What is scabies?

Human scabies is a contagious parasitic skin infestation. It is caused by the itch mite *Sarcoptes scabiei var. hominis* (Figure 3).

The mite is about 0.35 mm in length, rounded, with four pairs of short stubby legs. It burrows into, lives, and reproduces in human skin. The females are flat, oval, and translucent white in colour. They lay 2 to 3 eggs daily, leaving trails up to 1 cm long with a small bump at the leading end of the trail. The wavy burrows are often visible and are an aid to the diagnosis.

Case

Mr. PG had been suffering from an intensely pruritic eruption for approximately two weeks. The pruritus was marked in the evening and often woke him from his sleep. He accompanied his girlfriend to the emergency department (ED) when she presented with what was later diagnosed as pelvic inflammatory disease.

While accompanying his girlfriend, he showed the emergency physician the various excoriated areas on his hands, arms, and penis (Figures 1 and 2). A skin scraping was performed revealing the diagnosis.

Mr. PG was discharged from the ED with a bottle of 5% permethrin cream and instructions in its use. He returned to the ED two weeks later to personally thank the emergency physician for having successfully treated his condition.

Figure 1. Excoriated areas on the hands.

Figure 2. Excoriated areas on the penis.
After 72 to 84 hours, larvae emerge, molting several times to become adults that mate after about 17 days. Live mites can be found in dust samples from homes of infested persons. Mites do not survive more than 3 to 4 days without skin contact.

How is scabies spread?

Once the mites are present on a person, they spread rapidly. Mites do not jump from one person to another. They are spread person to person through direct skin-to-skin contact with an infested person, or indirect contact with their personal belongings, e.g., shared towels or bedding, clothing, childcare settings, crowded living quarters, institutions, and personal care facilities. The mites can burrow beneath the skin in 2.5 minutes. Pruritus occurs within two to six weeks in those who have not had previous exposure; while in those who have been exposed, the pruritus can develop within one to four days after the exposure.

What is Norwegian scabies?

Norwegian scabies refers to a severe infestation of scabies (Figure 4). It usually occurs in institutionalised persons, or in individuals who are debilitated or immunosuppressed. It presents with many more mites in or on the skin than an episode of regular scabies. There is less itching, but thick encrusted lesions resembling psoriasis are present. The following can also occur: thickened nails, hair loss, skin discolouration, eosinophilia, pustular lesions, and swollen lymph nodes. It is more difficult to treat due to the enormous numbers of mites and encrusted skin lesions. Usually more than one treatment is required.

Should people worry about getting scabies?

If the necessary precautions are taken to prevent the spread of scabies, there should not be cause to worry.
Scabies

The best way of dealing with the problem is to avoid getting them in the first place. The risk of getting scabies from an infested person increases with the duration and type of exposure. A quick hug or handshake is not likely to spread scabies. People should avoid sharing clothing and personal articles. In a clinical setting, brief contact with a person with scabies should not lead to nosocomial transmission. It is important to avoid prolonged exposures and to always wash hands after coming in contact with a person with scabies.

Is scabies dangerous?

Scabies is not dangerous. It does, however, cause an itchy rash that can be a lot worse at night, leading to sleep deprivation. Scabies will not go away by itself; treatment is required.

When should scabies be suspected?

Suspect scabies in any person complaining of itching or if they have a rash with burrow-like tracking scratch marks in the typical areas for mite infestation. The areas of the body usually affected include web spaces between fingers, forearms, armpits, breasts, skin folds, and genitals. A recent history of exposure increases the possibility of scabies.

How is scabies diagnosed?

The characteristic symptoms, the appearance of the rash, and a history of exposure, may determine the diagnosis (Table 1). However, it may be definitively confirmed by identification of the mite, mite eggs or scybala (feces) in scrapings of the raised papules or intact burrows in the skin seen by microscopic examination (Figure 5).

How do you manage a person with scabies?

Early identification and treatment are essential to preventing further symptoms in the patient and preventing the spread to other patients and staff in a hospital setting.

