

Case Report

A Case Report of *Sarcoptes scabiei* Infection in Ahwaz, Iran

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Abstract

The prevalence of *Sarcoptes* in rural areas has been investigated by many investigators. *Sarcoptes* infestation in areas with poor education and hygienic is higher than urban areas. In this study, one severe case of *Sarcoptes scabiei* infestation is described from a four months old child. Confirmation of scabies was done by clinical examination of child and by the identification of the mite by microscopically examining scrapings from the scabies lesions. The prevalence of scabies is high in children in rural regions, suggesting that it is a serious public health problem. This phenomenon may be due to the fact that certain environmental conditions such as overcrowding, poor personal hygiene, poverty, and ignorance, which are conducive to the spread of scabies, tend to be quite common in rural regions. Control programs should be put in place and implemented in an integrated manner, by reducing overcrowding, and by improving health education, personal hygiene, treatment and surveillance among high-risk populations.

Keywords: Sarcoptes, Child, rural, Iran

Introduction

Most human ectoparasites live on the surface of their host and depend on host to complete their life cycle. The most common ectoparasitic infestations of medical importance in humans include pediculosis, scabies, myiasis, and tungiasis (Bornstein et al. 2001).

Scabies is a contagious skin disorder and one of the most common itching dermatoses in the world especially in less developed countries. Epidemiologic survey of scabies periodically done in many countries is a reflection of general status of public health in the community. Their hosts are invertebrates as well as vertebrates (Bornstein et al. 2001).

The incidence of scabies was typically higher in rural areas than in cities. The most cases of scabies were noted in children and

teenagers between 6 and 15 yr of age (Lydden 2005).

Living in colonies and public places may cause increase in infectious diseases. Prisons are places with high-density population and particularly where social circumstances such as overcrowded housing predispose a community to the spread of the mite (Shamsaddini et al. 2000).

Infestation is transmitted through a direct contact with an infected person or animal, rarely also via objects, underwear, or bed linen. The adult female mite is 0.3-0.5 mm long and has 4 pairs of legs. A female of *S. scabiei* can survive around 30 d in the host's body penetrating into the *stratum corneum* of the skin and laying eggs in the burrow. Outside the host it can survive from 3 to 10 d comprising, along with the other invasive stages the larvae and nymphs. (Lydden 2005).

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She leaves behind a trail of debris, eggs, and feces (scybala), which induces an immunologic response. The female can lay up to 90 eggs in her 30-d lifespan. The larvae hatch in 3-4 d; they mature to adult forms over the next 2 weeks and continue the cycle. The average patient is infected with 10-15 live adult female mites at any given time (Camila et al. 2006).

A wide range of clinical manifestations may be seen in scabies, from classic pruritic papules and burrows to secondary features such as impetigo. Pruritus, the main clinical manifestation, is caused by the phenomenon of hypersensitivity to the debris, eggs, and feces, rather than by direct effects of the mite. The primary lesions appear 3-10 d after exposure to the mite. These lesions include burrows, papules, vesicles, and pustules. Nocturnal pruritus is characteristic of scabies infestation. Main presenting features include rash and intense itching. Bullous lesions are a less frequent (Ansarin et al. 2006).

Crusted scabies is a form of massive infestation by *Sarcoptes scabiei* observed in patients with immunosuppression and observed in children with immunosuppression or mental illness. (Crusted Norwegian) scabies induced by use of topical corticosteroids. Patients with Norwegian scabies can be infected with hundreds to millions of adult female mites (Camila et al. 2006).

The usual reference method for definitive diagnosis is identification of the mite with microscopic examination of skin scrapings (Alain et al. 2006). In infants and young children, 75% of mites can be found on the hands and feet, making this the best site to examine for a burrow (Camila et al. 2006).

The treatment of choice is permethrin 5% lotion. Alternative drug therapy includes precipitated sulfur in 6% petrolatum, lindane, crotamiton, and ivermectin. Topical antibiotics may be used to treat secondarily infected lesions (Camila et al. 2006). The lotion should be applied over the entire body,

including the face and scalp in infants. It should be left on for 8-12 h and then rinsed. Reapplication 1 wk later is advised. Topical antihistamines and topical corticosteroids may be used to control pruritus until symptoms resolve. In this study we reported a case in severe condition of *Sarcoptes scabiei* in four months old child in Abdolkhan village north Ahwaz, Khuzestan Province, Iran.

Materials and Methods

A four-month old child with severity of infestation referred to the laboratory by special clinician. She lives in Abdolkhan rural region in 50 Km north of Ahwaz. At first she was taken to general medical and was treated for skin hypersensitivity with antihistamine and some corticosteroid drugs. The lesion of the skin was not cured and the infected area was more scattered (Fig.1, 2). After she was visited by specialist she was referred to laboratory for *Sarcoptes* infestation. In scraped tissues of patient was found many adults *Sarcoptes scabiei* and their eggs and nymphs in various stages (Fig. 3,4)

Discussion

Scabies infestation is one of the contagious skin diseases with worldwide distribution. There are many articles about scabies infestation and all of them showed prevalence in rural areas with poor hygienic and education is than urban areas. The prevalence was age dependent, with children under five years accounting for 77%, peaking to 86% among the 5 to 9-yr-olds, and steadily declining with an increase in age. Lesions were found on almost all parts of the body, but lesions were more commonly located on the fingers, legs, hands, face, belly, and genitalia. *Sarcoptes scabiei* var *hominis* was recovered from 84 (67%) of the 125 skin scrapings examined (Terry et al. 2001).

