ONTARIO LONG TERM CARE CLINICIANS CONFERENCE

SCABIES IN LONG-TERM CARE FACILITIES

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DISCLOSURES

I am a contracted Medical Leader for Alberta Health Services but this presentation is my own.

Learning Objectives

After attending this presentation the attendee should have:

- A better knowledge of the special aspects of Scabies infestations in long-term care residents.
- A better knowledge of the particular features of Scabies that facilitate earlier diagnosis.
- A better knowledge of the coordinated treatment approach that is required for the effective management of Scabies in long-term care facilities.

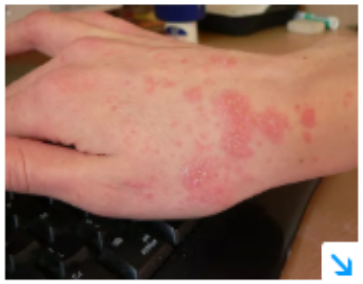
Eaten Alive By Scabies Mites: Former Model Dies From Septicemia

By International Business Times

Posted on April 28, 2018

Asheville nursing home residents, staff treated for scabies

Sabian Warren, Published 2:05 p.m. ET May 14, 2015 | Updated 7:45 a.m. ET May 15, 2015



(Photo: Special to the Citizen-Times)

ASHEVILLE – Residents and staff at an East Asheville nursing home are being treated for scabies after a case of the parasitic mite infection was discovered.

All residents and staff at The Laurels of Summit Ridge on Riceville Road are undergoing treatment "as a precaution," facility administrator Judi Boyer said.

She declined to say how many people might be infected.

The most common symptoms of scabies are intense itching and a skin rash, according to the Centers for Disease Control and Prevention.

Boyer said via email, "The Laurels of Summit Ridge honors the privacy of its residents and associates. It is due to these professional practices that the information that can be shared is of a limited nature. Upon learning of a suspected case, the facility immediately implemented its infection control procedures to help identify persons potentially in contact with them and to prevent the continued transmission to residents, staff and visitors …"

Belleville nursing home takes precautions due to scabies

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The Canadian Press
Published Thursday, February 14, 2008 10:01PM EST

BELLEVILLE, Ont. - An eastern Ontario long-term care facility that was exposed to scabies went into quarantine for more than a week as a precaution, officials said Thursday while stressing that no cases of the skin infection were found among staff and residents.

The Belmont Long-Term Care Facility in Belleville closed its doors to visitors last Wednesday after staff learned the facility had been exposed to the infection, which is caused by mites that burrow into the top layer of human skin and lay eggs. The mites are similar to lice and require a host to live.

Despite earlier reports of an "outbreak" situation, administrator David Clegg said no "confirmed" cases of the infection were detected, but precautions were taken to prevent any possible spread.

"What we've done is we've treated (residents) and our staff members," he said, noting preventative measures were taken even before anyone complained of symptoms.

"It's one of those things. I can't say who exposed us ... but we were exposed so we took proper precautions."

RELATED LINKS

- Scabies infections in Yellowstone elk on the rise

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Canada agrees to new trilateral trade deal with U.S. and Mexico


NAFTA replacement raises duty-free shopping limits for


Outline

- Overview of Scabies
- Typical Scabies
- Scabies in Long-term Care Facilities and Crusted Scabies

Case Report – Part 1

Where – On a *25 bed secured unit for mobile residents with dementia. It is home for 20 women and 5 men ranging in age from 66 to 96 years. The turnover is about 8 residents per year.*

Who - *The staff become aware that several residents have an itchy rash. Resident A is noted to have a rash on her torso, abdomen, arms and legs and a note is left for the attending physician. She is seen three days later and a dermatology consult is ordered. Four days later the resident goes for a dermatologist consultation and returns with a diagnosis of Scabies, and a preprinted prescription for 5% Permethrin cream.*

The Facility Infection Control person contacts me on the next day and I visit the unit the day after. Staff have a list of 7 residents (all female) that have similar rashes.

Scabies

- Scabies is the clinical manifestation of an infestation by the Scabies mite, ***Sarcoptes scabiei*** *var****. hominis.***
- It is only about 1/3mm in length, and is at the limit of visibility.
- The Scabies mite probably evolved along with humans.

Mites and Humans

- House Dust mites – like the Scabies mite they live off epidermal skin. In the case of House Dust mites it is shed skin. The diseases they cause are related to allergic reactions (rhinitis, asthma, atopic dermatitis) to mite proteins.

- Bird mites, Rodent Mites, Straw mites, Harvest Mites (Chiggers) – can cause rashes only by bites on humans exposed to them, but do not cause infestation.

- Demodex mites - are two species of non-pathogenic human mites that live in the hair follicles, primarily eyelashes and eyebrows, of ~1/2 of humans. They are asymptomatic and part of the human biome.

Scabies – Historical Aspects

- Scabies was recognized in classical times as a rash associated with tiny creatures. In accordance with medical theory of the times the rash was thought to cause the creatures, not vice versa.

- In 1687 an Italian physician, Giovan Bonomo, described the Scabies mite, observed a female mite laying an egg, and postulated that the mite itself was the cause of Scabies.

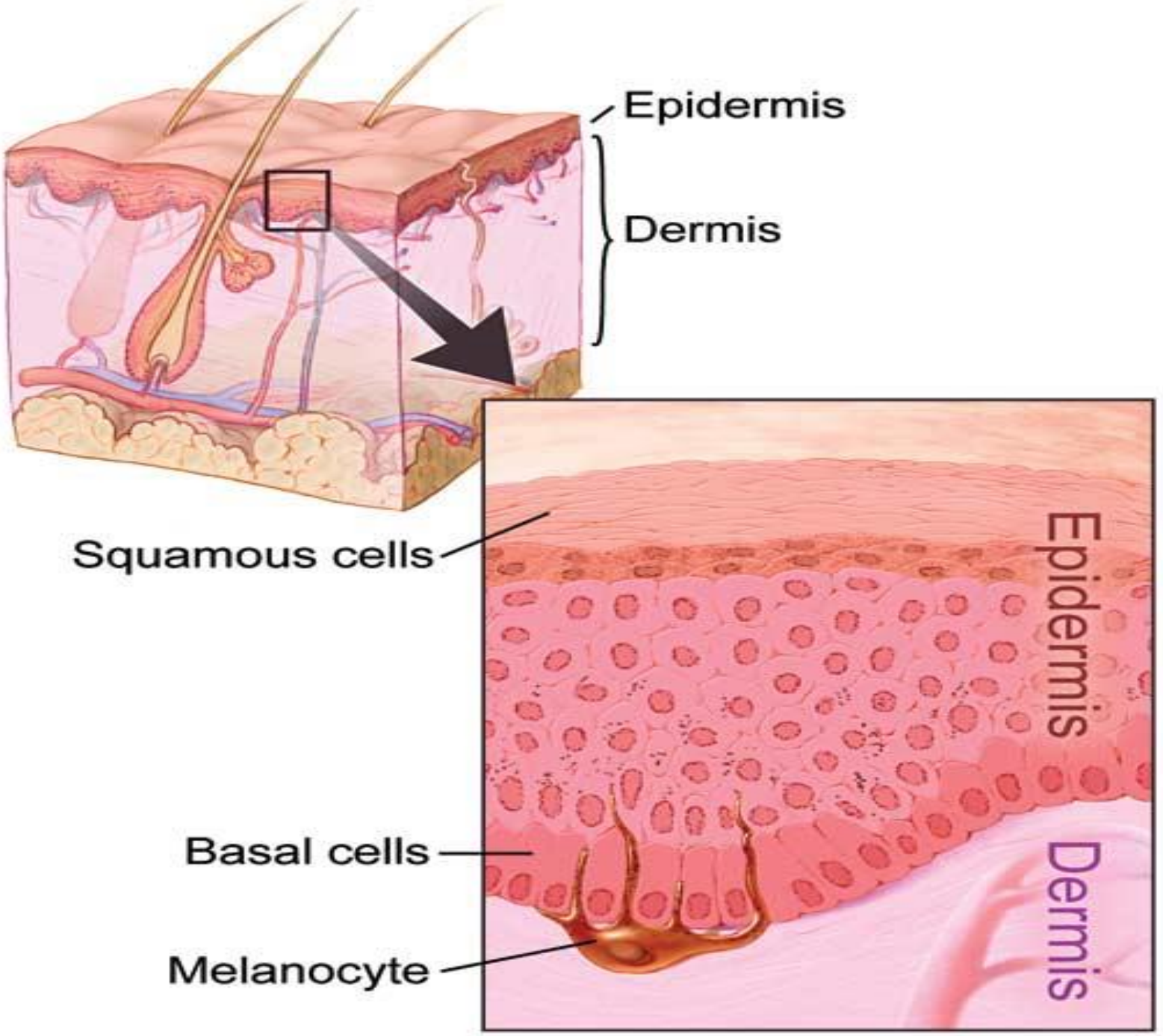
Scabies – Modern Aspects

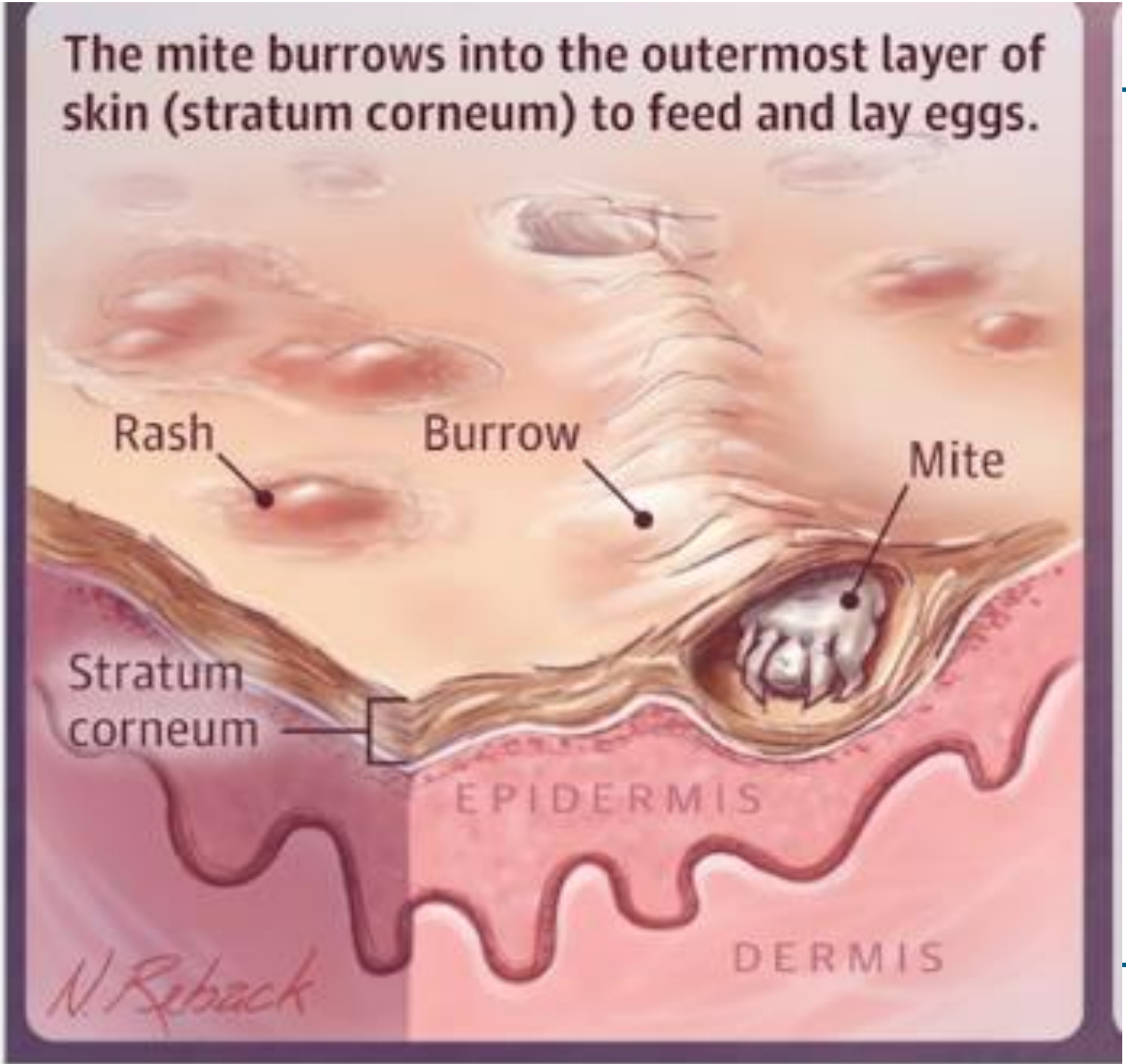
- In underdeveloped countries Scabies may be very common, e.g., up to 10% of the population, and 50% of children.