Necessary care, such as diagnostic tests or surgery, should not be delayed or cancelled due to a scabies infestation. In the case of encrusted (Norwegian) scabies, precautions must be maintained until the skin lesions have resolved and skin scrapings of the lesions are negative for mites. The infested person and his or her contacts must be treated promptly and aggressively to avoid outbreaks.

What is the treatment?

A scabicide cream or lotion should be used exactly as directed and with care according to product instructions to avoid the possibility of neurologic toxic effects from absorption through the skin. The product of choice is 5% permethrin cream (Nix™). It is usually applied in a thin layer from the neck down over the entire body and left on usually for 8 to 10 hours, i.e., overnight. In children, the head is also treated. Usually only one treatment is required for regular scabies; at times a second treatment may be recommended.

The best treatment for Norwegian scabies may be oral ivermectin (available from Health Canada...
Scabies

Table 1
Diagnostic Clues to Scabies

- Intense itching, that is worse at night, especially at the hands, wrist, and elbows. Symptoms usually begin 2 to 6 weeks after first time contact with the mite. In a person who has previously had scabies infestation, symptoms appear as early as one to four days.

- A rash anywhere on the body from the neck down, e.g., between the fingers and toes, on the wrists and elbows, in the armpit, in the groin area, around the waist, behind the knees, and in folds or creases of the skin.

- The rash may be pustular (pimple-like irritations), or papular (raised spots). The rash can persist up to a month after treatment due to an allergic reaction to the dead body parts of the mites within the skin.

- In severe cases the rash can be extensive with scaling, blisters, and crusting. The rash may be complicated with a secondary bacterial infection as a result of scratching. Medicine will help control the itch.

- In men, the groin area (especially the shaft of the penis) is often affected and in women, the nipple may be infested.

- In children, scabies may also appear on the scalp, the palms of the hands, and the soles of the feet. Scabies are rarely found above the neck, except in infants.

Special Access Program by phoning 613-941-2108). Safe and effective products are available for pregnant or lactating women, people with seizure disorders, allergy, skin diseases, or children. A second treatment 7 to 10 days after diagnosis is necessary for Norwegian scabies.

The person’s clothing, bed linens, towels, and pillows must be changed immediately after the treatment. All articles must be laundered immediately. Scabicide contact with the face or eyes must be avoided.

As itching may not subside for several weeks following treatment the use of oral antihistamines and topical corticosteroids can help relieve this discomfort. Topical or systemic antibiotic therapy may be indicated for secondary bacterial infections of the rash lesions.

How is a patient with typical scabies managed in hospital?
A private room is desirable if patient hygiene is poor. Hospital personnel should follow routine practices, in addition to wearing gloves, a plastic apron or gown to apply the scabicide treatment and for direct contact with the patient, with his or her clothing and bed linens. These practices should be followed until 24 hours after one treatment with an appropriate, effective scabicide. The housekeeping department should vacuum the patient’s room.

How is a patient with Norwegian scabies managed in hospital?
A private room is required. Hospital personnel follow Contact Isolation Precautions, e.g., gloves and gowns to enter the room, for direct contact with the patient, their clothing, or the room environment. The housekeeping department should vacuum the patient’s room.

Precautions are maintained until the skin lesions have resolved and skin scrapings of the lesions are negative for the mites.
What other cleaning is necessary in hospital?

Contact the housekeeping department, once the patient is treated, to clean the room according to housekeeping procedure.

What should be done with the patient’s belongings?

Clothing, bed linens, towels, and pillows must be changed immediately after treatment. These articles must be laundered immediately.

Machine washable clothing/personal belongings used next to the skin in the four days prior to treatment must be either stored in a sealed plastic bag until taken home by a family member/friend to be laundered (machine washed with hot water and detergent for 20 minutes and dried on a hot cycle); or stored in a sealed plastic bag for 1 week; dry cleaned; or placed in a freezer for 24 hours.

Non-washable clothing/bedding or stuffed toys may be stored in a sealed plastic bag for one week, dry cleaned, or placed in a freezer for 24 hours.

What advice should be given to close contacts of the patient?

