Juvenile plantar dermatosis

Synonyms: sweaty sock syndrome

Juvenile plantar dermatosis symptoms

- Juvenile plantar dermatosis is cracking and peeling of the weight-bearing areas of the soles of children.
- It occurs in boys more often than girls.
- It is common between the ages of 3 and 14 with most cases occurring between the ages of 4-8 years.
- However, onset in adulthood can occur.
- It is worst in the summer.
- The sole becomes shiny and glazed. Usually the heel is unaffected but it may be involved and occasionally the palms are affected too. The web spaces between the toes are spared. It is the weight-bearing surface of the sole that is most involved.
- The skin becomes scaly.
- Painful fissures develop. They are usually under the toes and on the ball of the foot. They may take many weeks to heal.
- Other sites affected infrequently are the dorsal surface of the toes, the heels and the fingertips.

Juvenile plantar dermatosis causes (aetiology)

It is thought that friction and sweating are important and the consensus of opinion is very much that socks and shoes made of synthetic materials are to blame. The condition was first described in the 1970s.

Histological examination reveals acanthosis with hyperkeratosis, lymphocytic infiltrate in the dermis around the sweat ducts and inflammation in the epidermis.[1]

Risk factors
There is a predisposition in atopic children.[2]

Diagnosis

The age of the child and the shiny fissured skin is typical. Typical appearances can be seen in images on the DermNet and PCDS web pages.

Differential diagnosis

- Atopic eczema.
- Contact dermatitis.
- Psoriasis.
- Exfoliative keratolysis.
- Fungal infection - usually easily distinguished, as tinea pedis generally does not cause cracking or peeling of the weight-bearing areas; instead it may cause fine scaling over the instep or maceration between the toes.

Investigations

- Skin scrapings for mycology may be indicated.
- Patch testing for contact dermatitis should ideally be undertaken. One study found that nearly 30% of children with juvenile plantar dermatosis had at least one relevant reaction on patch testing.[3]

Primary care treatment and management[4]

The evidence base for management is very limited.

- Advise well-fitting leather shoes and cotton socks rather than synthetic materials (two pairs of cotton socks worn simultaneously may help to reduce friction).

- Days with little or no walking to allow the fissures to heal. Fissures may heal faster when occluded. Sticky plasters are usually adequate but a 'liquid bandage' or nail glue can be applied to the fissure and will relieve the pain.
- Greasy moisturisers such as soft paraffin (Vaseline®) can be helpful. Apply after a bath and before bed. Barrier creams are easier to use during the day. They are applied every four hours.
- Topical steroid creams may be beneficial in inflammatory episodes but should be used for only a short time. Tape medicated with steroid can be used to help heal fissures.
- Antifungal agents are of no value.

Prognosis [2]

- The condition tends to improve in cooler weather but may recur the following summer.
- Juvenile plantar dermatosis is self-limiting and generally resolves at puberty.

Further reading

- Juvenile Plantar Dermatosis; DermNet NZ

References

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Originally Published: 20/11/2023	Next review date: 30/11/2022	Document ID: doc_4054