- In industrialized countries Scabies is sporadic, with outbreaks occurring in nursing homes and hospitals.

Scabies - Transmission

- Scabies is considered to be highly contagious, but this is likely more to do with the duration of asymptomatic infestation.
- Transmission is primarily by direct skin-to-skin contact.
- Environmental transmission is minimal.
- Hygiene has little to do with the prevalence


Epidermis
Dermis
Squamous cells
Epidermis
Dermis
Basal cells
Melanocyte


The mite burrows into the outermost layer of skin (stratum corneum) to feed and lay eggs.
Rash
Burrow
Mite
Stratum corneum
EPIDERMIS
DERMIS
N Rebeck

Scabies – Life Cycle

- Infestation begins when a pregnant female Scabies mite is transferred from an infested person to the skin of an uninfested person.
- The female mites wander haphazardly around the surface of the skin for up to an hour at the speed of ~2.5 cm per minute before selecting a suitable burrow site.
- Once a site is selected, the female mites use their mouth and legs to dig into the upper layer of the skin. When a burrow is complete, a female will lay 2 or 3 eggs in it.

Scabies – Life Cycle

- After 3 weeks the eggs hatch and the adult mites leave the burrow to look for mates.
- After copulation the impregnated females repeat the cycle, looking for a suitable burrow site on the same or different host.

Scabies – Signs & Symptoms

- In a typical infestation there are at most 50 mites on a body, and usually only about 10 or less.
- For the first 4 – 6 weeks of infestation there are no symptoms or signs.
- Then the mites and their byproducts cause an allergic immune reaction, leading to:
  - ✓ **INFLAMMATION** at the sites of burrows
  - ✓ **ITCHINESS** all over that is **INTENSE AT NIGHT**.

Scabies – Signs & Symptoms

- The classical findings on the skin are papules and vesicles, mostly on the hands and arms, **ESPECIALLY IN THE CREASES**. Other major areas are genitals and breasts. The scalp and face are rarely involved.

- Vesicles are tiny and remain discrete, and are often related to burrows.

- Papules represent an allergic reaction, rarely contain mites, so may be elsewhere on the body.

Scabies – Signs & Symptoms

- Burrows may be apparent as a tiny red wavy line adjacent to a vesicle or papule, but are mostly eradicated by scratching, and then secondary infection may occur.

- The physical findings may be subtle. The symptom of nocturnal itching is more obvious.

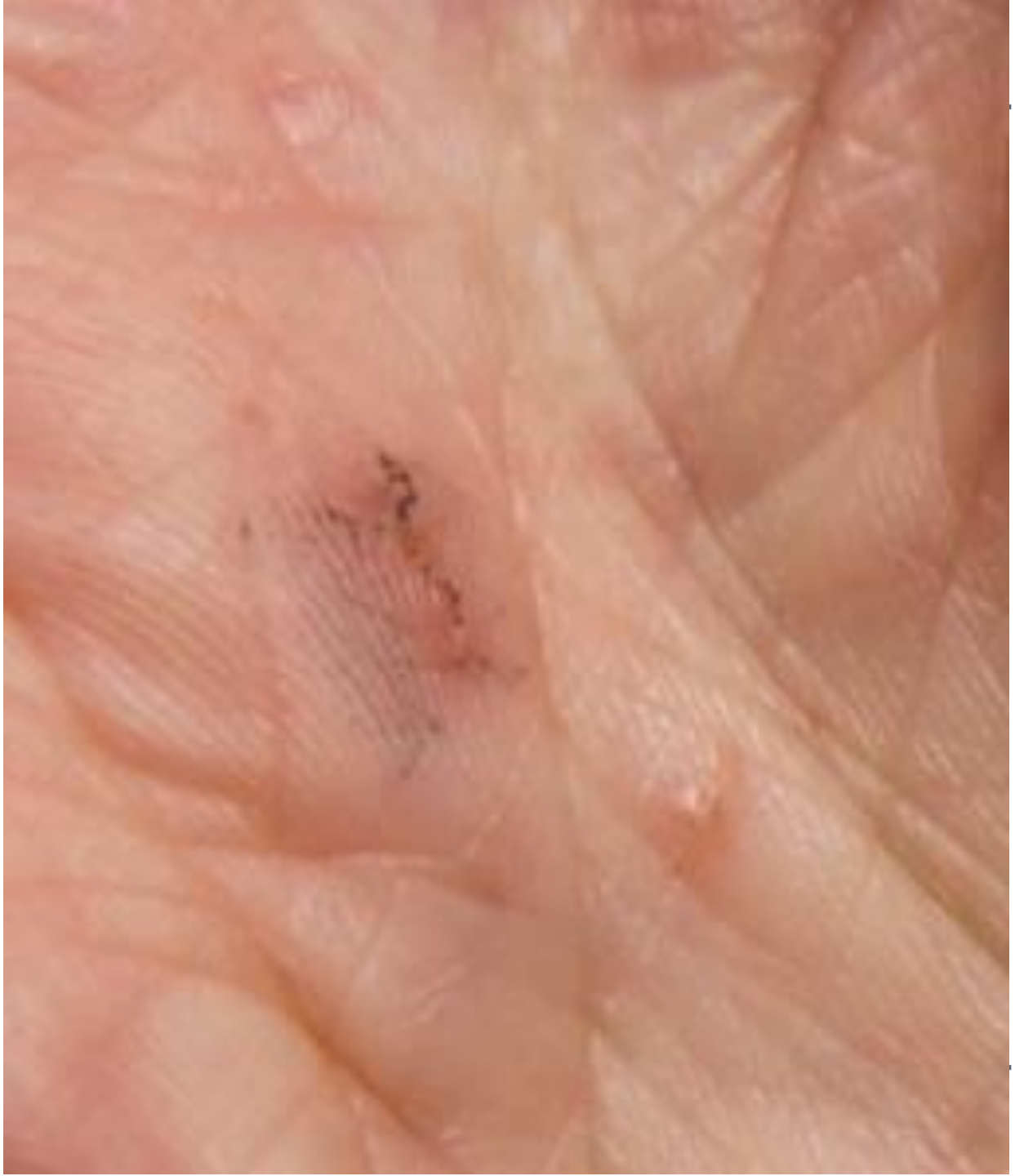
Scabies – Signs & Symptoms

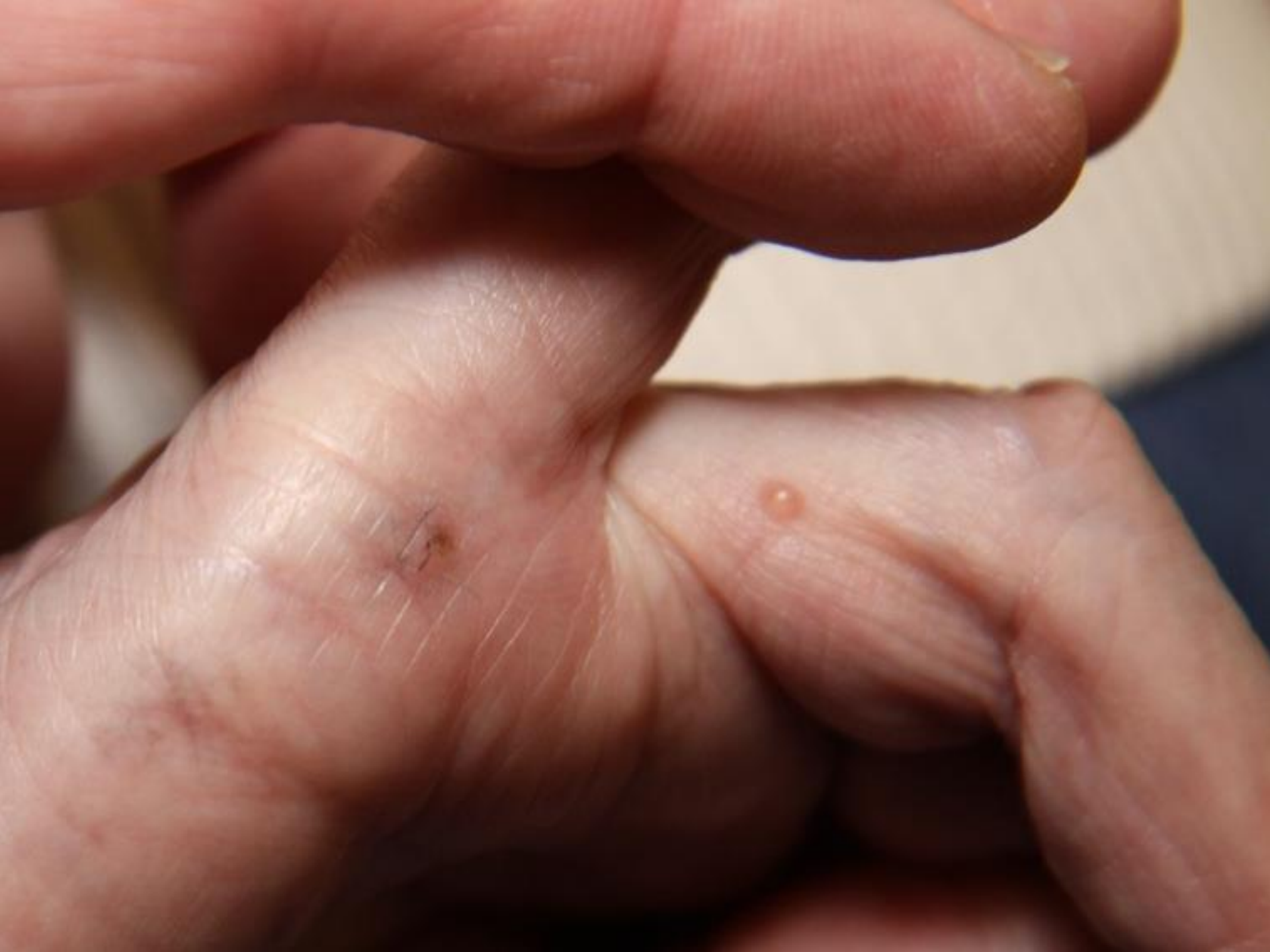
- Unfortunately, the classical findings are not as common as is an assortment of papules, vesicles, plaques, pustules and nodules that mimic other conditions. This is most true in Long-term Care where findings are varied and subtle.

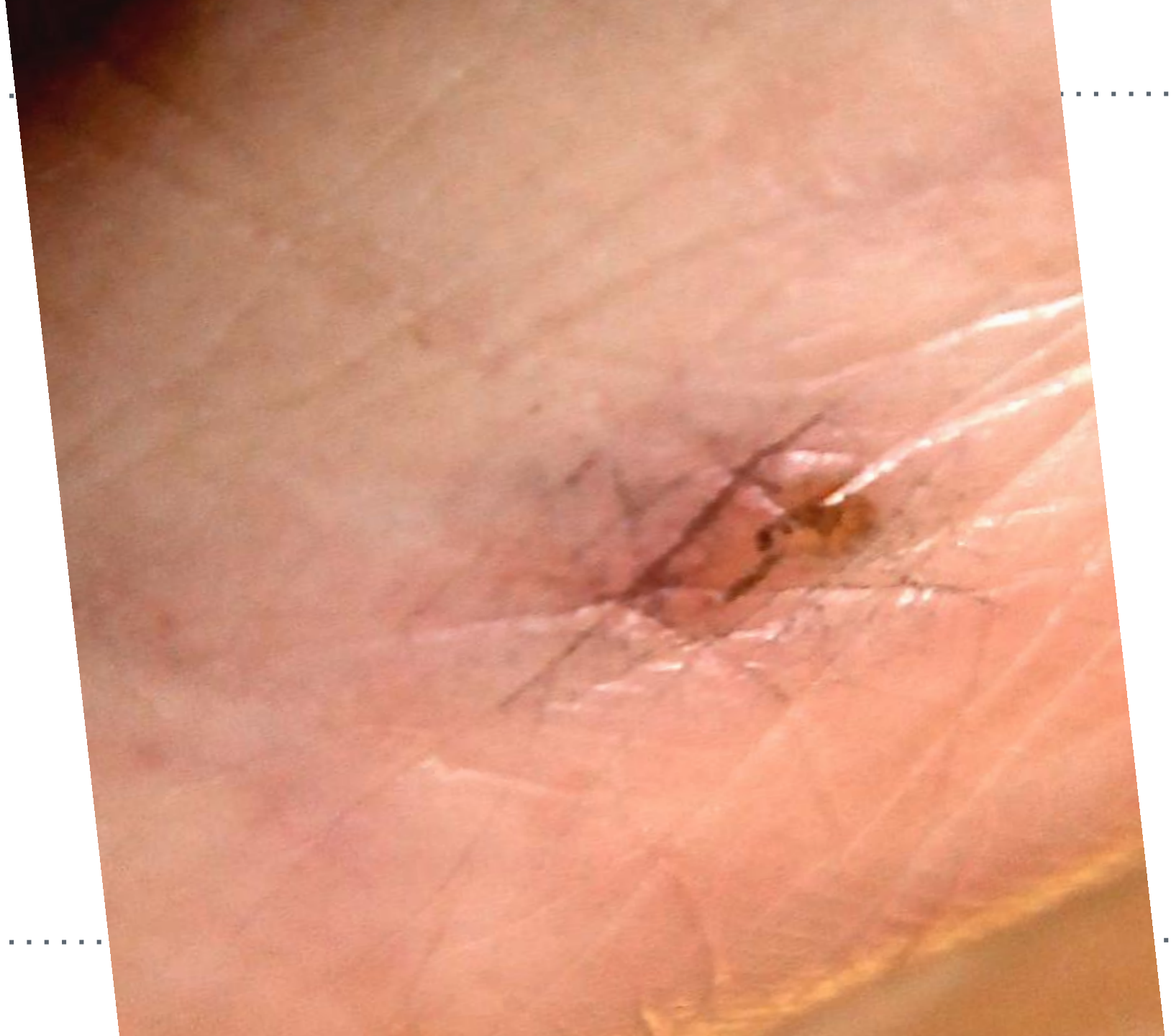
- Experience and expertise helps a lot to suspect the diagnosis of Scabies, but confirmation is desirable.