Contact a physician regarding the need for treatment for scabies or Norwegian scabies. All household members and bedmates should be treated prophylactically and must be treated at the same time.

Household members and close contacts must be evaluated by their physician if they develop unexplained pruritus or a rash on their bodies. Other people residing in the same dwelling should also check themselves to determine if they have scabies. If any doubt exists, these people should be evaluated by their physician.

Symptoms of scabies can occur as late as 2 months after exposure during which time a person can transmit scabies. Scabies will not go away unless treated. Avoid scratching. Scratching can break the skin allowing bacteria, such as *Staphylococcus aureus* and/or *Streptococcus pyogenes*, a portal of entry.

Keep fingernails short and clean. Keep skin clean by washing with soap and water. Children with scabies should be allowed to return to child-care or school after treatment has been completed. Asymptomatic contacts of a child with scabies are not excluded from school.

Clothing, personal belongings, and bed linens used by the patient next to the skin or shared with the patient four days prior to treatment should be managed as listed above. Vacuum the mattress, upholstery, and carpets thoroughly.

Case discussion

Mr. PG was diagnosed with scabies by the emergency physician. His lesions on presentation were not typical of scabies as he has excoriated the skin, which became secondarily infected.
Scabies

A treated person may remain pruritic for several weeks after the treatment has eradicated the mites. This is an allergic reaction to the mites and their feces, not a treatment failure. Even if pruritus persists despite treatment, re-treatment should be avoided as some of the agents may lead to skin eruptions, which are then difficult to differentiate from the initial episode.

Treating staff who may have had an exposure

Do not immediately treat the person. If the employee has had prolonged skin-to-skin contact prior to the patient receiving appropriate treatment, therapy may be warranted. Treatment may be necessary if contact precautions were not followed. In the case of Norwegian scabies, staff must be treated if contact precautions have not been followed as a large number of mites are present in the sloughed skin from the patient.

Take-home message

- Norwegian scabies refers to a severe infestation of scabies, usually occurring in institutions, or individuals who are debilitated or immunosuppressed.
- Suspect scabies if a patient complains of itching or has a rash with burrow-like track marks in the typical areas for mite infestation.
- The rash may be pustular or papular. In severe cases, the rash can be extensive with scaling, blisters, and crusting.
- Necessary care, such as diagnostic tests or surgery, should not be delayed or cancelled because of a scabies infestation.

The authors acknowledge the excellent secretarial assistance of Ms. Carolyn Schlippert in preparation of this manuscript.

Suggested Readings

Scrabbling out the Problem: Scabies

1. What is scabies?

Scabies is a highly contagious infestation caused by the itch mite also known as *Sarcoptes scabiei*. This mite burrows under the skin and leads to an itchy rash.

2. How is scabies spread?

Scabies is most frequently transmitted by direct skin to skin contact with someone who has scabies. It is also possible by indirect contact by sharing the bed clothing, clothing, and personal equipment of a person with scabies.

3. What is Norwegian scabies?

This is a severe infestation by *Sarcoptes scabiei*. It is usually seen in persons who have weak immune systems such as those with the human immunodeficiency virus.

4. Is scabies dangerous?

No! It can give a rash that is very itchy. Scabies should not make a person sick and it is not associated with other diseases.

5. How does a person know that he or she has scabies?

Intense itching that is usually worse at night especially at the hands, wrists and elbows indicates scabies. Some people can also get scabies affecting their genitals.

6. How is scabies diagnosed?

The first hint that scabies might be present is the rash and itching. Skin scrapings may be needed to look for the parasite under a microscope.

FAQ continued on page 22.
For an in-depth article on Scabies, please go to page 139.
7. How is scabies treated?

• There are several scabies treatments available in the pharmacy. The creams are usually applied in a thin layer from the neck down over the entire body and left in place for eight to ten hours. A shower is then taken to rinse off all of this material.

• A second treatment is usually necessary seven to ten days afterwards to make sure that all of the parasites have been killed.

• All clothing, bed linens and towels must be immediately changed and laundered, this includes all items used up to four days before treatment is provided.

