Psoriasis in children

Psoriasis is a very common genetically determined skin disorder. Although psoriasis is often thought to start in young adult life, it is not uncommon for patients to show the first signs of this condition in childhood, or even infancy.

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Psoriasis is a very common inherited condition. It runs strongly in families, with about 60% of affected children having a positive family history. The appearance of the skin lesions in psoriasis is due to too rapid a turnover of the epidermis, possibly driven by activated T-cells. Studies have linked psoriasis to HLA loci, and psoriasis susceptibility loci have also been identified.[1] Nevertheless, the exact pathogenesis of this condition remains elusive, as does the exact mode of inheritance.

In children it is very common for psoriasis and atopic eczema to coexist. This may be a coincidence as both are common conditions; however, there is some evidence that the two diseases are genetically linked in some people.[2] This combination of the two conditions can be confusing clinically.

The usual figure accepted for the prevalence of psoriasis in the community is about 2%; however, this may well be an underestimate because mild cases often go unrecognised and the diagnosis is a clinical one. Biopsy is not always diagnostic and often difficult to justify, particularly when the patient is a child.

Many textbooks state that psoriasis typically starts in young adulthood; however, it can present in children from infancy onwards. About one-third of patients with psoriasis show initial signs in childhood.[3] Its prevalence in children is unknown, and there have been very few meaningful studies in this area.

In my own paediatric dermatology practice, I often diagnose psoriasis in children. Nearly all of these children are referred to me with a provisional diagnosis of atopic eczema. My own database indicates that in only about 10% of cases has psoriasis been suspected by referring general practitioners.

Diagnosing psoriasis

There is a spectrum of involvement in psoriasis ranging from a mild condition, representing only nuisance value, to a disabling disease. The former is common in children, and it is very unusual to see the most severe forms, such as generalised or pustular psoriasis, before puberty. Nevertheless, psoriasis in a child that is severe enough to warrant a visit to a doctor is often missed clinically because the usual assumption is that it does not occur in this age group.

Psoriasis has many clinical variants (Table 1). Some of these are well recognised in children, such

IN SUMMARY

- **Psoriasis is an inherited condition; about 60% of affected children have a family history of psoriasis.**
- **In children psoriasis is often associated with atopic eczema.**
- **Psoriasis may be precipitated and exacerbated by group A streptococcal infections, trauma and stress.**
- **Eczema and fungal infection are the two most common differential diagnoses.**
- **Psoriasis is usually a milder disease in children than it is in adults.**
- **Psoriasis is often more difficult to treat than eczema because it is predominantly a hyperproliferative rather than purely inflammatory disease.**
- **Successful treatment of psoriasis in children can usually be achieved with topical therapy.**

Table 1. Variants of psoriasis seen in children

Common

- Scaly, thickened skin on elbows, knees and ankles
- Scalp scaling
- Anogenital rash
- Persistent nappy rash
- Nail pitting
- Small scattered plaques

Uncommon

- Blepharitis
- Angular cheilitis
- Facial plaques
- Annular rash
- Follicular rash
- Palm and/or sole rash

Table 2. Clues to the diagnosis of psoriasis in children

History

- Improvement with sun exposure
- Cradle cap or nappy rash in infancy
- Family history of psoriasis (examine the parents, they often do not realise they have psoriasis)
- Rash that is resistant to mild or moderate topical corticosteroid treatment, responds partially to strong topical corticosteroids and then flares rapidly on treatment cessation
- Exacerbation after bacterial throat infection

Examination

- Periauricular scale and fissuring
- Nail changes, particularly pitting
- Scalp scaling
- Hand and/or foot rash
- Distribution of rash on dorsal surfaces of knees and elbows and on the ankles and hands

as napkin psoriasis in infancy and guttate psoriasis, an exanthematic form in toddlers and older children after streptococcal throat infection. However, all forms of psoriasis occur in children, although the presentations can be somewhat different from the classic presentations seen in adults. It is very unusual to see psoriatic arthritis in children, although it is certainly reported.[4]

It is well known and accepted that group A streptococcal infections precipitate and flare psoriasis. Because children tend to suffer more from such throat and ear infections than adults, bacterial infection has become more closely associated with childhood psoriasis.

