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# An Old Disease in New Look - Short Review of Literature: Scabies

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**Abstract** Scabies is a contagious skin disorder by the host-specific itch mite *Sarcoptes scabiei* var. hominis, and one of the most common itching dermatoses in the world. It affects more than 300 million cases per year. Scabies is a reflection of general status of public health in the community.

We represent an unmarried male patient aged 24 years, 22 years and 30 years with a localized Genital Scabies, no involvement of common sites and no other contacts in family.

**Keywords** Circle of Hebra; Clean scabies; Complications; Glans Penis; Genital scabies; Sarcoptes

## 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.

The scabies mite continues to plague all countries of the world and in some communities is epidemic. The discovery of the itch mite in 1687 marked scabies as the first disease of humans with a known cause and has been a common companion of the human species for over 2500 years. Pruritus associated with this infestation is usually severe, especially at night, requiring prescription Scabicidal therapy.

## Case report

Case: 1 A 24 -year-old male patient reported to our department with complaints of red coloured skin lesions over glans penis of 3-4 weeks duration, history of Itching is most intense at night, whereas during the daytime the pruritus is tolerable but persistent.

The unmarried patient denied genital trauma and history of sexual intercourse during the preceding 6 months. The physical examinations were within normal limits. On systemic examination no abnormality was revealed. Clinically there was no evidence of sexually transmitted diseases. Laboratory investigations were within normal limits.

He denied any recent changes in personal hygiene products, including laundry detergents.

The clinical examination revealed a small, Erythematous papules over the glans penis near meatus, 4 in number, measuring about 4-10 mm in diameter (Figure 1). No other areas of body affected. A mineral oil preparation from the penile lesion revealed no typical mite eggs and scybala.

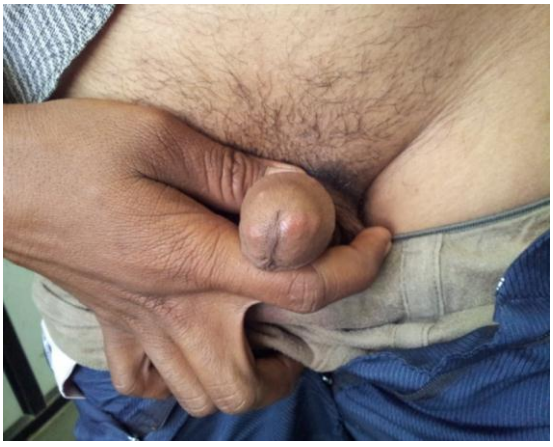

Figure 1 shows multiple Erythematous papules over glans penis and near meatus

Case 2 showed multiple nodular lesions over glans penis and shaft of penis size of 2-3 mm. (Figure 2).

Case 3 showed single nodular skin lesion over shaft of penis (Figure 3).

Figure 2 shows multiple Erythematous papules and nodules over shaft of penis

Figure 3 shows single nodular lesion over shaft of penis

**The most likely diagnosis is**

1. *Papular urticaria* or Insect bite reaction
2. Atopic dermatitis
3. Contact dermatitis
4. Scabies,
5. Dermatitis herpetiformis

Depending on site of lesions and history it was diagnosed as Scabies and patient underwent Scabicidal treatment in form of Topical Permethrin 5% cream applied weekly once for 2 weeks with Tab. Ivermectin orally stat dose with antihistamines. Patient was isolated and the environment disinfected. Patient becomes asymptomatic after two weeks of treatment. Final diagnosis was confirmed as Scabies in clean type affecting only Genitalia and other common classical sites spared.

## Discussion

Scabies in humans and other animals is caused by mites of the family Sarcoptidae, which includes Sarcoptes scabiei, the scabies mite, and Notoedres cati, a mange mite of cats (Burns, 2010).

Scabies is one of great epidemic disease of human kind. It has been linked to the death of King Herod the Great. It has been described as first disease in humans with a known cause. In historical American literature are full of names for it, among them Indiana itch, Illinois itch, Jackson itch, Cuban itch, prairie itch, camp itch, army itch, ship itch, jail itch, mattress itch, swamp itch, winter itch, barley itch and grain itch.