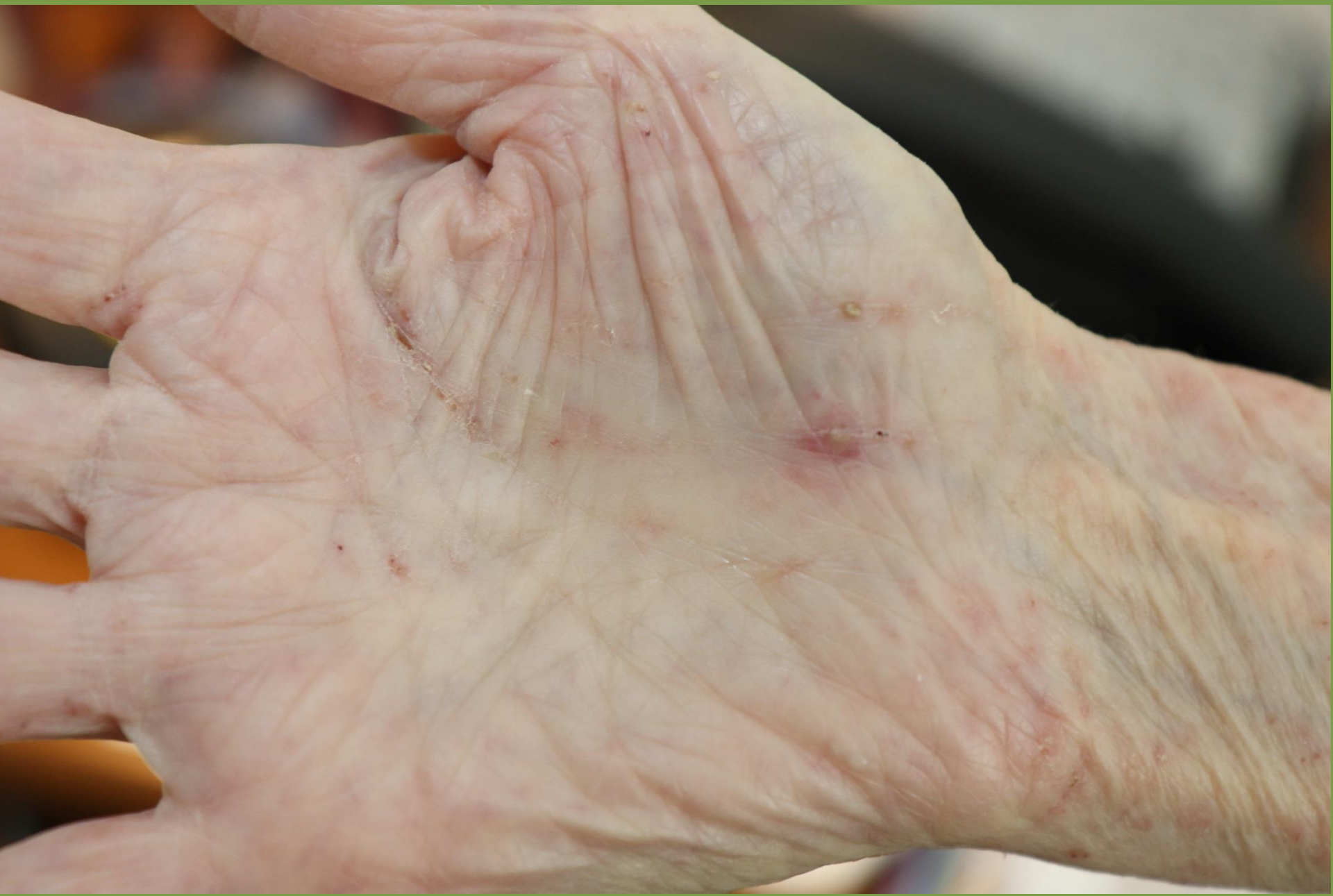
Scabies – Confirmation of diagnosis

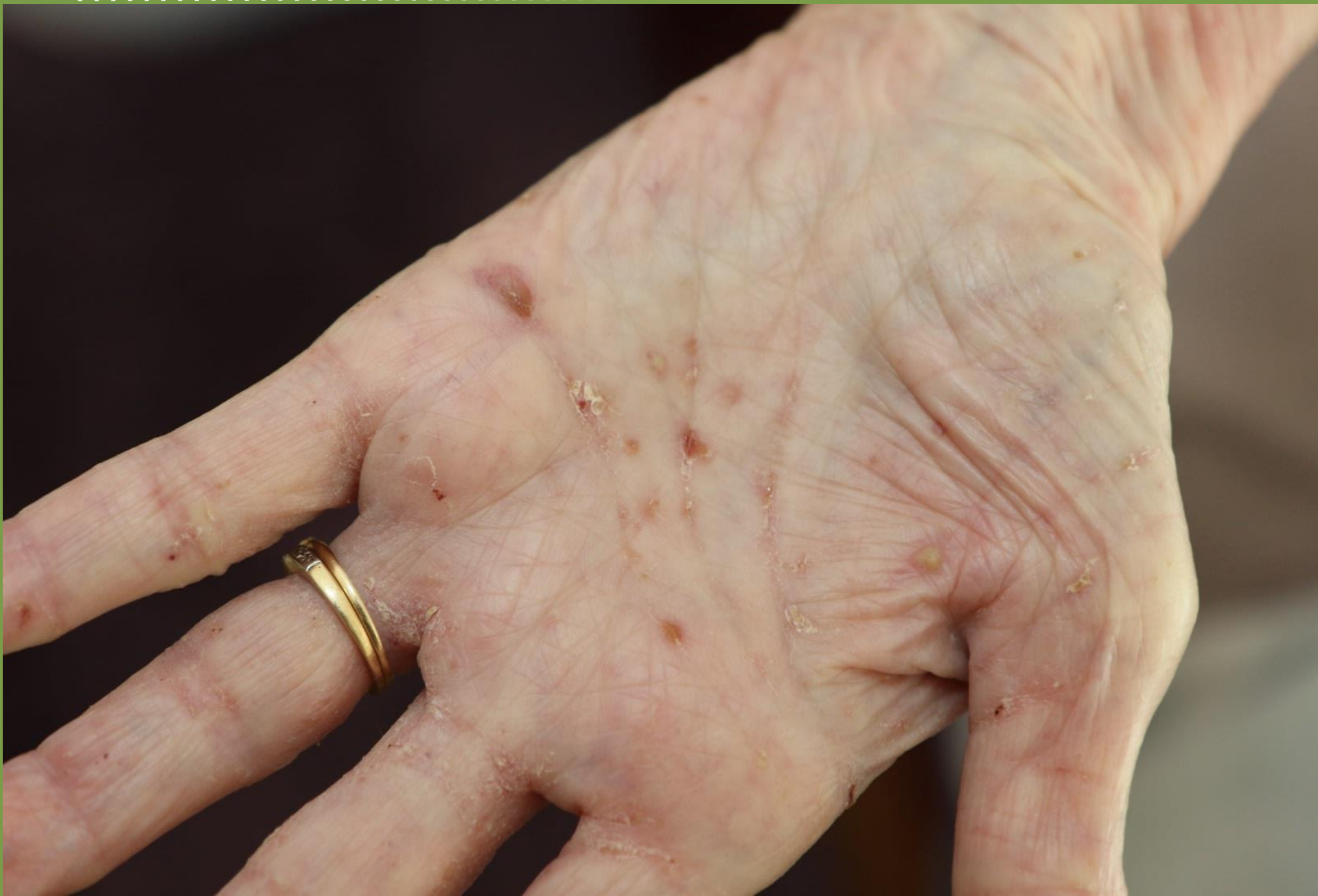
- Skin scrapings of discrete lesions
- Scrapings of crusted lesions
- Ink burrow test
- Dermatology consult