Although it may be considered controversial among some dermatologists, most adults with psoriasis are adamant that trauma and physical and psychological stress affect the severity of their rash. This can also be true of psoriasis in children, which may worsen after a family upheaval, a move to a new school or falling out with friends.

Psoriasis in children is virtually never drug-induced, because the classes of drugs that precipitate the condition in adults (i.e. ACE inhibitors, NSAIDs, beta blockers, lithium and antimalarials) are rarely given to children.

Ultraviolet light usually improves psoriasis in people of all ages. Parents often relate that in summer their child's rash is better, particularly after a holiday at the beach. They usually attribute this to salt water, but it is really the sun that is responsible.

There is no definitive diagnostic test for psoriasis. The decision to classify a chronic skin eruption as psoriasis still lies with the clinician and depends on the child's family history and the distribution, morphology and clinical behaviour of the rash (Table 2).

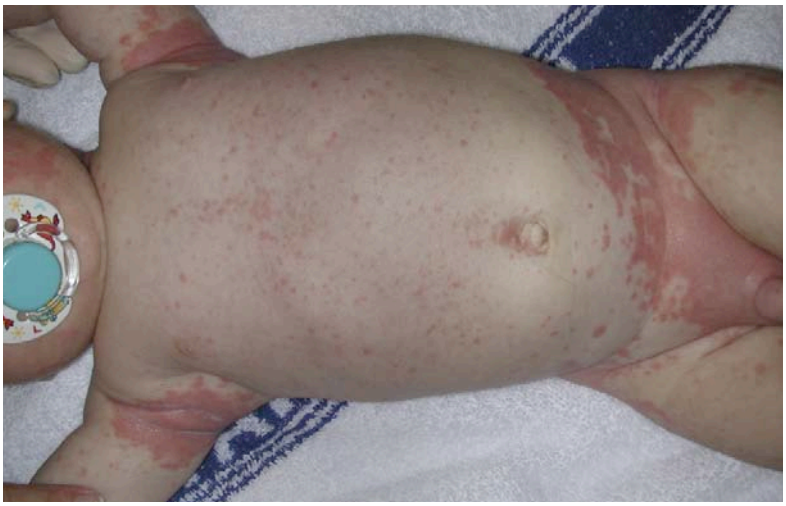


Figure 1. Flexural psoriasis in an infant.

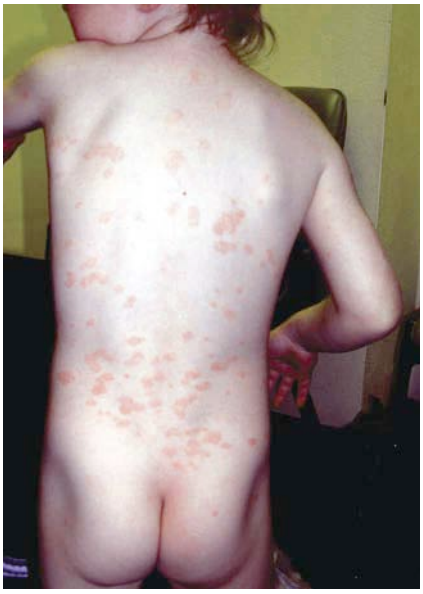


Figure 2. Guttate psoriasis, which may closely resemble pityriasis rosea.

Psoriasis in infancy

The very first sign of psoriasis can be a scaly scalp. Parents often recall that their child with psoriasis had cradle cap as a baby.

Psoriasis is also a very common cause of persistent nappy rash. Unlike common irritant nappy rash, the rash of psoriasis often has a well demarcated edge, involvement of the folds and a beefy red colour. It is often a recurrent problem while the child remains in nappies. Flexural psoriasis, including nappy rash, is usually not scaly (Figure 1).

One-third of babies with typical seborrhoeic dermatitis will develop psoriasis.