Thomas Hillier in 1865 wrote in his “Text book of Skin Disease” that the mite Sarcoptes hominis was cause of scabies. Von Hebra, Bonomo, August Hauptmann and Mellanby played important role in developmental identification of Scbies (Burns, 2010).

**Scabies is caused by *Sarcoptes Scabiei* var hominis**

Scabies can be considered as epidermal parasitic skin diseases (EPSD) along with pediculosis (capitis, corporis and pubis), tungiasis and hookworm-related cutaneous larva migrans (Feldmeier and Heukelbach, 2009), in which parasite–host interactions are confined to the upper layer of the skin.

Scabies can be transmitted directly by close contact or indirectly through fomite transmission, as the mite can live away from a human for up to 3 days (Feldmeier and Heukelbach, 2009). Family members, health care workers, and others in close contact with a patient with scabies are at greatest risk of infection.

Sarcoptes has an ovoid body, flattened dorsoventrally. The adult female measures approximately 0.4 mm long by 0.3 mm broad, and the smaller male 0.2 mm long by 0.15 mm broad. There are four pairs of short legs; the anterior two pairs end in elongated peduncles tipped with small suckers (Burns, 2010) (Figure 4).

Figure 4 shows Ovoid body, flattened dorsoventrally, four pairs of legs and Anterior legs with suckers. (Courtesy of www.acacamps.org)

A single fertilised female can initiate and perpetuate infection. It selects places on the body where skin is thin and wrinkled. Burrows are created at base of the Stratum corneum of the epidermis at a rate of 2 to 3 mm/day. It laid eggs in groups of 2 to 4/day in burrows, total number eggs laid is about 40 to 50. Infected adult contains on average 12 mites (Johnston and Sladden, 2005). Deposits eggs in the burrow. The larvae, which hatch in 3 to 10 days, move about on the skin, moult into a nymphal stage, and then mature into adult mites. The adult mites live three to four weeks in the host's skin (Figure 5).

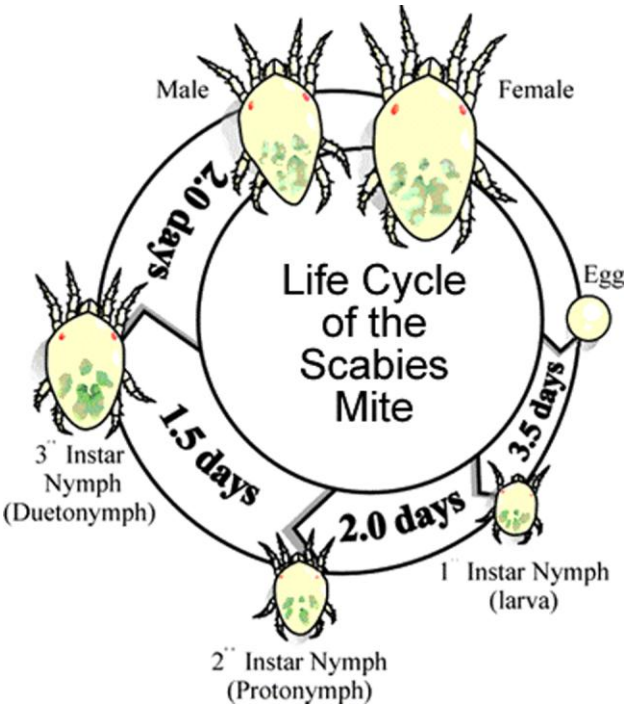


Figure 5 shows life cycle of itch mite (Courtesy of www.healthinessbox.com)

Diagnosis of Scabies is essentially clinical. The Primary lesions are Burrows, papules, vesicles, bullae and nodules.

Scabies prefers warmer sites on the skin such as skin folds where clothing is tight. These areas include the skin between the fingers, on the elbows or wrists, buttocks or belt line, around the nipples and on the penis. Mites also tend to hide in or on the skin under rings, bracelets or watchbands, or under the nails.In adult males Primary lesions seen over genitalia as a raised, slightly elongated nodular lesions with burrow tracks and commonly seen over the prepubial skin, shaft of penis, scrotum and glans penis (Anand et al., 2013). In children, the infestation may involve the entire body, including the palms, soles and scalp. Imaginary line connecting the web spaces of fingers, flexor medial aspect of wrist, elbow, anterior axillary fold, nipple and areola in females known as “Circle of Hebra” (Figure 6).