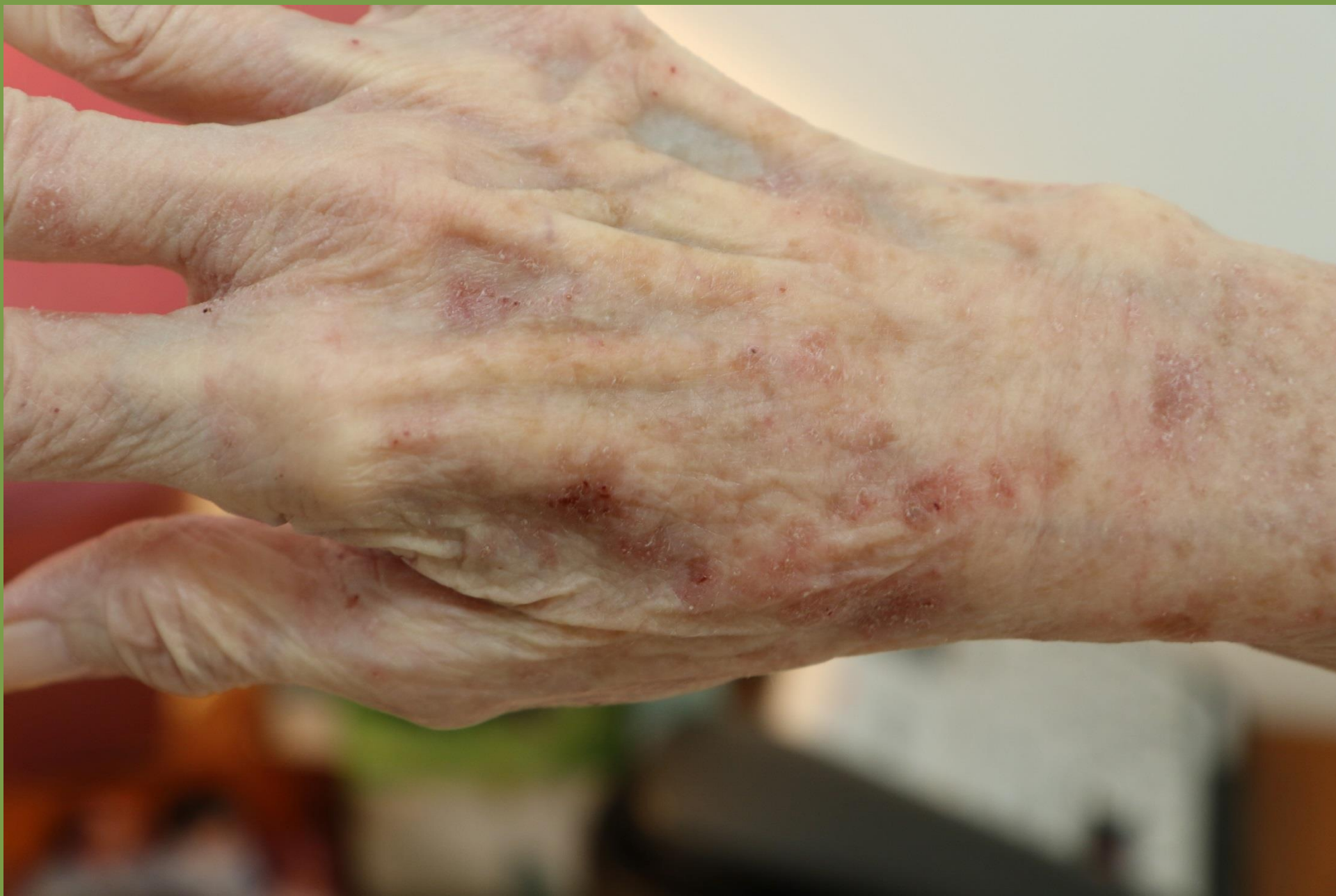




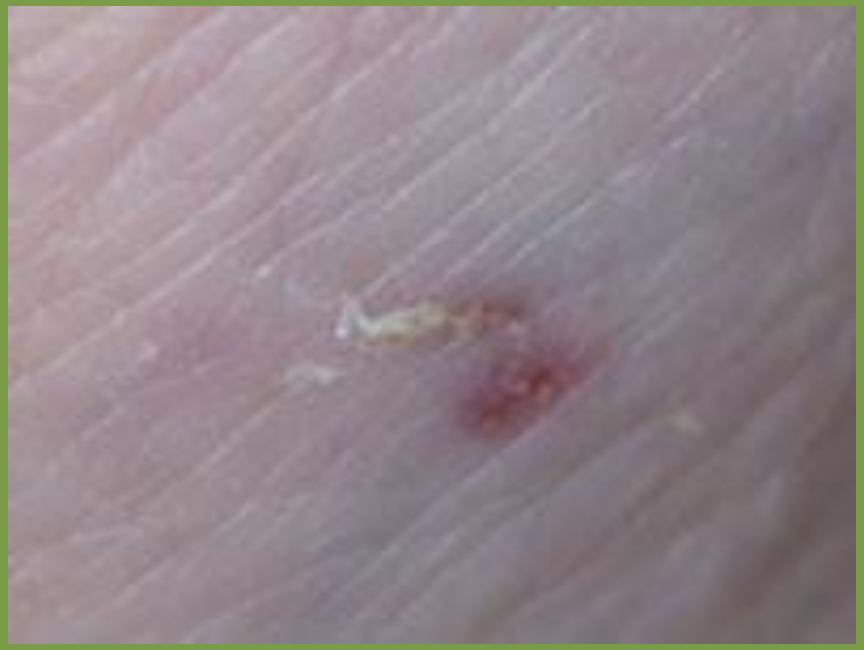


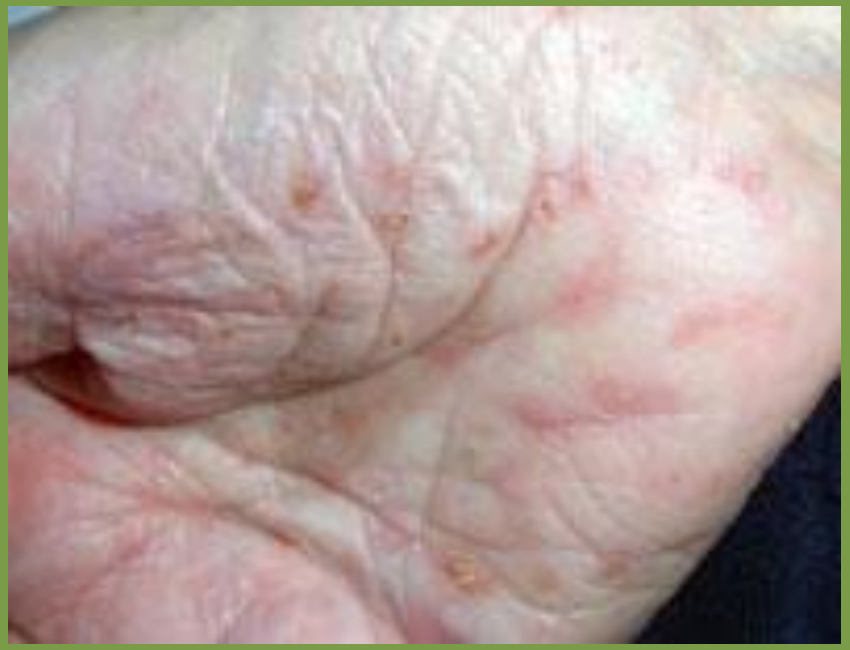






Typical Scabies





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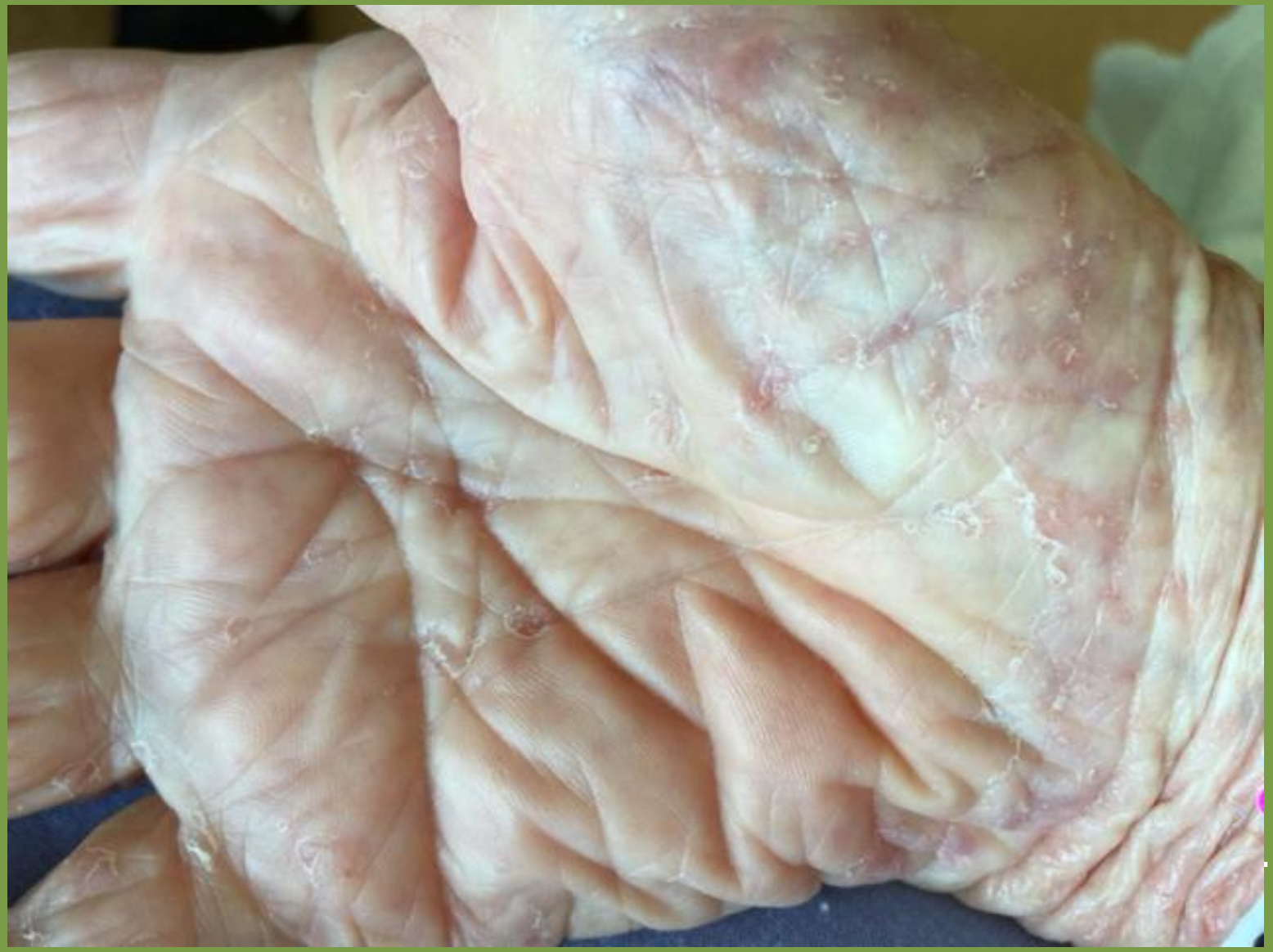

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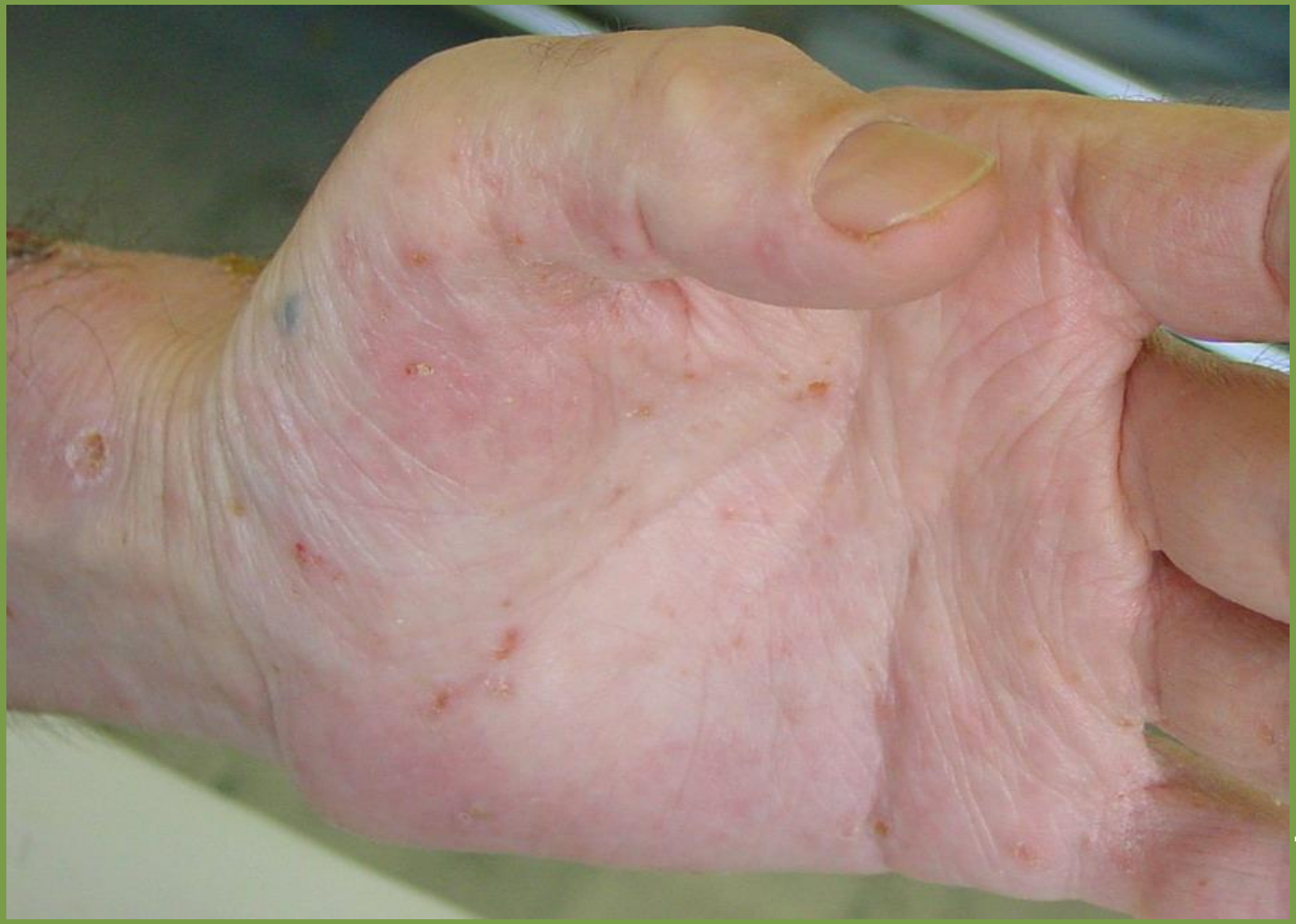

