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Commentary

The Bearer Blob- Pityriasis Rosea

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Preface

Pityriasis rosea is an acute, benign, self-limiting cutaneous condition composed of papules and squamous lesions. As pityriasis annotates "fine scales", a characteristic appearance of a "herald patch" and subsequent scaly, elliptical spots are configured upon the trunk and proximal extremities, delineating a "classic Christmas tree" appearance. Pityriasis rosea or "rose coloured scale" is additionally denominated as pityriasis circinata, roseola annulata and herpes tonsurans maculosus. Majority of instances of common Pityriasis rosea manifest a classic morphology and distribution. The benign, cutaneous eruption is devoid of permanent sequelae and generally does not mandate therapeutic intervention.

Disease pathogenesis

Of obscure genesis, pityriasis rosea is associated with seasonal variation. Clusters of lesions appear within communities, indicating an infective origin. Infective agents such as viruses, bacteria or spirochetes and non-infectious factors such as atopy and autoimmunity may engender the condition [1].

Infection of upper respiratory tract may precede the occurrence of pityriasis rosea, suggesting infection with Streptococcus. Systemic reactivation of latent human herpesvirus-6 (HHV-6) and human herpesvirus-7 (HHV-7) infection may be incriminated as etiological agents [1,2].

Pityriasis rosea-like eruptions are documented following vaccinations such as Bacillus Calmette-Guerin (BCG), influenza, swine flu (H1N1), diphtheria, smallpox, hepatitis B and Pneumococcus [1,2].

Cutaneous eruptions are observed with drugs such as gold, captopril, barbiturates, D-penicillamine and clonidine. Pityriasis rosea is common in winters with certain seasonal variation in spring and autumn.

Pityriasis rosea is associated with absence of natural killer (NK) cells and B- lymphocyte activity, indicating the predominant concurrence of T-cell mediated immunity. Elevated quantities of CD4 T-lymphocytes and Langerhans cells arise within the dermis, possibly insinuating processing and presentation of viral antigens [1,2].

Keratinocytes imbued with anti-immunoglobulin M (IgM) are discerned in pityriasis rosea which may be associated with exanthem phase of viral infection. Incidence of atypical pityriasis rosea is roughly 20% and appears contingent to clinical symptoms, biological course, distribution, magnitude or morphology of lesions [1,2].

Disease characteristics

Incidence of pityriasis rosea is at an estimated 0.5% to 2%. A gender equivalence is observed. Typically, the condition arises between 10 years to 35 although children, adolescents and young adults are incriminated. Pityriasis rosea may be accompanied by atopy. Occurrence of pityriasis rosea during first 15 weeks of gestation may engender premature delivery and foetal mortality [2,3].

Pityriasis rosea- like cutaneous eruptions are associated with drug intake and multiple drugs are implicated such as captopril, gold, isotretinoin, non-steroidal anti-inflammatory agents (NSAIDs), omeprazole, terbinafine and tyrosine kinase inhibitors. Clinically, aforesaid eruptions are devoid of a herald patch. Histologically, an interface dermatitis with abundant infiltration of eosinophils is observed. Variants of Pityriasis rosea are multiple and designated as acral, inverse, purpuric, papular, follicular, vesicular and oral [2,3].

