

ATYPICAL PITYRIASIS ROSEA: A REVIEW OF THE LITERATUREJi Quan Song^{1*} and Sharon Mariam Chandy²^{1*}Head of Department of Dermatology and Venereology, Zhongnan Hospital of Wuhan University, Wuchang, Wuhan, Hubei 430071, P.R. China.²Currently Dermatology and Venereology Resident at Zhongnan Hospital of Wuhan.***Corresponding Author: Ji Quan Song**

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ABSTRACT

Pityriasis rosea (PR) is a common, self-limiting skin condition mainly seen in teenagers and young adults. It is characterized by the distinctive 'Herald Patch' or 'Mother Patch' followed by secondary smaller lesions. Reactivation of HHV6 and HHV 7 have been most suggested as causative agents. For most dermatologists, making a clear diagnosis of PR maybe a piece of cake. However, the challenge lies in not identifying what is most common but in the more atypical manifestations of this cutaneous eruption. The differential diagnoses for each and every type is exhausting and so a lesional biopsy can help to rule out most of them, if applicable. Since this disorder generally resolves in 2- 12 weeks, counselling of the patient is advised. Emollients and moisturizers can be used to alleviate pruritus. Acyclovir is the most effective treatment option, being effective as early as in the first week itself. Topical corticosteroids are to be used sparingly for severe pruritus only. By proper identification of the various forms of this papulosquamous disorder, patients can be treated properly without any misdiagnosis and unnecessary treatment interventions. This article is to review the current and critical information on pityriasis rosea and its atypical manifestations.

KEYWORDS: Pityriasis rosea; atypical; diagnosis; pityriasis rosea-like eruption; variants.**INTRODUCTION**

Pityriasis rosea is a common, self-limited, papulosquamous skin disorder mainly occurring in children and young adults. First described in 1860 by French physician Camille Melchior Gilbert, the benign rash usually lasts for 6- 8 weeks and is found primarily over the trunk and limbs.

**Fig. 1: Herald patch.**

It presents initially as a single, salmon-pink, oval lesion of 2-10 cm, with a typical collarette of scales at its margin and this usually heralds the widespread eruption as seen in PR and hence the term, 'herald patch'(Fig.1). As it is understood from prior literature, being a characteristic feature of PR, it is however, not present in all patients^[1] but roughly seen in about 80%.

Other diseases that mimic the presence of a single HP include secondary syphilis^[1] and tinea corporis and hence need to be distinguished from. The secondary lesions that follow after 1- 2 weeks manifest in crops along Langer's lines of cleavage, giving another characteristic feature of the 'fir tree appearance'. Multiple, smaller, oval, erythematous squamous lesions are seen over the trunk and proximal extremities which typically lasts five weeks (Fig.2). Resolution is seen within 8 weeks in about 80% of patients and this may last even up to 5 months.^[2]



Fig. 2: Typical smaller lesions with scaling over the forearm and trunk.

The eruption is usually preceded by symptoms such as sore throat, gastrointestinal disturbance, fever, and/or arthralgia. Some studies^[3] have showed that the approximate incidence of PR is 0.5–2%, with slight predisposition to females.

Over the years, typical and atypical forms of PR have manifested and though the typical forms are straightforward, the latter are what poses a challenge for most physicians. The incidence of atypical PR^[11] is 20%. This literature review is aimed at reviewing the current knowledge on the apt diagnosis of atypical forms and its treatment.

ETIOLOGY

There has been a lot of inconclusive evidence in finding the exact cause of PR. Various factors like occurrence of the disorder in clusters,^[4] the presence of a prodromal illness prior to the rash and seasonal variation have suggested an infectious etiology. Infectious pathogens like streptococcus have been linked to PR due to the history of prodromal illness occurring in several patients. But, inconsistent data findings^[5-6] may overrule the possibility. Several studies^[7-11] indicate that PR can arguably result from a reactivation of HHV6 and HHV7. These studies demonstrate that patients with PR may be suffering due to a reactivation of the virus and not due to a primary infection. However, more substantial evidence is required on a larger scale to shed light on this grey area.

Besides infectious causes, certain drugs may also cause PR-like eruptions like barbiturates, clozapine, isotretinoin, omeprazole and terbinafine.^[12] These eruptions usually last longer than 2 months and lack the characteristic features like the Herald Patch along with intense pruritus. These may point in the direction of a history of drug intake and may require further discontinuation of the causative drug if possible.