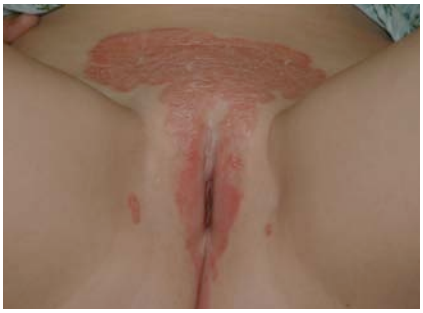


Figure 5. Vulval psoriatic rash.

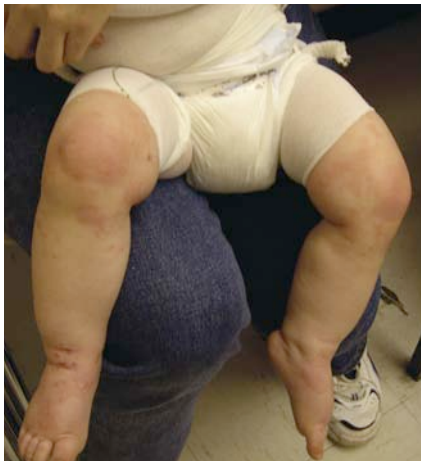


Figure 3. Typical distribution of psoriasis in a toddler.

So-called napkin psoriasis is very similar to seborrhoeic dermatitis but is often acute in onset and has typical psoriatic features: well defined plaques involving the groin, axilla and central area of the face with small scattered ovoid plaques on the trunk.

Psoriasis in toddlers and young children

In toddlers and prepubertal children guttate psoriasis is the best known form of psoriasis. This pattern of psoriasis is usually regarded as a childhood phenomenon; however, it is also seen in adults. It is an exanthematic rash precipitated typically by an acute streptococcal throat infection. Affected patients present with acute onset of multiple small scaly erythematous plaques, mainly on the trunk,

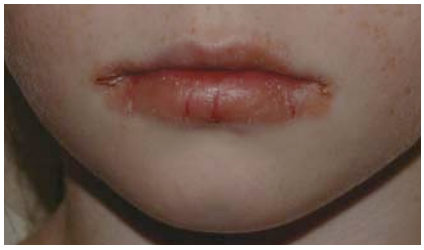


Figure 6. Angular cheilitis (perleche). The presence of this rash in young children is often a sign of psoriasis.

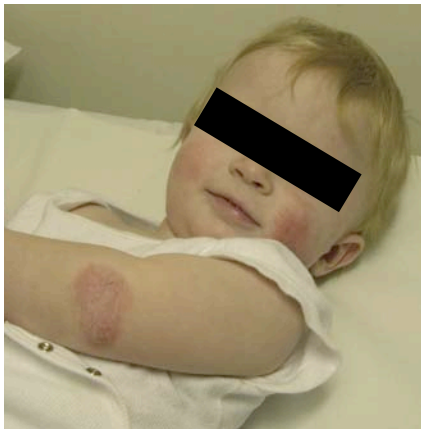


Figure 4. Facial involvement of psoriasis, an uncommon finding in children (and very rare in adults).

which may last for many weeks if not treated (Figure 2). The rash is not always itchy and may closely resemble pityriasis rosea.

Despite the attention given to guttate psoriasis in textbooks, the most common form of psoriasis in toddlers and young children is poorly defined, and sometimes lichenified, scaly plaques on the dorsal surfaces of the elbows, knees and ankles, and often also on the trunk and legs (Figure 3). There is also often scaling of the scalp, as well as scaling, erythema and fissuring in the post- and infra-auricular skin. It is not uncommon for a moderate degree of atopic eczema to be present as well, with involvement of the cubital and popliteal fossae. The rash may be itchy but usually not as itchy as eczema.

An unusual feature of psoriasis in young children (and one that is very rare in adults) is facial involvement. This usually presents as well defined plaques on the cheeks (Figure 4).