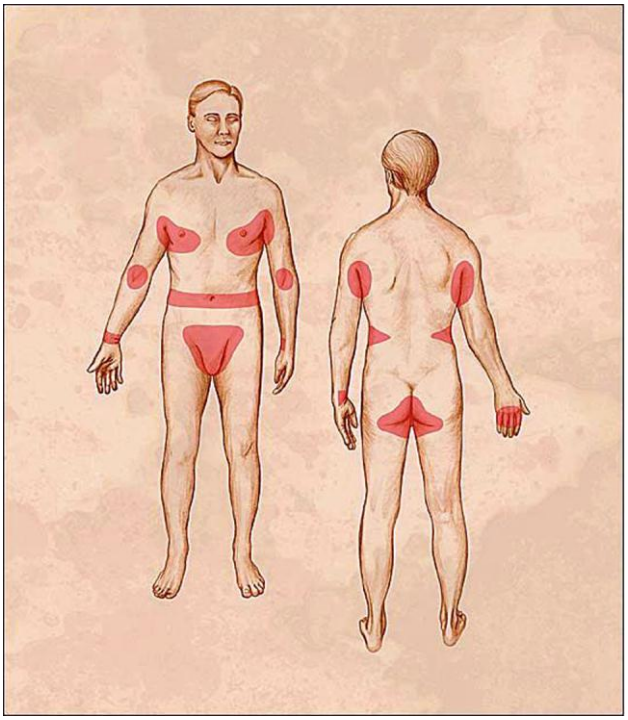

Figure 6 shows most common sites of Scabies and circle of Hebra. (Courtesy of www.stanford.edu)

Crusted scabies characterized by marked crusting and scaly plaques resembling Psoriasis (Costa de Sousa, 2012). Norwegian (crusted Scabies) Scabies most common in immunosuppression diseases like AIDS (Perna et al., 2004) those who use corticosteroid drugs (Binic and Jankovic, 2010). It can also be present like Bullous Scabies (Gutte, 2013), Bullous Scabies mimicking Bullous Pemphigoid (Brar et al., 2003) and Scabies crustosa in old kidney transplant patient (Gregorini et al., 2012). Scabies skin lesions masquerading as dermatitis herpetiformis.

Pruritus is the hallmark of scabies regardless of age (Johnston and Sladden, 2005). It is severe, unrelenting and nocturnal aggravation is characteristic.

A definitive diagnosis of scabies can be made by microscopic visualization of the scabies mites, eggs, or faecal pellets. A dark, washable felt pen might be used to colour a small area of affected skin. After

several minutes, the ink is washed off, revealing the outline of the burrow that absorbed it. Sometimes the mite cannot be seen, but a therapeutic trial will confirm the diagnosis. Histopathology of skin biopsy shows mites in the stratum corneum (Figure 7).

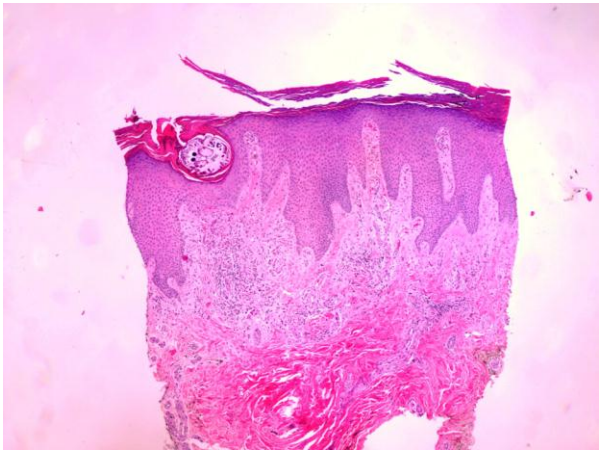

Figure 7 Scabies mite transacted in the stratum corneum (Courtesy of www.qi-iq.org)

Infestation is frequently complicated by bacterial skin infection, including impetigo, cellulitis, and abscess due to Streptococcus pyogenes and Staphylococcus aureus (Engelman et al., 2013). Such bacterial skin infections predispose to serious suppurative and nonsuppurative sequel. Scabies infestation provides an important portal of entry for bacteria, and complement inhibitors from scabies mites can promote Bacterial growth (Figure 8).

