papules and plaques ranging in size from 0.5 to 3 cm, symmetrically distributed; predominantly on abdomen, arms and sparingly involving the lower back [Figure 2]. The surface of the plaques was topped with fine semi-adherent scaling in the center with peripheral collarette of scales. Auspitz’s sign was negative. Mucosal and nail examination revealed no abnormality.

Differential diagnosis of PR, psoriasis, secondary syphilis, drug rash was kept and investigations were sent. Venereal disease research laboratory and enzyme-linked immunoabsorbent assay testing for HIV were negative. His complete blood counts and liver and renal function tests were within normal limits. Histopathological examination of the section from the representative lesion revealed focal parakeratosis, focal mild spongiosis [Figure 3] of the epidermis associated with exocytosis of lymphocytes. Dermis showed mild perivascular...
mononuclear inflammatory infiltrate with extravasation of red blood cell in papillary dermis [Figure 4].

The histopathologic and clinical features were consistent with PR and final diagnosis of PR like eruption was made. Patient showed symptomatic relief with oral levocetrizine 5 mg once daily and with topical calamine lotion. He was advised to complete his vaccination due to the benign nature of PR-like eruption as compared to life-threatening rabies disease. The lesions resolved in 2 weeks after the last dose of rabies vaccine.

**DISCUSSION**

PR is an acute, self-limited skin disease which usually begins as an oval, salmon-colored, scaly herald patch followed by a secondary phase manifesting as similar patches distributed symmetrically on the trunk and limbs in a typical Christmas tree pattern.[1]

Numerous studies over the past 50 years have explored various pathogens. There is a scientific evidence that PR is a viral exanthem associated with reactivation of either HHV-7 or HHV-6 virus.[3]

There are several reports associating PR and PR like eruptions with drugs and vaccines. The rashes caused by arsenic, bismuth, gold, lithium, and methopromazine may have been atypical lichenoid reactions.[4] Other drugs implicated include metronidazole, barbiturates, clonidine, captopril, ketotifen, clozapine, bupropion, adalimumab, and imatinib mesylate.[5] In some reports, the resemblance of the eruption to PR has not been close, and in others coincidence might explain the association. Thus, while drug eruptions may somewhat resemble the condition, there is no convincing evidence that typical PR can be caused by drugs.[4]

PR and PR-like eruptions have been rarely reported after vaccination against yellow fever, influenza, streptococcus pneumonia, hepatitis B virus, tuberculosis, human papilloma virus.[6-9] However, not reported following ARV to the best of our knowledge. When associated with drugs, the eruption may present with smaller number of itchy larger scaly lesions that do not have the classic Christmas tree distribution and may have bullous or purpuric lesions. Drug induced PR is
more common in older individuals and usually shows the absence of initial single herald patch, is more pruritic and is said to be more bright or violaceous or red. Histologically, it shows more infiltrate of eosinophils in the skin or blood.[10] The lesions may also have a protracted course and evolve rarely into lichenoid dermatitis.[9] In our patient, rash was pruritic, but numerous eosinophils were not seen. Hence, it is difficult to know whether PR-like rash was due to ARV vaccine as a drug or vaccine virus was the triggering or etiological factor in the causation of the disease as in conventional cases of PR.

According to the National Guidelines for Rabies Prophylaxis, the vaccine virus is the triggering or etiological factor in the causation of the disease as in conventional cases of PR. There have been no reports of ARV associated with PR in the published literature to the best of our knowledge. We report this rare case of PR-like eruptions following ARV as a novel and possible association with the vaccine.

Conflicts of interest

There are no conflicts of interest.

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