• Anything that cannot be machine washed, dried in a dryer or dry-cleaned, must be placed in a plastic bag and left undisturbed for one week or placed in a freezer for 24 hours.

• The mattress, upholstery and carpets must be thoroughly vacuumed.

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**XENICAL**

**Prevents the absorption of approximately 30% of dietary fat**

**Effective Weight Loss**

**Effective Glycemic Control in combination therapy for overweight/obese type 2 diabetes patients**

Xenical (orlistat), when used in conjunction with a mildly hypocaloric diet, is indicated for obesity management, including weight loss and weight maintenance. Xenical, when used in conjunction with a mildly hypocaloric diet, is also indicated to reduce the risk of weight regain in obese patients after prior weight loss. Xenical is indicated for obese patients with a BMI ≥ 30 kg/m² or a BMI ≥ 27 kg/m² in the presence of other risk factors (e.g. hypertension, type 2 diabetes, dyslipidemia, excess visceral fat). Xenical can be used in combination with anti-diabetic agents (sulphonylureas, metformin, insulin) to improve blood glucose control in overweight or obese type 2 diabetes patients who are inadequately controlled on diet, exercise, and one or more of a sulphonylurea, metformin, or insulin. For patients with type 2 diabetes, the reduced calorie diet should be consistent with the dietary recommendations of the Canadian Diabetes Association Guidelines for the Nutritional Management of Diabetes Mellitus in the New Millennium.

Xenical is contraindicated in patients with chronic malabsorption syndrome and cholestasis. Incidence of GI side effects: oily spotting (36.8%), gas with discharge (23.9%), faecal urgency (22.1%), fatty/oily stool (20.0%). Caution should be exercised when prescribing Xenical to patients with a history of hypercalciuria or calcium oxalate nephrolithiasis and patients with pre-existing disease of the large bowel or rectum.
Lice are tiny, wingless insects which only live on humans. Head lice are called *Pediculus capitis* and are located on the hair of the head. Their eggs are called nits and are laid on human hairs. Pubic lice (*Phthirius pubis*) are found on the pubic hair and can also be seen on the eyebrows, eyelashes, and armpit hairs. They are known as “crabs”. Body lice (*Pediculus corporis*) lays its eggs in the seams of clothing rather than on the skin. Body lice can be found on all hair on the body.

If the head is itchy and persists despite scratching, it is possible that head lice are present. For body lice, carefully examine the hairs on the body, looking for the lice themselves or the nits.
3. How are head lice spread?

Head lice only make a person itchy, but do not transmit disease. Head lice are spread through shared clothing and other personal items, such as combs, hair brushes, hats, earphones, towels, and pillows. Close contact, such as wrestling, may lead to the spread of head lice.

4. How are head lice treated?

The hair does not need to be shaved off to treat head lice. There are several treatments, such as permethrin, which can be used at home.

Wash the hair with a conditioner-free shampoo and then rinse with water and dry the hair. Apply permethrin to saturate the hair. Work the product into the hair making a lather and leave it for 10 minutes before rinsing with water. Use a fine-tooth comb to remove the nits. A second treatment may be necessary in seven to 10 days, as the lice treatments do not necessarily kill all of the nits during the first treatment.

5. What are the implications of getting lice?

Other than being a nuisance, the significance of lice is that you have been in contact with someone who has them. It does not mean that you are unclean, as lice do not respect any social or economic boundaries.

6. What should be done at home?

Vacuum mattresses, upholstery, and carpets thoroughly. Wash personal items, such as clothing, bedsheets, blankets, and pillows in hot water and detergent. Articles that cannot be washed should be placed in the clothes dryer on a hot setting for 20 minutes or be dry cleaned. Any article that cannot be washed or dried should be put in a tightly sealed plastic bag for two weeks.

Combs and brushes can either be soaked in permethrin for one hour or heated in water to 65˚ for 10 minutes.

7. How can one prevent the lice from coming back?

Check all family members to make sure that lice and nits are not present. If the scalp is itchy or signs of scratching are present, treatment is warranted. Close contacts and bedmates should be prophylactically treated for lice.

For an in-depth article on Lice, please go to page 149.