Some children with psoriasis may present only with scaling of the scalp. Prepubertal children do not suffer from what is called 'dandruff' in adults (this is really seborrhoeic dermatitis), and most children with scalp problems not involving hair loss have psoriasis.

Perianal rash is another common and

sometimes perplexing sign of psoriasis in children. Typically, the child presents with a persistent itchy perianal rash that may occasionally become infected, weeping and fissured. This usually leads to a provisional diagnosis of streptococcal perianal dermatitis, and swabs may indeed confirm a bacterial infection. However, repeated courses of antibiotics are ineffective if the real problem is psoriasis.

Vulval and penile rashes are also common presentations of psoriasis (Figure 5). Girls may experience a remitting and relapsing itchy and sore erythematous rash involving the labia majora. Although erythema is not always obvious on examination, parents may recall that the rash was well demarcated but not scaly when it occurred. In boys erythematous plaques tend to occur on the penis and scrotum.

When angular cheilitis (perleche) occurs in young children, it is often a sign of psoriasis. It tends to be erythematous, fissured and scaly (Figure 6). Unlike dermatitis, which responds readily to emollients and mild topical corticosteroids, psoriatic cheilitis is highly treatment resistant and persistent.

Blepharitis is another sign of psoriasis in children of all ages. Although atopic eczema often causes periocular rashes, these rashes are poorly defined and tend to have a fine scale. When psoriasis occurs on the eyelids, there is a well demarcated edge and thicker, whiter scale. Again, treatment resistance is characteristic.

Children of all ages with psoriasis may present with persistent rashes on the palms and soles. The appearance is often so nonspecific that it becomes very difficult to make the diagnosis without signs of psoriasis elsewhere. On presentation, the child may have scaly erythema of soles and palms, often with a sharp cut-off at the wrist (Figure 7). Intertrigo, similar to tinea, may occur in the toe webs. The rash can sometimes by erosive and weeping. Pustular psoriasis of the palms and soles is very unusual but can occur.

As in all age groups, nail changes are common in young children with psoriasis (Figure 8). Simple pitting is most frequent, but ridging and thickening are also seen. A severe nail dystrophy with paronychia may occur. Nail changes are a useful diagnostic clue, as other causes of nail disease are unusual in children.

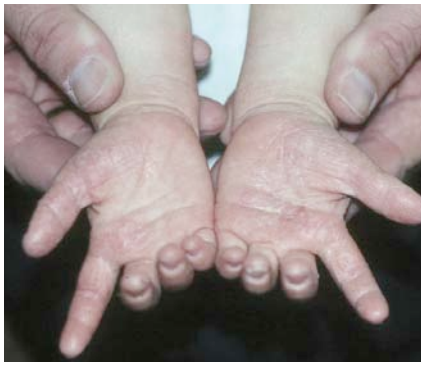


Figure 7. Nonspecific rash of psoriasis on the palms, with a sharp cut-off at the wrists.

Figure 8. Nail pitting, a common finding in children of all ages with psoriasis.

Psoriasis in older children and adolescents

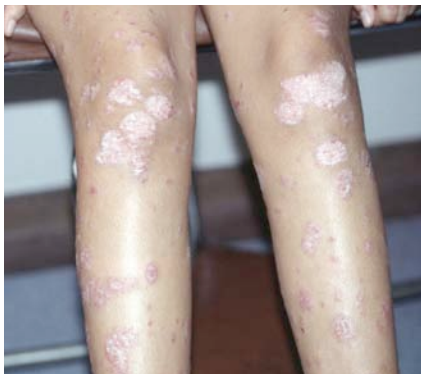
As children approach later childhood and adolescence, their psoriasis tends to evolve into the typical plaques seen in adults (Figures 9a and b) and becomes more difficult to treat. Children who as toddlers presented with a combination of typical atopic eczema and psoriasis may later experience remission from the eczema component of their skin problem and be left only with psoriasis.