Pityriasis rosea is categorized as

- Vesicular pityriasis rosea which represents as a generalized vesicular eruption of magnitude 2 millimetres to 6 millimetres or as a rosette of vesicles. Lesions are predominant in children and confined to the head, palms and soles. Segregation is required from varicella and dyshidrosis [1,2].
- Purpuric (haemorrhagic) pityriasis rosea manifests as macular purpura arising from the cutaneous surface or oral mucosa [1,3].
- Urticarial pityriasis rosea [1,2].
- Generalized papular pityriasis rosea is an exceptional condition discerned in young children, pregnant women and individuals of African- Caribbean descent. Multiple papules appear concurrent to classic patches and plaques [1,3].
- Lichenoid pityriasis rosea is observed in concordance with atypical pityriasis rosea although lesions are commonly engendered with drugs such as gold, captopril, barbiturates, D-penicillamine, and clonidine [2,4].
- Erythema multiforme-like pityriasis rosea represents with targetoid lesions in addition to classical pityriasis rosea. Histologically, erythema multiforme and pityriasis rosea may demonstrate identical features except for "satellite cell necrosis" exemplified in erythema multiforme wherein lymphocytes appear adherent to scattered necrotic keratinocytes [2,4].
- Follicular pityriasis rosea wherein typical, follicular secondary lesions appear as discrete lesions or aggregates which are associated with classical lesions. Demarcation from follicular lichen planus, keratosis pilaris or atopic dermatitis with a follicular element is mandated [2,3].
- Giant pityriasis rosea is an exceptional condition designated as such due to Darier. Enlarged plaques and encircled lesions of magnitude varying from 5 centimetres to 7 centimetres are encountered wherein individual lesions may achieve dimensions of the palm of incriminated subjects [3,4].
- Pityriasis rosea emerging as exfoliative dermatitis [3,4].
- Pityriasis rosea with atypical herald patch can be absent in around 20% subjects or appear in concurrence with secondary eruptions or emerge at unusual sites as the face, scalp, genitalia or adjunctive sites [3,4].
- Inverse pityriasis rosea is composed of lesions which predominantly emerge within acral and flexural areas such as the groin, axilla and face [3,4].
- Acral pityriasis rosea is a condition where lesions are aggregated upon acral body sites as the palms or soles. In addition, conditions such as erythema multiforme, syphilis, necrolytic acral erythema and drug eruptions mandate a distinction [3,4].
- Unilateral pityriasis rosea is an exceptional variant enunciated in children and adults. Lesions are unilateral and singularly confined to one side of the body. Incriminated subjects demonstrate a herald patch with classic secondary lesions [1,3].
- Blaschkoid pityriasis rosea is a condition where lesions adhere to lines of Blaschko [1,3].
- Limb- girdle pityriasis rosea is additionally designated as pityriasis rosea of Vidal wherein cutaneous eruptions are enlarged, annular and confined to shoulders or pelvic girdle while incriminating the axilla and groin [1,3].
- Mucosal incrimination in pityriasis rosea is observed in around 16% subjects and implicates the oral mucosa with punctuate, erosive, bullous haemorrhagic ulcers with or without elevated borders, petechiae, papulo-vesicular bullae and erythematous plaques [1].
- Localized pityriasis rosea wherein eruptions are localized to a singular body segment [1].

Atypical variants of the condition are designated as unilateral, inverse, vesicular, papular, urticaria-like, erythema multiforme-like and purpuric [2,3].

Clinical elucidation

Clinically, cutaneous eruption of pityriasis rosea typically manifests as a singular, enlarged, pink to salmon-coloured "herald patch" or "mother patch" which enhances in magnitude within 48 hours and appears at 2 centimetres to 10 centimetres. Subsequently, an acute, generalized dissemination of multiple, elliptical, scaly, papulo-squamous patches and plaques along cutaneous cleavage lines are observed which resolve within 6 weeks to 8 weeks. Relapsing and persistent variants are also observed. Lesions are predominantly situated upon the trunk and proximal extremities in concordance with Langer's lines of cleavage displaying a characteristic "Christmas-tree" pattern [4,5].

Scaling in a collarette fashion is frequent [5].

Classically, a solitary, ovoid patch manifests upon the trunk as a "herald patch" which indicates disease onset. Thereafter, advancing perimeter of the patch represents as a collarette of scales [4,5].

Cutaneous eruption is preceded by prodromal symptoms of headache, sore throat, gastrointestinal manifestations, fever, malaise, lymphadenopathy and arthralgia with associated severe pruritus in around 25% instances. Herald patch appears in an estimated 50% to 90% instances and is generally situated upon the trunk, neck or proximal extremity [5,6].