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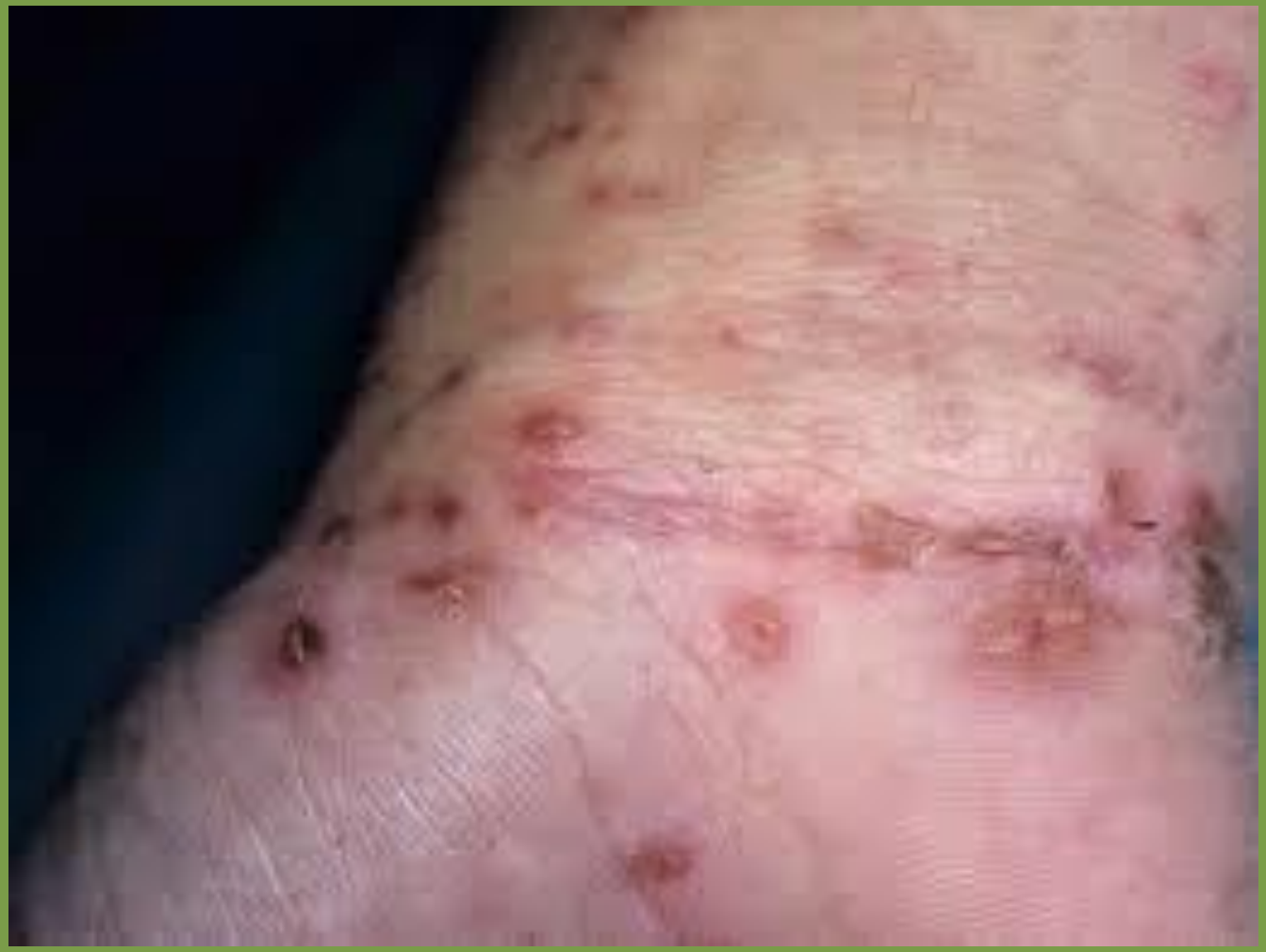

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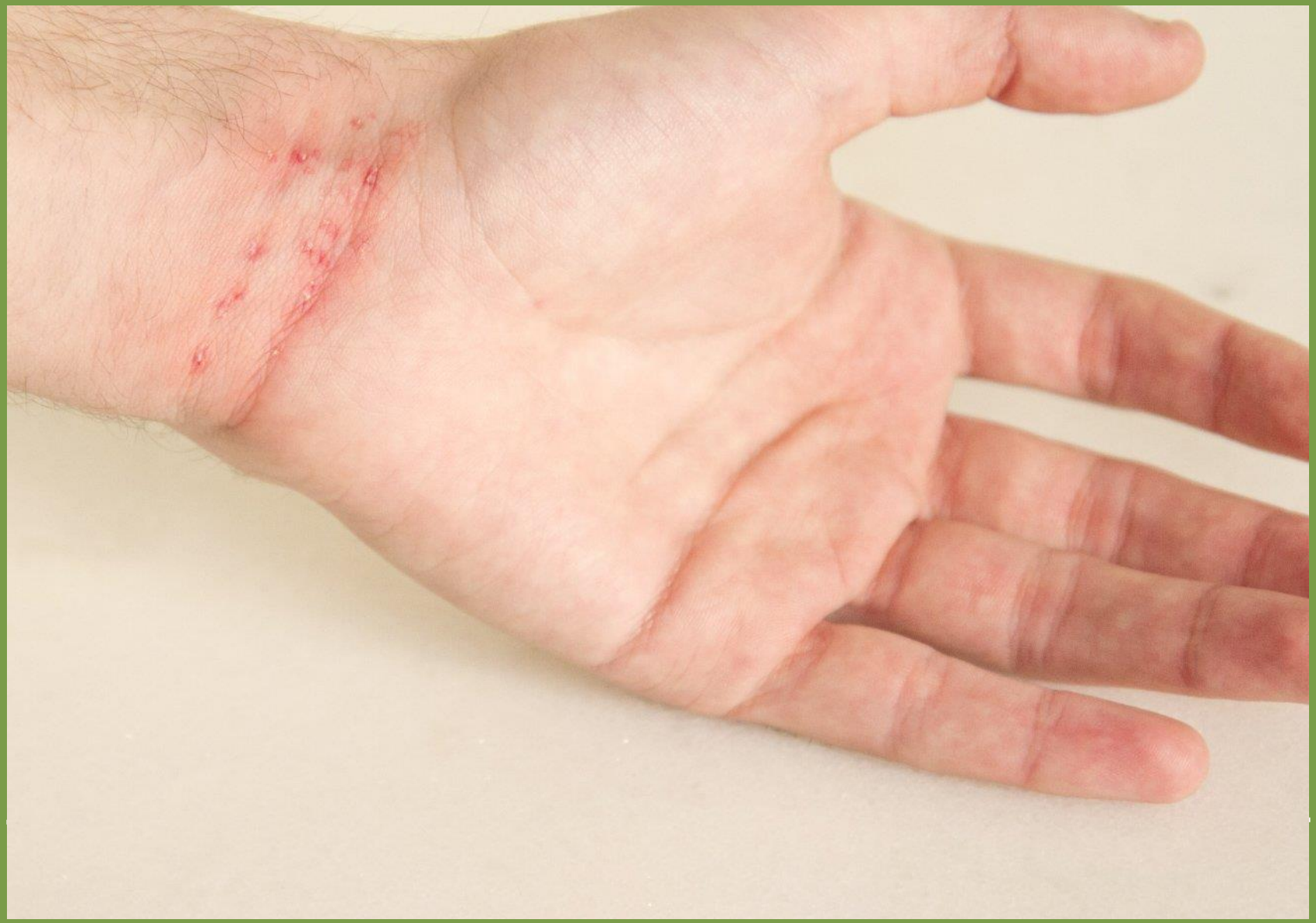

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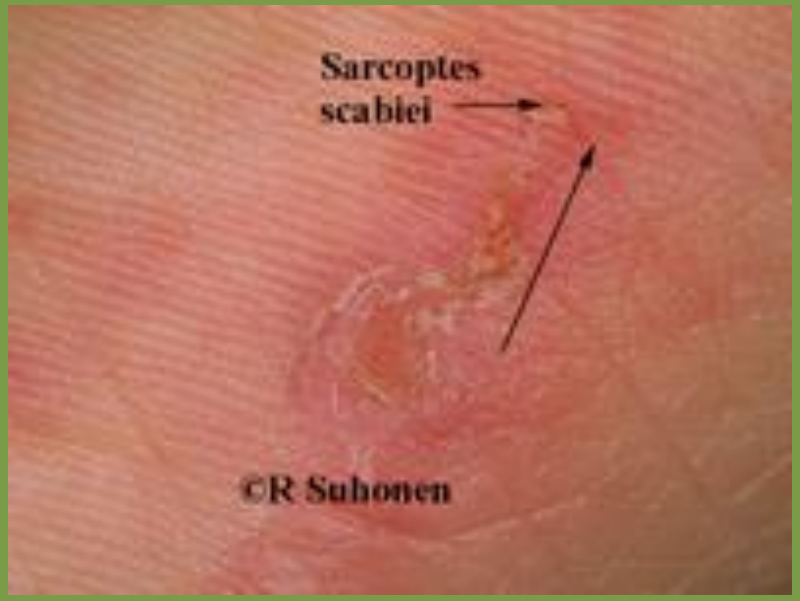

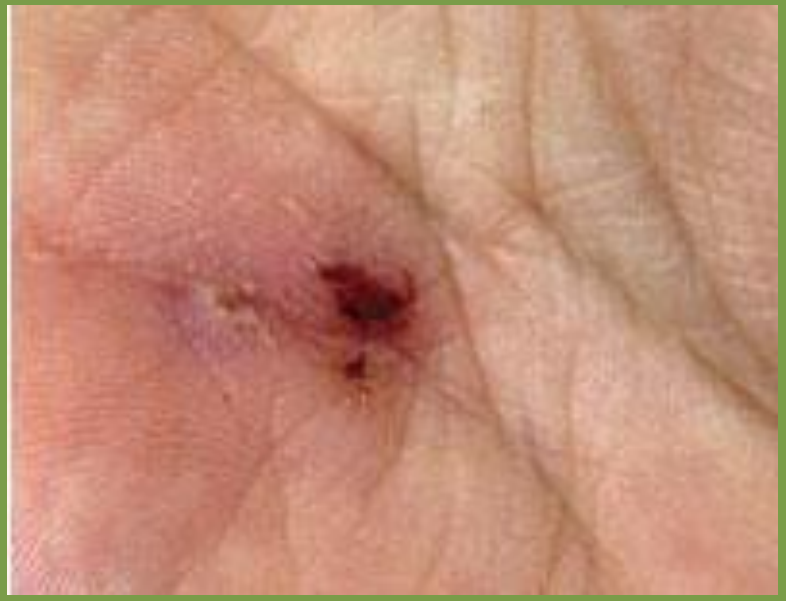

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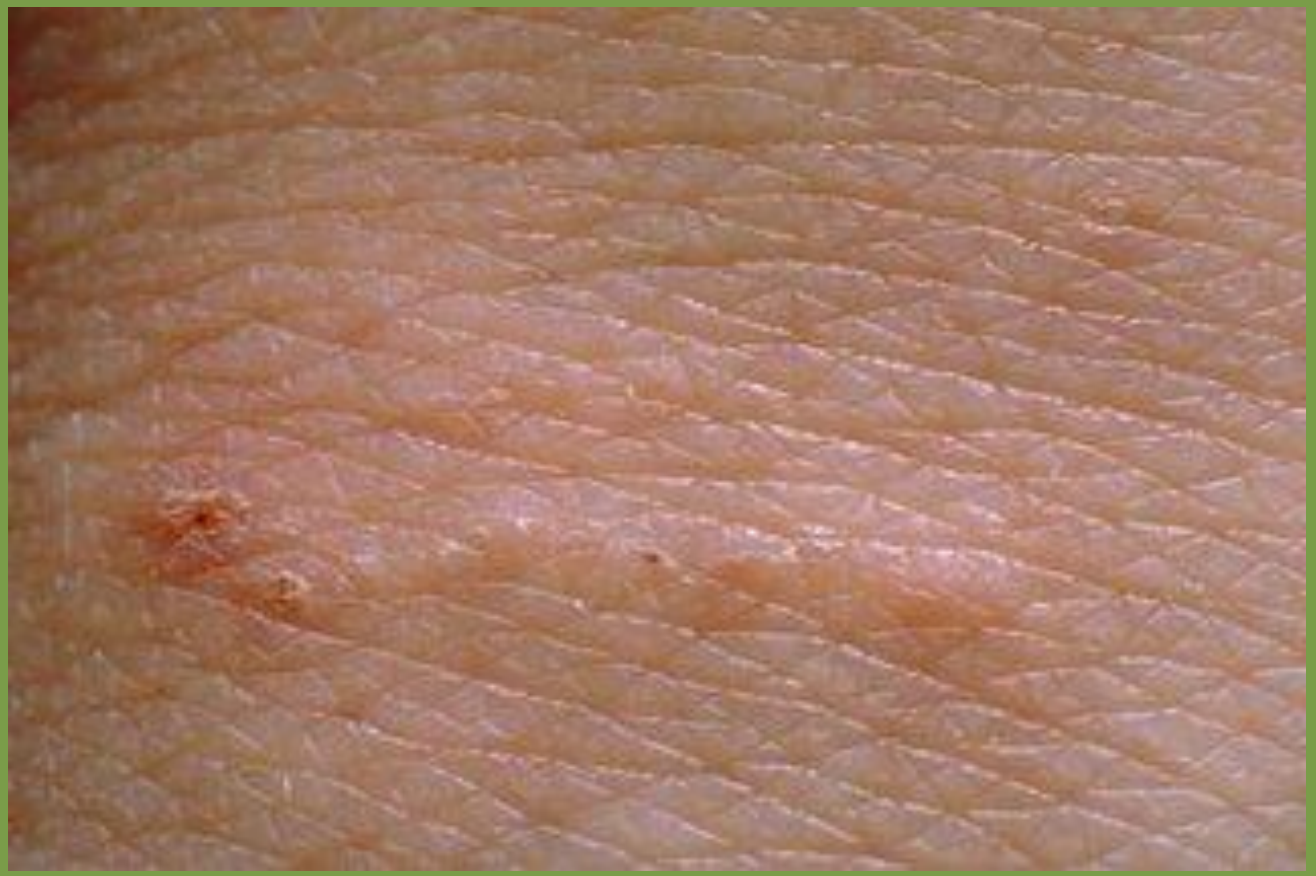