TYPES

Though pityriasis rosea was first described in 1860 by Gilbert, it was earlier identified in 1798 by British physician Robert Willan as ‘roseola annulata’. Since then, besides the commonly diagnosed and typical presentation of PR, several atypical forms of the cutaneous eruption have been described. These prove harder to diagnose leading to unnecessary treatment interventions for the patient.

According to one classification^[13] proposed in 2005, atypical PR differs from classical PR in terms of morphology and/or size of lesions, number, site, severity of symptoms, and clinical course.

- a) Morphology – vesicular, purpuric, hemorrhagic, urticarial
- b) Size – PR gigantea of Darier, 1-2mm small papules
- c) Distribution – PR inversus, PR limb-girdle type, unilateral
- d) Number - Pityriasis circinata et marginata
- e) Site – face, hands, oral cavity
- f) Severity – PR irritate
- g) Course – relapse 2.8%, recurrent cases 1.8%

In 2016, another classification based on the differences in pathogenesis, clinical features, and course of the disease was devised.^[14] This results in 6 types of PR forms including the classic typical presentation.

- a) Classic
- b) Relapsing
- c) Persistent
- d) Pediatric
- e) Pregnancy
- f) PR-like-eruption.

4. Atypical Presentations

- 1) **Purpuric PR:** these lesions present as erythematous purpuric macules found over the trunk and extremities. The oral mucosa is usually involved.

Differential diagnoses may include hematological malignancies, vasculitis, pigmented purpuric dermatoses^[15,17] and hence proper evaluation needs to be done with a lesional biopsy.

- 2) **Papular PR:** this type is commonly seen in children, pregnant woman and Afro-Caribbeans.^[16] They present with generalized papules 1-3mm in diameter along with the typical erythematous scaly lesions (Fig.3). Sometimes even the oral mucosa may be involved. This type of PR may co-exist with another atypical variant, i.e. Inverse PR. Inverse papular PR may mimic papular acrodermatitis of childhood (Gianotti-Crosti syndrome).^[23]



Fig. 3: Papular Pityriasis rosea over the lower trunk.

Erythema Multiforme like PR: one case report^[16] of a 16 year old girl who had presented with generalized eruptions of 3 weeks duration revealed that both papular and EM like PR co-existed simultaneously. According to the histology report, the EM-like plaque lacked the characteristic features such as vacuolar degeneration of the basal layer or satellite cell necrosis.

- 3) **Urticarial PR:** such patients present with palpable wheal like lesions with peripheral collarette scaling.^[18] The lesions are also seen following the lines of skin cleavage. There is history of pruritus with or without a mild prodromal illness such as sore throat and malaise. This type of PR is not to be confused with urticarial vasculitis, annular erythema and sub-acute cutaneous lupus erythematosus and hence a lesional biopsy should be taken for a clear diagnosis.^[17]
- 4) **Recurrent and persistent:** this was observed in a 24 year old man who presented with an 11-month history of three recurrent and persistent episodes of PR associated with oral ulcers.^[19] The reason for relapse could be directed towards the reactivation of HHV6 and HHV7. The presence of a Herald Patch is not obligatory in these cases and distribution is not found along typical lines. Hence, proper history of the patient is to be recorded. Also, even though several studies^[20,21] have recorded the occurrence of PR in rainy seasons, relapse cases show that PR can be independent of it.
- 5) **Unilateral PR:** this is a rare variant of PR. One case report was of an 18 year old boy who presented with unilateral, annular erythematous plaques with peripheral collarette scaling of over 3 weeks duration.^[13] There was no history of any prodromal symptoms and lesions lasted for 4 months. Another case report was of a 26 year old woman with several asymptomatic, erythematous and scaly plaques on the right side of the trunk, who had a recent history of a respiratory infection.^[24] Along with clinical findings, a histo-pathological examination is helpful for identifying such cases.
- 6) **Limb girdle PR/PR of Vidal (PRV):** another rare variant seen mainly in adults includes large lesions limited to shoulders and inguinal region. They may also have a longer duration.^[17]
- 7) **Inverse PR:** here, the lesions are predominantly found in areas not commonly seen in PR such as the acral and flexural areas involving axilla, groin, and face. The trunk is usually spared.
- 8) **Vesicular:** another variant seen predominantly in infants and children. They may present initially as a generalized vesicular eruption followed by typical papulosquamous lesions. It is usually associated with pruritus and may affect the head, palms, and soles. Differential diagnosis include varicella and dyshidrosis.^[25]
- 9) **Follicular:** a case report of a 9 year old boy shows that there was an initial presence of pruritic scaly plaques on the thigh, trunk and groin regions followed by follicular secondary lesions.^[26] It was of annular morphology with central clearing and peripheral collarette scaling at places.
- 10) **Gigantea PR of Darier:** these are very rare and are associated with large size plaques ranging from 5-7cm in diameter.^[27]
- 11) **Pityriasis Circinata et Marginata of Vidal:** this may include few large patches localized to the axillae or inguinal creases, typically in adults lasting several months to years. However, a 10 year old girl presented with multiple coalescing herald patches and secondary lesions over the abdomen.^[28] The clinical picture suggested that of PR. Due to the number and appearance of the lesions, the authors suggested it to be that of Pityriasis Circinata et Marginata of Vidal.
- 12) **PR in pregnancy:** this type has to be given special consideration since pregnant women have a higher chance of developing PR than others (18% as compared to 3% in general population).^[30] The