In one study that performed in the students of primary schools in Somea-Sara in 2000-2001, 3656 students were selected and examined. Fifty out of 3656 students (1.36%) were suffered from scabies. The prevalence of scabies was 1.0% in urban schools and 1.61% in rural schools, 1% in male and 1.7% in female students (Golchai et al. 2003). *Sarcoptes* infection also has been seen in prisons where hygienic conditions are poor. The rate of infection among prisoners was 1.2% (Shamsaddin et al. 2000). The prevalence of disease in urban area with crowding and poor sanitation also was high. In Bushehr Port, in a cross-sectional study, 3913 students (1951 girls & 1962 boys) of elementary schools of Bushehr Port were examined. 84 (2.1%) of the examined students were infested with scabies. There was no difference for scabies infection between the girls and boys (Arjomandzadeh et al. 2001). In other study in Turkey, infestation was found in 5(0.4%) of 1,134 children with scabies (Ciftci et al. 2006).

The infestation can also be found in hospitals. An outbreak of scabies occurred in a ward of a local hospital in Barbastro (Huesca, Spain), between November 2002 and January 2003 (Larrosa et al. 2003).

Infection with increased risk of acquiring ectoparasitic infestation is occurred among the homelesses (Estrada et al. 2003).

The prevalence of scabies is high in children in the displacement camps, suggesting that it may be a serious public health problem not only in these camps, but also in the entire country. *Sarcoptes* infection was recovered from 84 (67%) of the 125 skin scrapings examined (Terry et al. 2001).

Infestations were more frequent in children with mothers whose education levels were low. This indicates the necessity of an improvement in the economic and sociocultural status of the community and the promotion of hygiene concepts and practices in order to improve health of children (Ciftci et al. 2006).

This may be due to the fact that certain environmental conditions like civil unrest, overcrowding, poor personal hygiene, poverty, and ignorance, which is conducive to the spread of scabies, is characteristically present among the rural children. Control programs should be put in places and implemented in an integrated nature, by reducing overcrowding, and by improving health education, personal hygiene, treatment and surveillance among high-risk populations.



Fig. 1. The lesion of *Sarcoptes scabiei* of 4 month old child (Original)



Fig. 2. The lesion of *Sarcoptes scabiei* of 4 month old child (Original)

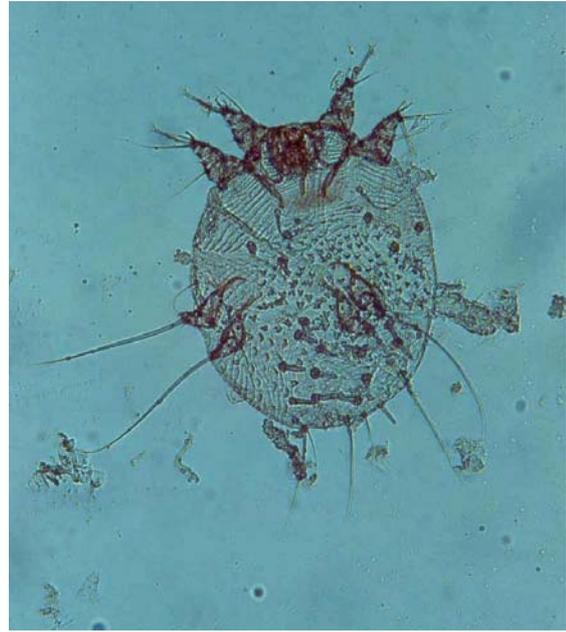


Fig. 3. Adult female *Sarcoptes scabiei* from scabbed skin of 4 month old child (Original)