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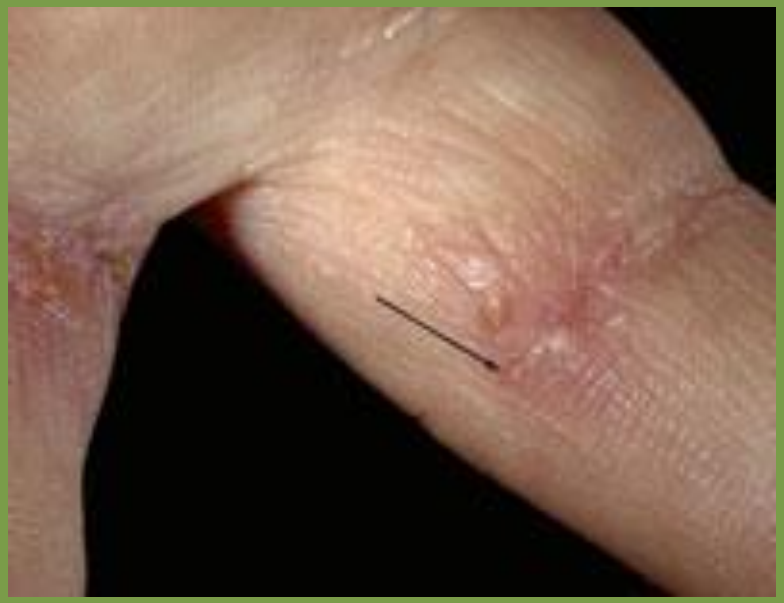

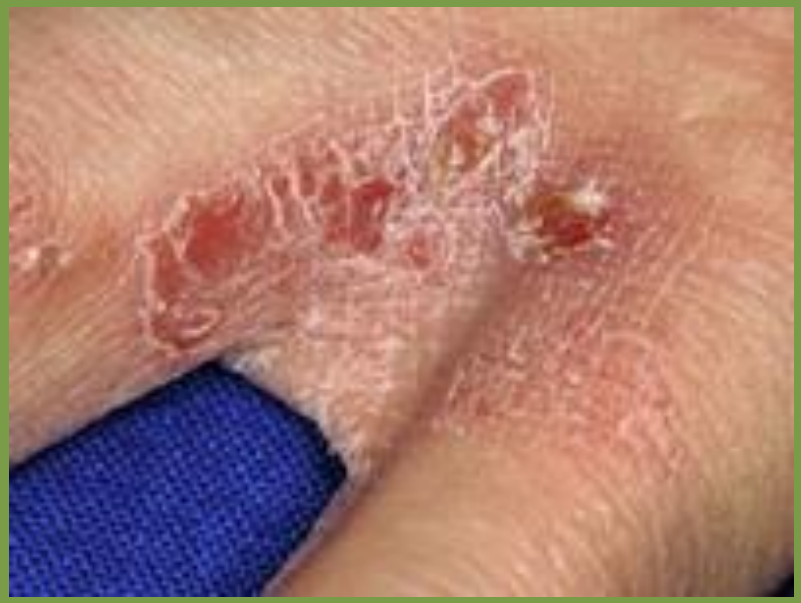

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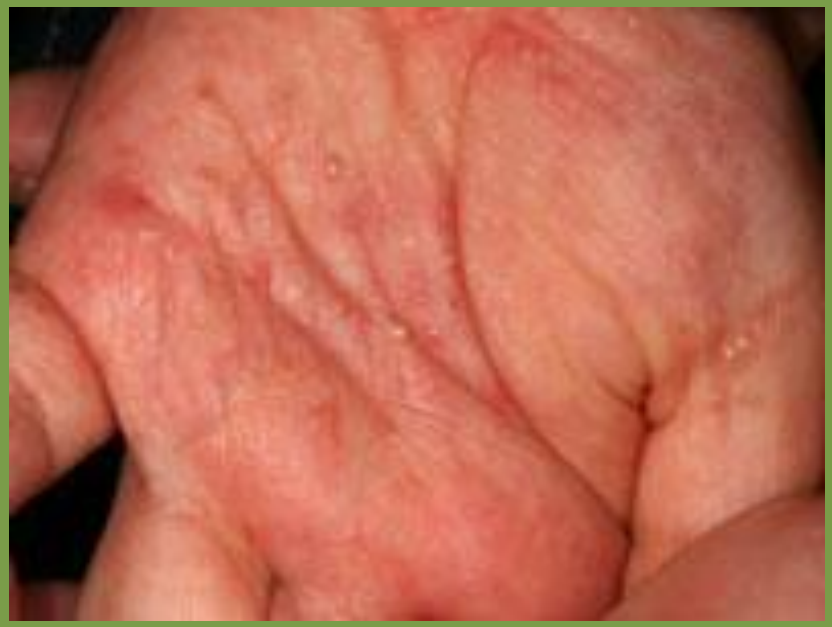

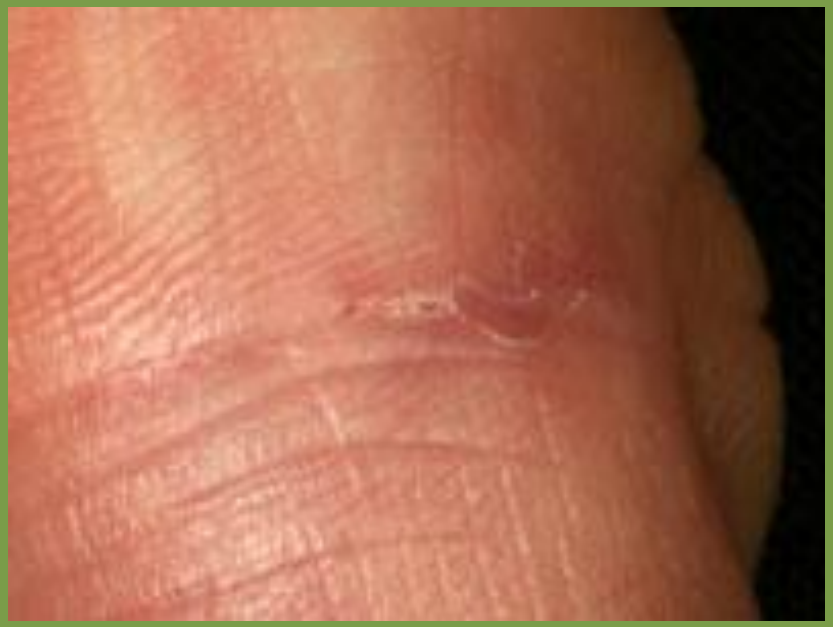

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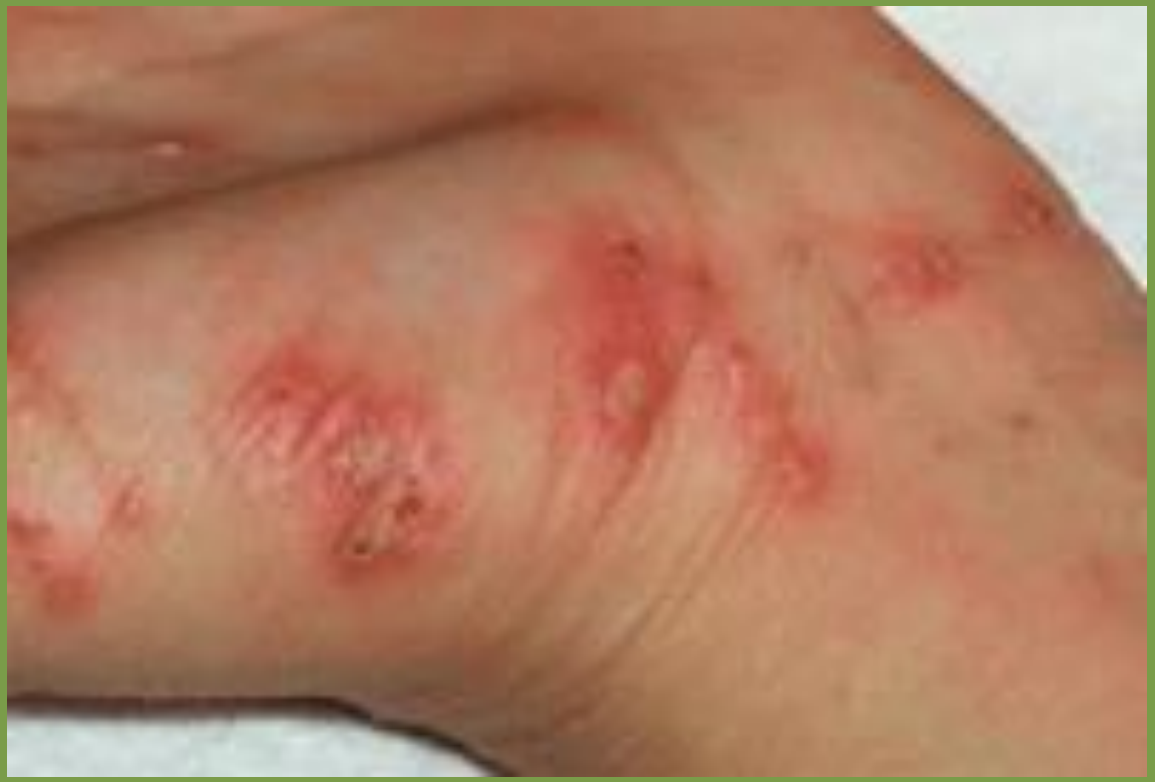
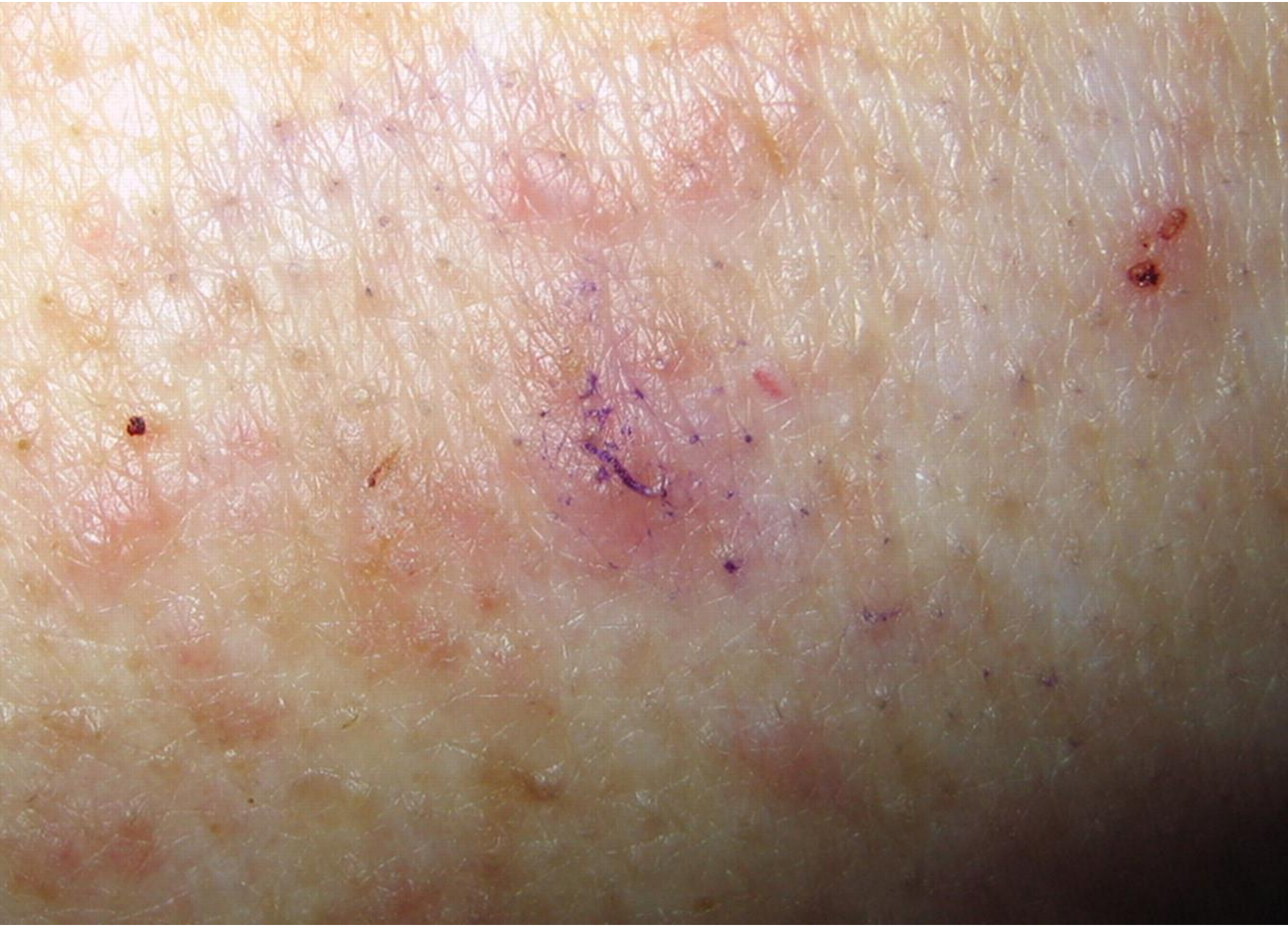




Treatment of Typical Scabies

- Permethrin 5% cream (Nix) applied to the entire body below the neck. Bath or shower 12 hours later. Repeat application of Permethrin cream in 7 days.
- Launder all clothes and linens in hot water.
- Rigorously do the same as above for all members of the household at the same time.
- Itchiness may persist for up to 6 weeks and is not an indication for retreatment.