teratogenic effects this cutaneous disorder has on fetal development may not be fully aware due to scarcity of collected evidence. In fact, pregnant women must be highly cautious during their first 15 gestational weeks and avoid any contact with patients suffering from PR.^[31] This may be due to viral reactivation of HHV 6 which is most likely to result in abortions, premature births or even fetal demise during pregnancy.^[32]

- 13) Pediatric PR:** it is highly uncommon to find PR in children less than 10 years of age. It has been reported^[33] to be of a higher incidence (26%) mainly among dark skinned children as compared to Caucasian children (8%). Children under the age of 3 years usually acquire the primary HHV-6/7 and hence harbor a greater viral load which then results in reactivation. Children also present with similar features like in adults. Herald patch is seen in about 50% of children who mainly present with papular type eruptions. However, exanthema duration is shorter (16 days) as compared to adults (45 days).^[34]

DIAGNOSIS

A proper diagnostic criteria is essential for such a common paraviral exanthem like PR with atypical presentations. According to these authors,^[35] diagnosis of PR can be made clinically with the following points in mind:

- Essential clinical features are: circular or oval lesions with peripheral collarette scaling, central clearance on at least 2 lesions.
- The optional clinical features are: lesions to be present over trunk and proximal limb with less than 10% of lesions distal to mid-upper-arm and mid-thigh, lesions to be along lines of skin cleavage, appearance of herald patch at least 2 days before secondary eruption.
- The exclusional clinical features are: presence of multiple vesicles at the center of lesion, distribution of lesions over palmar and plantar areas, clinical or serological evidence of secondary syphilis.

This is mainly applicable for the common, typical presentations of PR. When faced with an atypical case, a simple lesional biopsy can help in excluding the vast list of differentials that come to mind rather than provide a confirmatory diagnosis of atypical PR. The typical histological picture of PR may resemble somewhat of a nonspecific dermatitis. However, there are some features strikingly associated with PR. These include diminished granular cell layer, extravasation of red blood cells in papillary dermis and partly into the epidermis, dyskeratosis, liquefaction degeneration of basal cells, homogenization of papillary collagen, and intra-epidermal vesicles in apparently dry skin.^[36]

DIFFERENTIAL DIAGNOSIS

PR in both its typical and atypical forms can be confused with an array of other cutaneous conditions. These

include secondary syphilis, guttate psoriasis, pityriasis lichenoides chronica, erythema dyschromicum perstans, sub-acute cutaneous lupus erythematosus (SCLE), lichen planus, nummular eczema, pityriasis alba, pigmentary purpuric dermatoses (in case of purpuric PR), seborrheic dermatitis, tinea corporis, and tinea versicolor.^[1,3]

Of these, secondary syphilis has to be given utmost importance. Here lies the value of a good and detailed history of the patient regarding sexual activity, symptoms of lymphadenopathy and presence of lesions over palms and soles, which are almost always significant for syphilis. Histology reports show the presence of plasma cells in secondary syphilis.^[18] Patients can be further tested for VDRL or any of the treponemal tests for an absolute diagnosis.