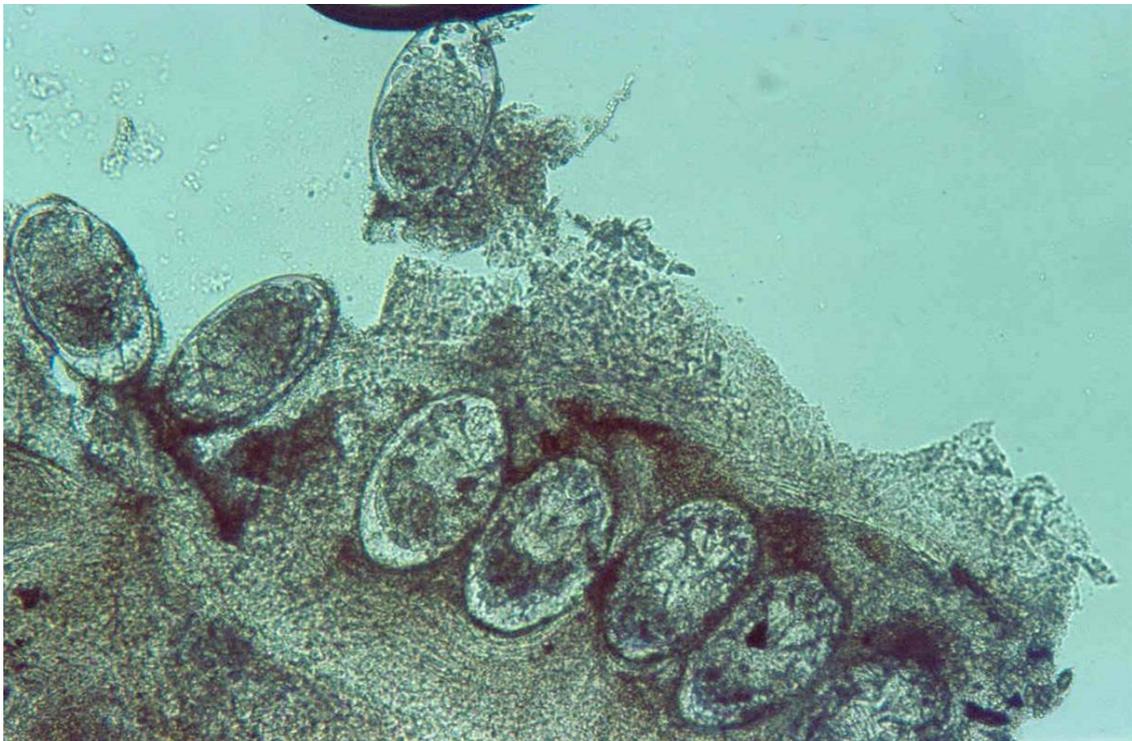


Fig. 4. The embryonated eggs of *Sarcoptes scabiei* under skin of 4 month old child (Original)

References

- Ansarin H, Jalali MH, Mazloomi S, Soltani-Arabshahi R, Setarehshenas R (2006) Scabies presenting with bullous pemphigoid-like lesions. *Dermatol Online J* Jan. 27; 12(1):19.
- Arjomandzadeh S, Tahmasebi R, Jokar MH, Khatmi SM, Zarenejad M, Abdolazadeh-Lavari H (2001) Prevalence of pediculosis and scabies in primary schools of Bushehr; 1999-2000. *South Iramed JL*.1(4): 46-41.
- Bornstein S, Morner T, Samuel WM (2001) *Sarcoptes scabiei* and sarcoptic mange. In: WM Samuel, MJ Pybus and AA Kocan, (Editors), *Parasitic Diseases of Wild Mammals* (second ed.), Iowa State University Press, Ames, pp. 107-119.
- Camila KJ, Giuseppe MU, Hengge MK, Casatelli JR (2006) Scabies. www.eMedicine Specialties> Pediatrics> Dermatology.
- Ciftci IH, Karaca S, Dogru O, Cetinkaya Z, Kulac M (2006) Prevalence of pediculosis and scabies in preschool nursery children of Afyon, Turkey. *Korean J Parasitol*. 44(1):95-8.
- Dupuy A, Dehen L, Bourrat E, Lacroix C, Benderdouche M, Dubertret L, Morel P, Feuilhade de Chauvin M, Petit A (2006) Accuracy of standard dermoscopy for diagnosing scabies. *J Am Aca of Dermato*. Available online 13 November 2006. Pages 1279-94.
- Estrada B (2003) Ectoparasitic infestations in homeless children. *Semin. Pedia Infect Dis*.14(1):20-4.
- Golchai J, Zargari O, Gholipour M, Karbasi M (1382) The prevalence of Scabies in the students of primary schools in Somea-Sara in 2000-01: An observational cross-sectional study. *Ira J Derma*. 25(7): 32-29.
- Larrosa A, Cortes-Blanco M, Martinez S, Clerencia C, Urdaniz LJ, Urban J, Garcia J (2003) Nosocomial outbreak of scabies in a hospital in Spain. *Euro Surveill*. 8(10):199-203.
- Lydden Polley (2005) Navigating parasite webs and parasite flow: Emerging and re-emerging parasitic zoonoses of wildlife origin. *Int J Parasit*. 35, Issues 11-12.
- Shamsaddini S, Nasiri Kashani M, Sharifi I, Khajeh Karimoddini M, Poursashkari M (1379) Prevalence of infectious skin diseases in the central prison of Kerman. *Iranian J Dermatol*. 13(4): 25-19.
- Terry BC, Kanjah F, Sahr F, Kortequee S, Dukulay I, Gbakima AA (2001) *Sarcoptes scabiei* infestation among children in a displacement camp in Sierra Leone. *Pub Health*. 115(3):208-11.