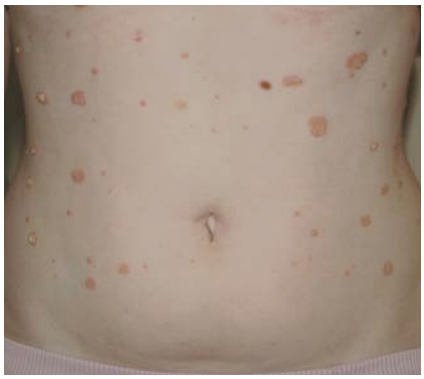
Typically, older children present with recalcitrant, lichenified plaques on the dorsal surfaces of the knees, elbows, feet and hands (Figure 10). The plaques are not as well defined as those in adults, and this can make diagnosis difficult. Associated scalp scaling is very common, as is periauricular scaling (Figure 11).

Very unusual forms of psoriasis in older children and adolescents include annular psoriasis and follicular psoriasis (Figures 12a and b).

Differential diagnoses

The most common and difficult differential to diagnose is lichenified eczema. Fungal infection may be implicated if plaques are annular and where there is nail involvement. Fungal infection is easily ruled out with a scraping. Acute guttate psoriasis may be very difficult to differentiate from both pityriasis rosea





Figures 9a and b. Psoriatic plaques in teenagers, which are typical of those seen in adults.

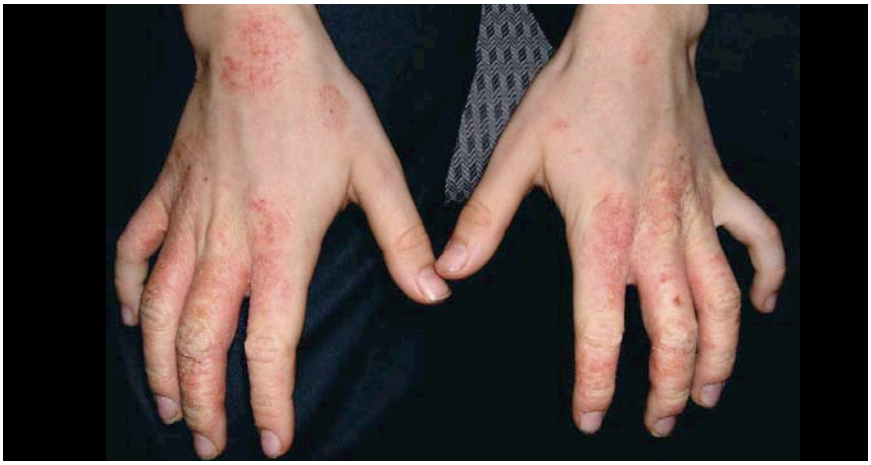


Figure 10. Lichenified plaques of psoriasis on the dorsum of a teenager's hands. Typically, these plaques are not as well defined in children as they are in adults.

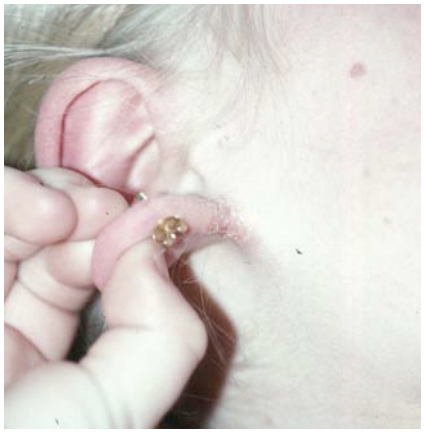


Figure 11. Infra-auricular scaling, a common presentation of psoriasis in children of all ages.

and the less common condition pityriasis lichenoides. Genital psoriasis is often confused with bacterial and fungal infections. There are also some very rare conditions such as pityriasis rubra pilaris and erythrokeratoderma that may be confused with psoriasis. If in doubt, refer the patient to a dermatologist.

Management

Psoriasis is a chronic condition that first needs to be brought into remission and then kept in this state with ongoing maintenance treatment. Because it is predominantly a hyperproliferative rather than purely inflammatory condition, it is usually more difficult to treat than eczema and the environmental modifications and allergy testing that are often helpful in eczema are less relevant.