Tinea corporis or tinea versicolor may be also another diagnosis that comes to mind when the patient only presents with a solitary herald patch. Positive findings of an enlarging annular lesion or hyphae on cytological examination can help differentiate it from PR.

Nummular eczema can be distinguished from PR from the distribution of their lesions as the former are more commonly found over the upper and lower extremities with lesser predilection for the trunk, as seen in PR. Also, patients complain of severe pruritus associated with oozing of lesions. In PR, only 25% of the patients may present with mild to severe pruritus.

Guttate psoriasis: like PR it also occurs mainly on the trunk and limbs but usually spares the face, palms of the hands and soles of the feet. But, what sets it apart is the characteristic 'guttate' or drop like lesions overlaid with thick silvery scales as seen in psoriasis. History may reveal a recent streptococcal sore throat infection. If doubt still persists, a histological examination can be done.

TREATMENT

As it is well known, PR is a self-limiting disorder and patients usually need to be counseled and made aware of the natural course of the disease. If the patient suffers from pruritus or irritation, emollients can be prescribed for the same. However several pharmacological therapies have been tried and tested on patients with PR.

- Corticosteroids: Due to a lack of substantial evidence providing positive results, very little can be said about the therapeutic uses of corticosteroids in PR. These have been found to actually exacerbate the symptoms and lesions and hence, it is not an advisable option.^[37]
- Macrolides: conflicting studies^[38,39] have not yet revealed whether or not macrolides like erythromycin are in fact a good treatment option for patients with PR. Large scale, randomized controlled studies need to be conducted for further evaluation on the questionable usage of such drugs for the treatment of PR.

- c) Anti-viral: since PR has been linked to viral reactivation, it is only fitting to think that antivirals would be a benefitting treatment option. So far, only acyclovir has been studied^[40,41,42,43] and it has been shown that patients treated with acyclovir show faster resolution of lesions on the 7th day, specifically. PR usually resolves only after the 2nd week and hence this proves that acyclovir may be highly beneficial if started early in the course of the disease.
- d) Phototherapy: from the several studies carried out to test the efficacy of phototherapy, it has been shown that results are inconsistent. Though initial studies done in 1974 and 1983 show promising results, the following ones show either insignificant findings or even negative outcomes. One study showed worsening of a patient after phototherapy with UVB.^[44]

CONCLUSION

A common, acute papulosquamous disorder, pityriasis rosea, was first identified as early as 1798. More commonly found in teenagers and young adults, doubts still linger pertaining to the etiology of this exanthema. However, most evidence have collectively pointed towards an infectious origin (as opposed to atopy) and especially that of a viral type. Reasons may include clustering of cases, presence of prodromal illness and seasonal variations. HHV 6 and HHV 7 have been of particular interest and several studies have shed light on this. The incidence of PR is 0.5-2% with a greater incidence among pregnant women. There may be a slight predilection to females. PR is universal and isn't limited by geographical variations. There may be seasonal variations with reports of greater incidence in rainy periods. In its presentation, most dermatologists are quick to assessing the most common and typical forms of Pityriasis Rosea. Various diagnostic criteria have been put forth by several authors on diagnosing classic Pityriasis Rosea. Known for its 'Herald Patch' or 'Mother patch', it is then followed by a 'Christmas tree' pattern of lesions along Langers lines of skin cleavage. It may or may not be associated with constitutional symptoms. However even after more than 200 years, this cutaneous eruption still baffles most physicians due to the various atypical manifestations of the eruption. Variations can be seen in its shape, size, number, distribution, and course of the disorder. It is quite uncommon to find PR in children less than 10 and when presented in pregnant women during first 15 gestational weeks, it may result in abortion, pre term birth and even fetal demise. Due to the atypical appearance of the lesions, arriving at a concrete diagnosis may be challenging and several differential diagnoses may come to mind. Proper history taking and clinical examination play a vital role in differentiating PR from other skin eruptions. In difficult cases, lesional biopsy can help provide an exclusional diagnosis. In this way, patients can be managed more effectively and judicious use of medications can be seen. This helps avoid unnecessary

patient costs, antibiotic misuse (and thereby prevent risk of resistance) and help achieve overall patient compliance.

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