Treatment of Typical Scabies

Treatment – future considerations

Ivermectin

- An oral, broad spectrum antiparasitic agent, derived from a *Streptomyces* species.
- In Canada until recently a Special Authorization drug and indicated for treatment of tropical parasitic worms.
- In Scabies is used alone or in combination with topical therapy; one or two doses.
- No more effective than topical Permethrin.

Case Report – Part 2

The Facility Infection Control person contacts me on the next day and I visit the unit the day after. Staff have a list of 7 residents (all female) that have similar rashes.

I examine 3 residents and confirm the diagnosis of Scabies. We have an outbreak.

SCABIES in LONG-TERM CARE

Almost always an outbreak situation; defined as one case of Crusted Scabies, or two or more Typical cases.

Compared to Typical Scabies in the community:

- Asymptomatic in ~50%
- Lack of burrows
- Subtle signs only, on areas covered by clothing in ~50%
- Persistence post-treatment

Cassell JA, et al. Scabies outbreaks in ten care homes for elderly people. *Lancet Infect Dis* 2018; 18:894-902

SCABIES in LONG-TERM CARE

Usual features of Long-term Care Outbreaks:

- a case of Crusted Scabies, and other cases of Typical Scabies
- Median of ~40% of residents involved, and dementia a considerable risk factor
- Staff involvement – likely 100% of outbreaks
- Protracted and delayed diagnosis
- inappropriate and/or insufficient treatment
- limited Infection Control precautions

SCABIES in LONG-TERM CARE

Quebec 2003

- a prolonged outbreak in a 387 bed LTC facility, involving all 6 residential floors.
- all of the previous features apparent.
- costs were over $200,000 and negative media publicity
- another outbreak 8 months later

De Beer et al. *Infect Control Hosp Epidemiology* 2006; 27:517

SCABIES in LONG-TERM CARE

Ontario 1986

Two LTC facilities with persisting Scabies outbreaks

- one rural, one in Toronto
- political, labor union and OHS concerns led to Ministerial involvement; and coordinated assessments and treatments

Institution A

- 10 cases in the 59 residents, one with Crusted Scabies
- mass treatment of all residents and visiting family members, and all staff and their families
- resulted in successful eradication

SCABIES in LONG-TERM CARE

Ontario 1986

Institution B

- one ward had 19 cases in 33 residents, 3 with Crusted Scabies. No cases on two other wards.
- mass treatment of all residents and visiting family members, and all staff and their families
- relapses in all 3 cases of Crusted Scabies requiring re-treatments, which resulted in successful eradication

CRUSTED SCABIES

- also known as Norwegian Scabies
- almost always found in Long-term Care
- a hyperinfestation with hundreds or even thousands of mites
- is extremely contagious – contact and environmental
- if even a single resident has Crusted Scabies, it is a Scabies outbreak

CRUSTED SCABIES

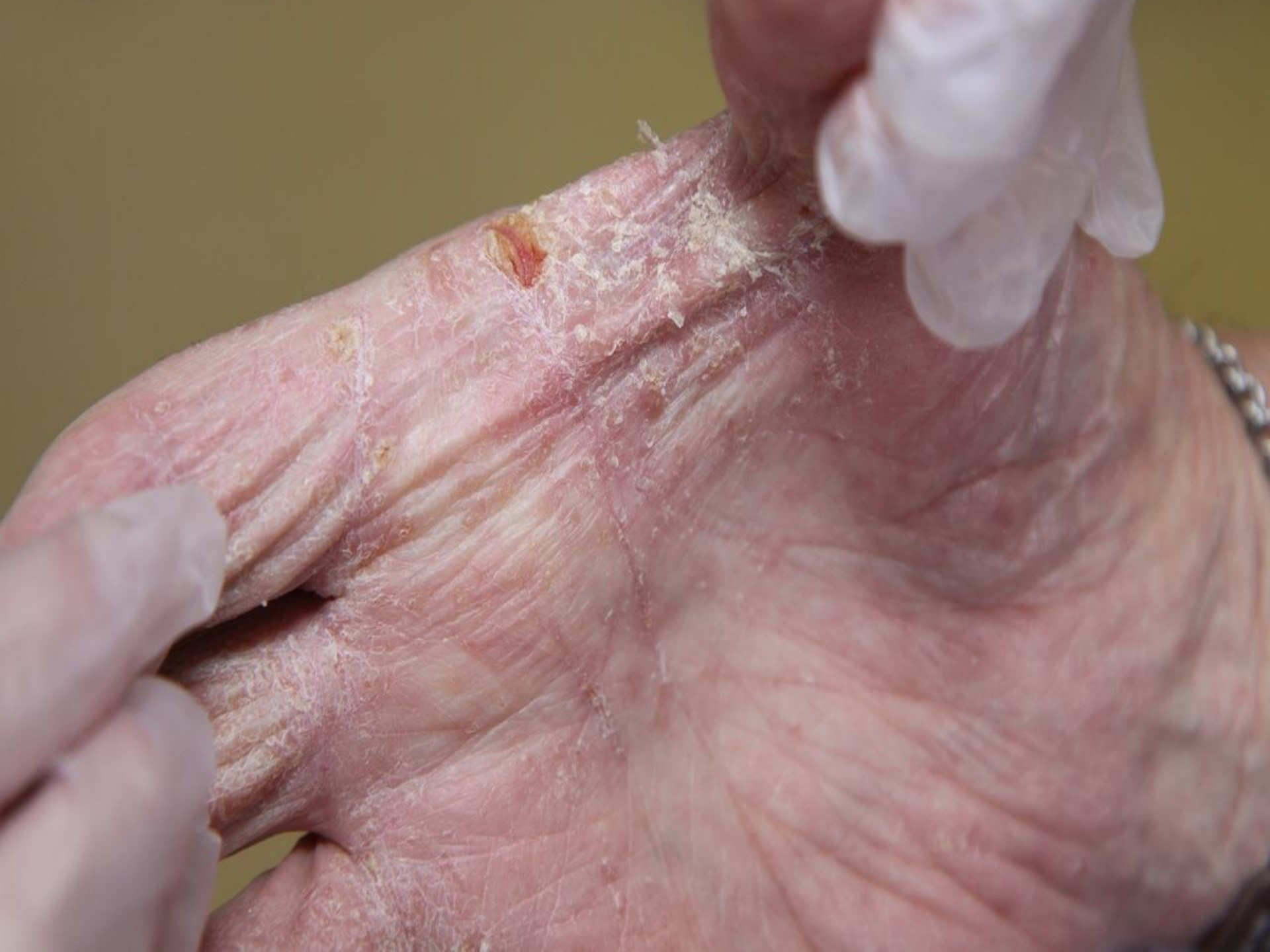
Signs & Symptoms

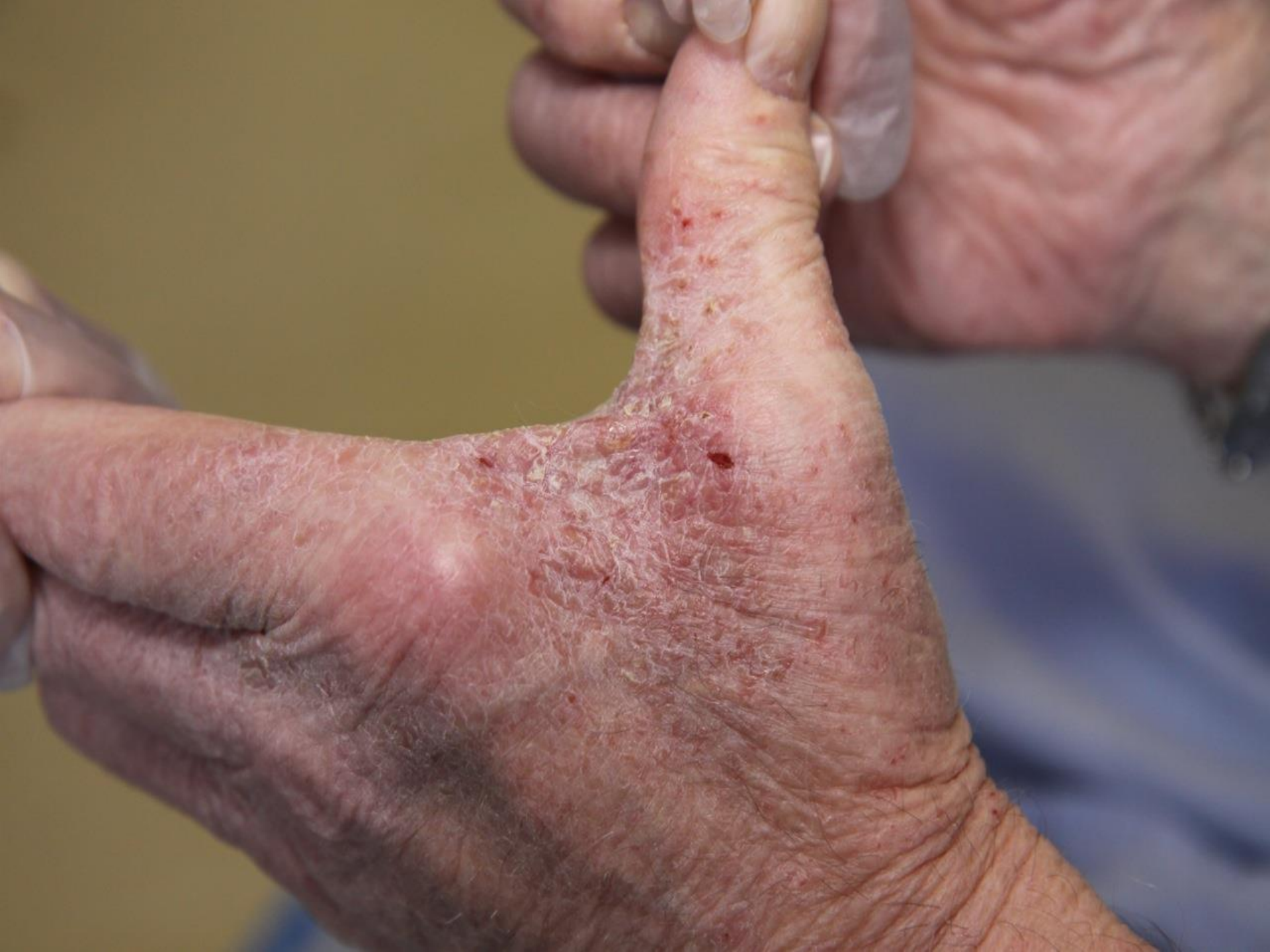
- widespread scaly rash, worst on hands and feet
- resembles psoriasis or eczema with heavy crusting and scaling
- deep **Fissures**, especially at **Creases**
- sparing of fingertips
- intense itchiness, especially at night
- obvious, but often unrecognized as Scabies

Case Report Part 3

Has anybody else here had an itchy or scaly rash for some time?