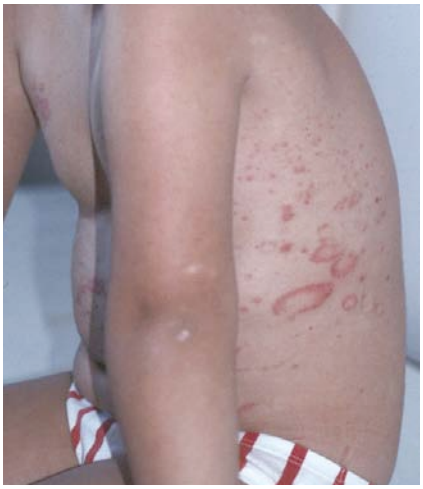
All of the topical therapies for psoriasis used in adults may be used in children, including topical corticosteroids, topical immunosuppressants such as pimecrolimus (Elidel), tar preparations, calcipotriol (Daivonex), dithranol (Dithrasal, Micanol) and the new topical retinoid, tazarotene (Zorac Cream). Careful sun exposure without sunburn is helpful; however, UVB therapy in children is not usually used or needed. Small children are often scared to get into a UVB unit on their own, and the risk of potentiating skin cancer is usually considered an unnecessary risk in children. Nevertheless, older children with chronic plaque psoriasis who can co-operate with treatment, and whose parents understand the risk, may benefit.

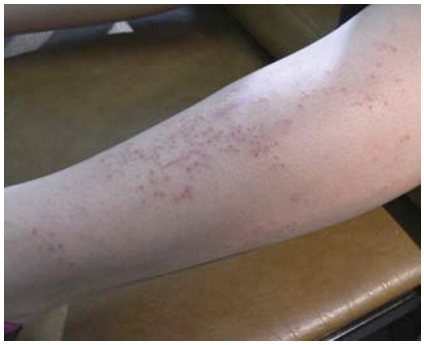
The presence of high antistreptolysin-O titres in children with guttate psoriasis or more chronic psoriasis associated with recurrent ENT infections indicates that they may benefit from oral antibiotics and possibly referral to an ENT specialist. Some children with psoriasis improve considerably after tonsillectomy.

It is true of psoriasis generally that the more often topical corticosteroids are used, the less they work. Nevertheless, corticosteroids are useful to treat itch and to initiate treatment before more specific topical therapy is used.

It is important to consider the following factors in the management of children with psoriasis.

- Parents must understand the chronic nature of psoriasis. Children will tire of constant treatment, and parents and children will have to find strategies to ensure treatment is continued.
- Stinging from topical therapy can be a problem that may limit compliance. It can be reduced by the use of





Figures 12a and b. Rare presentations of psoriasis in older children and adolescents. a (left). Annular psoriasis. b (above). Follicular psoriasis.

ointments rather than creams, use of low potency tars and pretreatment with corticosteroids before specific psoriasis treatments are started.
- Parents are often very concerned about, and need reassurance on, the use of topical corticosteroids.

Generally, it is useful to start with a regimen similar to that used in eczema treatment – that is, emollient and topical corticosteroids. Wet dressings will enhance response. Once lesions have become less inflamed and fissuring or excoriation has healed, an attempt should be made to introduce tar preparations, retinoid and calcipotriol. Parents need to understand that it may take months before their child's skin returns to normal. Once this is achieved, maintenance with regular use of tar preparations is often effective.

Fortunately, systemic treatment with medications used to treat adult psoriasis is rarely necessary in children. Use of methotrexate (Ledertrexate, Methoblastin), cyclosporin (Cicloral, Cysporin, Neoral, Sandimmun), acitretin (Neotigason), dapsone and etanercept (Enbrel) in children have all been reported but would be required only in the most severe cases.

Treatment of psoriasis can be difficult. It is often helpful to seek advice from a dermatologist before commencing treatment.

Prognosis

No longitudinal studies have determined whether childhood psoriasis remits at puberty. However, the condition in children is less severe and more responsive to treatment than it is in adults. In the short term, prognosis in affected children is generally very good. MT

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Further reading

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