Generalized cutaneous eruption demonstrates numerous, crop-like lesions occurring within one week to two weeks following the onset of herald patch. Symmetric eruptions commonly incriminate the thorax, dorsal region, abdomen, adjoining zones of neck and upper or lower extremities. Incrimination of acral sites is exceptional [4,5].

Secondary lesions occur as elliptical or ovoid macules and papules. Fine scaling and centric wrinkling, with "cigarette paper" countenance is exemplified. Characteristic lesions with "collarette" like scale, adherent peripheral edges and elevated centric region are observed. Lesion distribution is bilateral and diffuse with long axis parallel to lines of cutaneous tension [5,6].

Subsequent secondary eruption incorporates numerous miniature plaques situated upon the trunk and proximal extremities following Langer's cleavage lines, a pattern which is referred to as a "Christmas tree" configuration when localized upon the posterior trunk [4,5].

Cutaneous rash of pityriasis rosea usually extends to up to five weeks and resolves within 8 weeks in a majority (80%) of subjects [5].

Histological elucidation

Evaluation of cutaneous tissue specimen may be unnecessary although reveals non-specific features simulating chronic dermatitis [5,6].

Cogent histological patterns demonstrate epidermal hyperplasia, spongiosis, focal parakeratosis, superficial perivascular inflammatory infiltrate and variable red cell extravasation [5,6].

On microscopy, a superficial perivascular dermatitis is observed. Aggregates of focal parakeratosis, epithelial hyperplasia and focal epidermal spongiosis is exemplified. Epidermis demonstrates lymphocytic exocytosis, variable spongiosis, mild acanthosis and an attenuated granular cell layer. Lesions demonstrate spongiotic dermatitis along with extravasation of red blood cells and focal parakeratosis [5].

Extravasation of red blood cells is accompanied by perivascular infiltrate of lymphocytes, histiocytes and dermal aggregates of eosinophils. Periodic acid Schiff's (PAS) stain demonstrates an absence of pathogenic fungi [5,6].

The scales denominate a non-specific subacute or chronic dermatitis accompanied with focal hyperkeratosis, angulated parakeratosis and minimal acanthosis. Granular cell layer is usually absent beneath foci of parakeratosis. Intra-epidermal cytoid bodies may be discerned along with minimal spongiosis. Occasional, focal acantholytic dyskeratosis is observed. Lymphoid and histiocytic inflammatory infiltrate circumscribes the vascular articulations of superficial plexus. Occasional, disseminated eosinophils and erythrocytes are enmeshed within the epidermis [5,6].

Differential diagnosis

Pityriasis rosea necessitates a distinction from specific conditions such as lesions of secondary syphilis, dermatophytosis, guttate psoriasis, nummular eczema, pityriasis lichenoides chronica, cutaneous T-cell lymphoma, erythema annular centrifugal and erythema chronic migrans. Additionally, Pityriasis rosea mandates a demarcation from conditions such as erythema multiforme, Kaposi's sarcoma, lichen planus, para-psoriasis, paediatric syphilis, pityriasis alba, seborrheic dermatitis, tinea corporis and tinea versicolor.

Histological demarcation is necessitated from diverse conditions such as dermatophytosis, pityriasis lichenoides chronica (PLC), secondary syphilis and guttate psoriasis [1,2]:

- Dermatophyte infection is associated with epidermal scaling. However, scales are devoid of staining with periodic acid Schiff's (PAS) stain [1].
- Pityriasis lichenoides chronica (PLC) typically depicts an interface of cellular alterations and vacuolar degeneration of epidermal basal layer [1,2].

- Syphilis can be challenging to segregate from Pityriasis rosea as cutaneous lesions are identical. However, morphological features indicative of syphilis are neutrophils confined to the stratum corneum, infiltration of plasma cells and lymphocytes, lymphocytes with abundant cytoplasm or vacuolar alterations of the dermo-epidermal interface [1,2]. Additionally, rapid plasma reagin assay can be employed to exclude secondary syphilis with around 100% sensitivity and 85% to 99% specificity [1,2].