Treatment is aimed at killing the scabies mites with a Scabicidal. Permethrin (5% cream) is currently the standard topical Scabicidal. The topical preparation is applied overnight (8 to 14 hours) from the neck down with special attention to under the fingernails, the umbilicus, and the gluteal fold, and to reapplication on the hands if they are washed. Topical Permethrin also effective Scabicidal in children. It is recommended as a first-line therapy for patients older than 2 months of age (Albakri and Goldman, 2010). Alternately, 1%

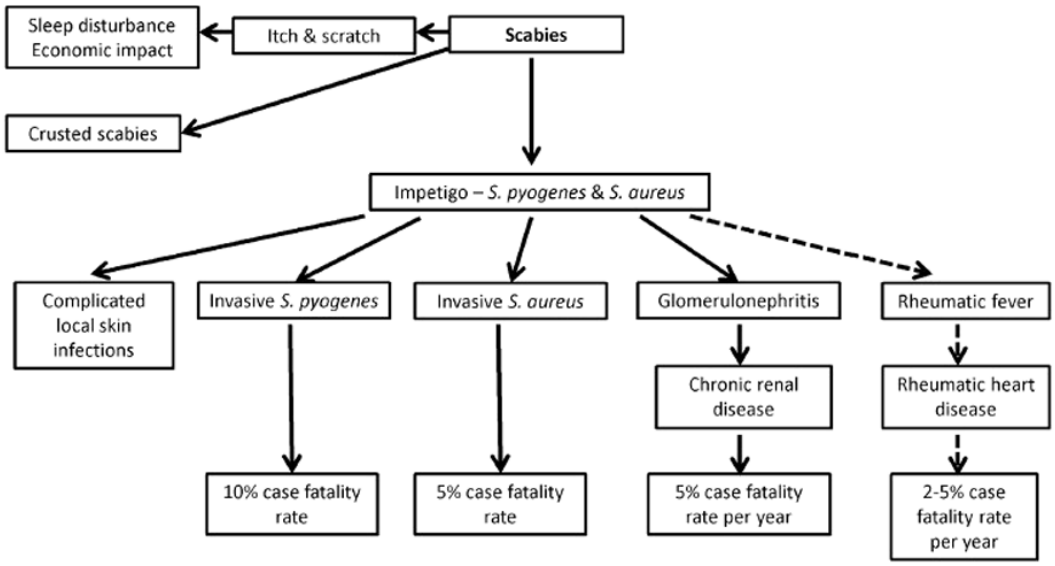


Figure 8 show complications of Scabies (Engelman et al., 2013)

lindane used in pregnant or lactating women, or children younger than 2 years of age. Other drugs Benzoyl benzoate 10-25%, Crotamiton 10%, Precipitated sulphur 3-6%, pyrethrin 0.6% are also effective.

An important part of scabies treatment is decontamination of the patient's living environment. To reduce the potential for reinfestation during treatment by fomite transmission, carpets, chairs, and car seats should be cleaned, and clothing, stuffed animals, pillows, towels, and bed linens used within the previous week should be washed in hot water and dried on high heat, or sealed in a plastic bag for a week. All family members and close contacts should be treated simultaneously, even if they are asymptomatic. Pets do not require treatment as they do not harbour human mites.

## Conclusion

Scabies is a Global public health problem affecting persons of all ages, races and socioeconomic groups. With advent of AIDS and with more number of patients on immunosuppressant drugs after organ transplantation, number of cases of scabies is on the increase.

Scabies is readily treatable disease, but it remains more common due to diagnostic difficulty, inadequate treatment of patients and contacts. It imposes a considerable economic burden on individuals, families, communities, and health systems. Direct costs relate to treatments, missed employment, frequent healthcare consultations and management of hospitalised cases including institutional outbreaks. Further information is needed to quantify the indirect costs, including complications in later life. So we described here with a title of "An Old Wine in New Bottle" because it is ancient disease like leprosy with new unusual clinical presentations.

Scabies is considered as a Ubiquitous Most Economically Neglected Skin Disease.

### Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. The examination of patients is conducted according to the Declaration of Helsinki principles.

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