- Guttate psoriasis is clinically concurrent with Pityriasis rosea. However, psoriasis characteristically demonstrates intense infiltration with neutrophilic aggregates enmeshed within parakeratotic mounds, designated as Munro's micro-abscesses [1,2]. Additional disorders mandating clinical segregation are small plaque parapsoriasis and erythema annulare centrifugum.

- Small plaque parapsoriasis manifests with multiple, miniature, scaly patches although is devoid of a "herald patch" and spontaneous resolution of lesions [1,2].

- Erythema annulare centrifugum morphologically presents with a dense lymphoid and histiocytic infiltrate with enveloping superficial vascular articulations designated as the "coat-sleeve" appearance [1,2].

- Acute and subacute eczematous dermatitis is devoid of "lens shaped" foci of parakeratosis whereas spongiosis is mild to moderate [1,2].

- Drug reactions associated with cutaneous eruptions depict an enhanced infiltration of eosinophils [1,2].

- Fungal infections within the cutaneous surfaces display several dermatophytes which can be highlighted by periodic acid Schiff's (PAS) stain [1,2].

Adequate discernment of atypical variants can be challenging and mandates distinction from diverse papulo-squamous eruptions as subsequent disease management may be affected.

Investigative assay

Dermatoscopy is a pertinent diagnostic manoeuvre which segregates pityriasis rosea from associated conditions. Lesions demonstrate a yellowish background, peripheral articulation of scales and patchy, loosely configured, vascular arrangements [7,8].

Therapeutic options

Pityriasis rosea is a self-limiting, exanthematous condition. Contemporary therapies provide symptomatic relief and comprise of topical corticosteroids, emollients and oral antihistaminic drugs. Majority of lesions are alleviated with emollients, antihistaminic agents and topical steroids [7,8].

Macrolides and acyclovir alleviate pruritus and engender a brisk resolution of lesions. As clinical amelioration is obtained with ingestion of acyclovir, a viral aetiology is indicated [7,8].

Oral erythromycin initiates a resolution of cutaneous eruption in around 73% subjects. Narrowband ultraviolet B therapy can also be employed. Ultraviolet rays modify the cutaneous immune response [7,8].

Figure 1: Pityriasis rosea depicting a classic herald patch surrounded by fine, pink scales [9].

Figure 2: Pityriasis rosea delineating mild parakeratosis, spongiosis, hyperkeratosis, epidermal hyperplasia and a superficial inflammatory exudate of lymphocytes and histiocytes [10].

Figure 3: Pityriasis rosea demonstrating mild acanthosis, hyperkeratosis, parakeratosis, spongiosis and an upper dermal infiltrate of lymphocytes and macrophages along with few vascular articulations [11].

Figure 4: Pityriasis rosea exhibiting acanthosis, hyperkeratosis, parakeratosis and spongiosis along with superficial dermal inflammatory infiltrate of lymphocytes and histiocytes [12].

Figure 5: Pityriasis rosea enunciating acanthosis, parakeratosis, hyperkeratosis, epidermal hyperplasia, mild spongiosis and an inflammatory exudate of lymphocytes and histiocytes confined to the dermis [13].

Figure 6: Pityriasis rosea displaying mild spongiosis, epidermal hyperplasia, hyperkeratosis, an upper dermal chronic inflammatory infiltrate and several vascular articulations [14].

Figure 7: Pityriasis rosea delineating mild acanthosis, parakeratosis, hyperkeratosis, spongiosis, epidermal hyperplasia and an intense, upper dermal inflammatory infiltrate [15].

Figure 8: Pityriasis rosea exemplifying mild acanthosis, parakeratosis, hyperkeratosis, spongiosis and a moderate, upper dermal infiltrate [16].

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