- **Mr. H, a 90 year old man, has had an itchy rash since his admission 9 months ago. He is known to often have hand-to-hand contact with female residents (holding hands while sitting together on a sofa).**
- **I examine him and clinically diagnose Crusted Scabies. Skin scrapings are sent to the lab and Scabies is confirmed.**





CRUSTED SCABIES

Case Report – Chart Notes

- **May 10** — **HC 1% cream x 3 weeks**
- **July 10** — **HC 1% cream x 14 days**
- **July 21** — **HC 1% cream x 4 weeks**
- **July 30** — **Rash noted on back. Cream applied. Will monitor**
- **Aug 8** — ***rash areas noted on back, abdomen + arms***
- **Aug 9** — **Atarax 10mg TID x 5 days then prn**
- — **non specific rash, excoriated papules**
- **Aug 12** — ***rash areas noted on back, abdomen + arms***
- **Aug 17** — ***1300hr slight improvement***

  2230 rash significantly worse on back, chest, abdomen and legs. resident has scratched at the rash and now open areas.
- **Aug 18 AM** — **T.O. HC 1% BID x 2 weeks then prn**
- **Aug 18 PM** — **Atarax 25mg BID x 2/52**
- — **papular scattered rash over dorsum of arms + torso**

Case Report – Chart Notes

- **Aug 27** — **Atarax 25mg QHS**
- **dry papular rash**
- **Sept 9** — ***scratching ++***
- **Sept 14** — ***got itchy after shower, rash significantly worse***
- **Sept 17** — ***0000 resident was scratching all over body, small spots noted***
- **Sept 17** — ***0045 resident still up scratching. Rash all over body.***
- **Sept 17** — ***0630 Resident woke up +started scratching***
- **Sept 26** — ***residents hands are very cracked with open areas between fingers***
- **Oct 10** — ***residents hands are very rough, are cracked + bleeding between fingers Message left for Dr***

Betnovate 0.1 % cream BID
very uncomfortable
itchy rash not healing

Case Report – Chart Notes

- **Nov 1** — ***Staff reported bad hand dryness***
- **Nov 12** — **Betnovate 0.1 % cream BID x 4 weeks to hands**
- **Dec 1** — ***Res. up at 0300 scratching requesting staff to scratch his back***
- **Dec 16** — ***Up and scratching all over. Unable to sleep***
- **Dec 17** — **Reactine 10mg QHS D/C Atarax**
- **scratches x7days dry patches back**
- **hands are better**
- **Dec 21** — ***0015 Resident up scratching ++***
- **Dec 28** — ***multiple scratch marks and rashes all over body***
- **Jan 8** — **Reactine 10mg BID**

  nsg staff-states pt is very itchy

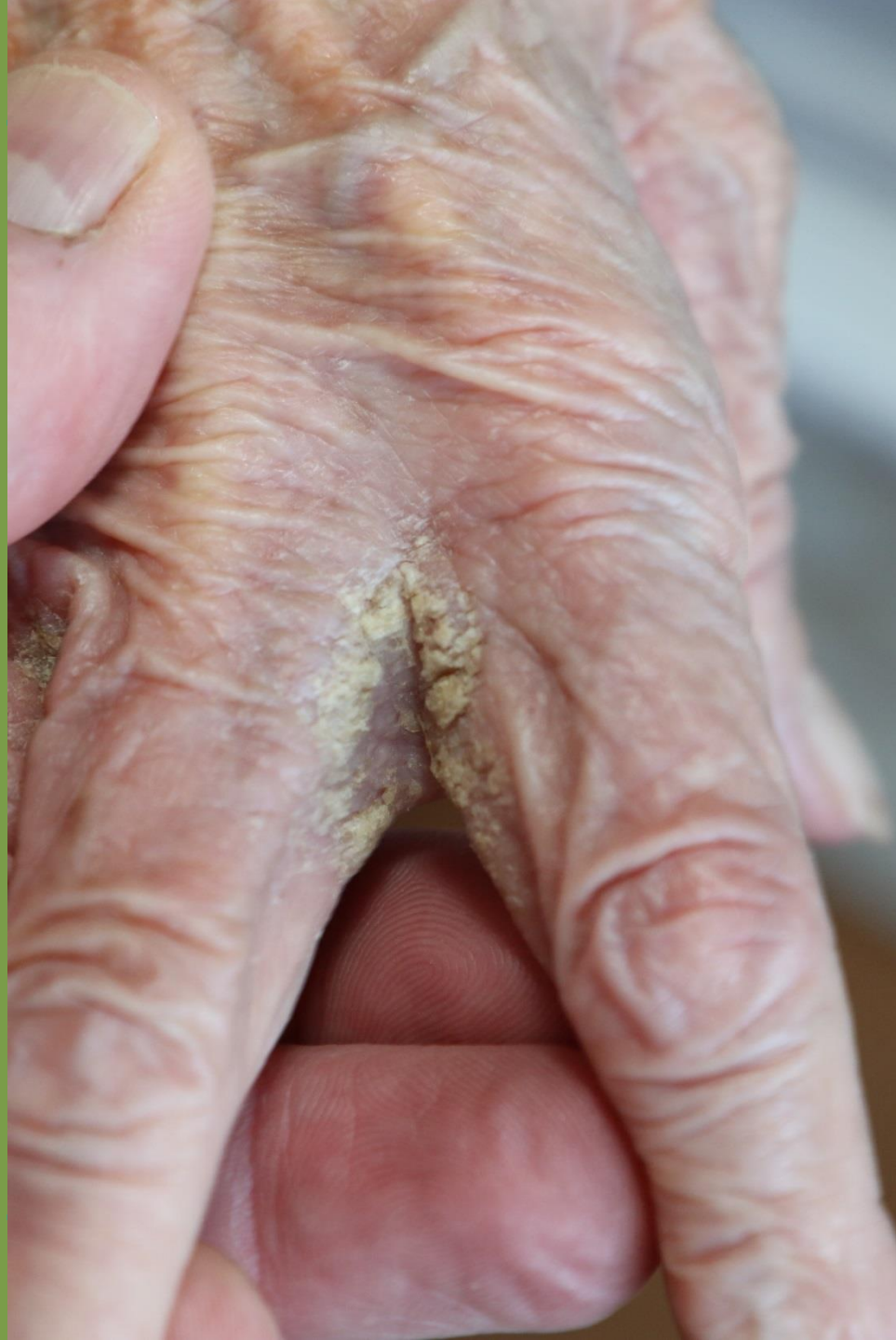
  (esp in QAM) + ?rash
- **Jan 9** — **Atarax 10mg TID prn**
- **Jan 10** — ***up most of the night***
- **Jan 14** — **itch (? improvement of HS Reactine)**
- **Jan 25** — ***awake most of the night, stripping scratching***

Case Report – Chart Notes

- **Jan 8** — **Reactine 10mg BID**
  nsg staff-states pt is very itchy
  (esp in QAM) + ?rash
- **Jan 9** — **Atarax 10mg TID prn**
- **Jan 10** — ***up most of the night***
- **Jan 14** — **itch (? improvement of HS Reactine)**
- **Jan 25** — ***awake most of the night, stripping scratching***

- **Feb 2** — **Nix Rx, skin scrapings to Lab**
- **Feb 4** — **Salicylic Acid 5% in Petrolatum QAM to hands + feet x 7days**
  Nix cream to body QHS x 7 days
  Shower QAM
- **March 4** — ***scratching ++***
- **March 11** — **D/C Reactine** — ***not itchy now, sleeping better***

CRUSTED SCABIES



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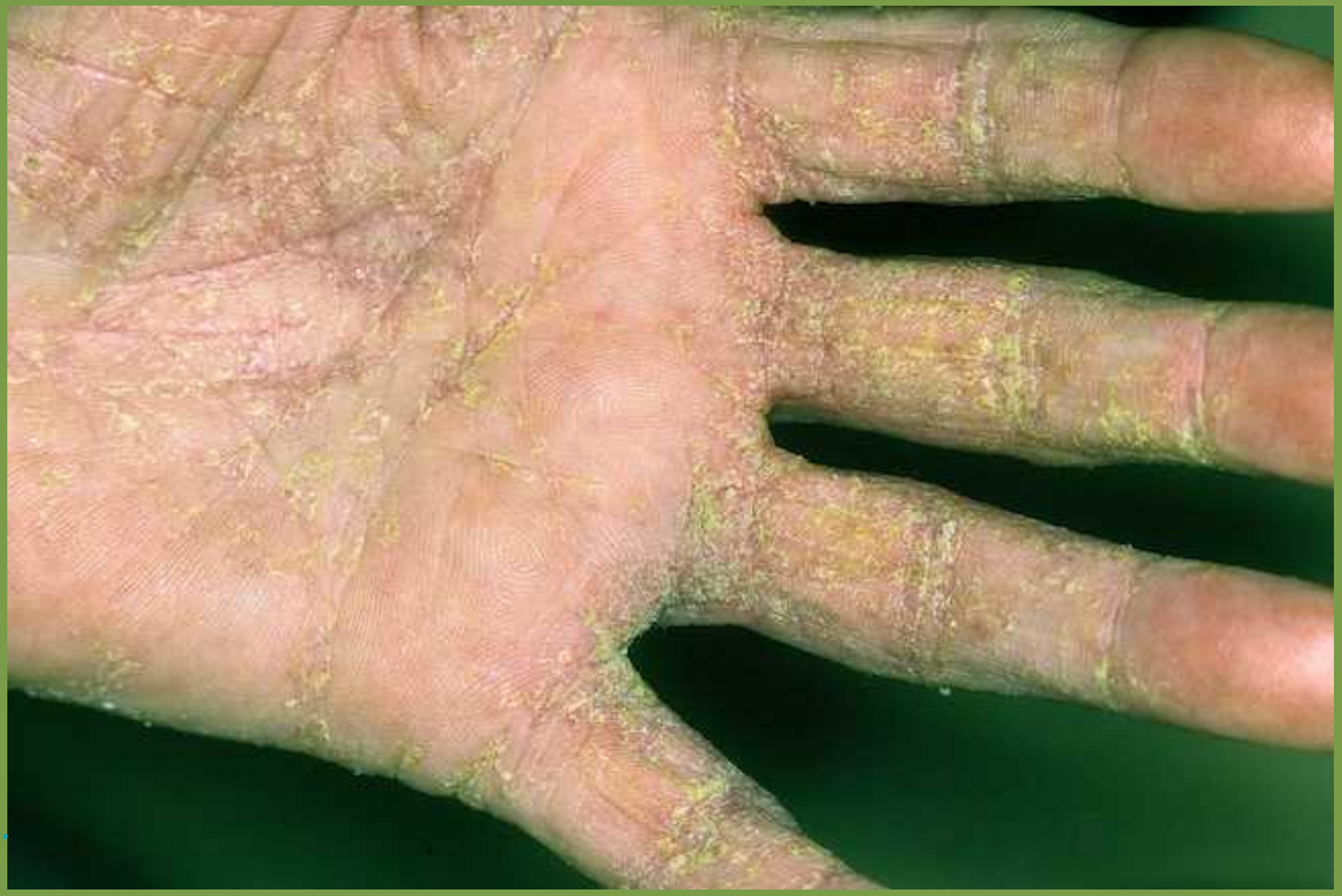
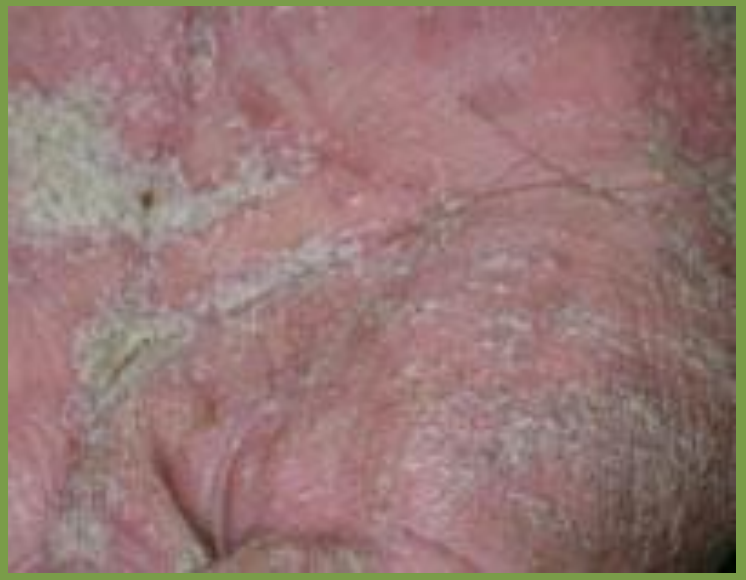


CRUSTED SCABIES



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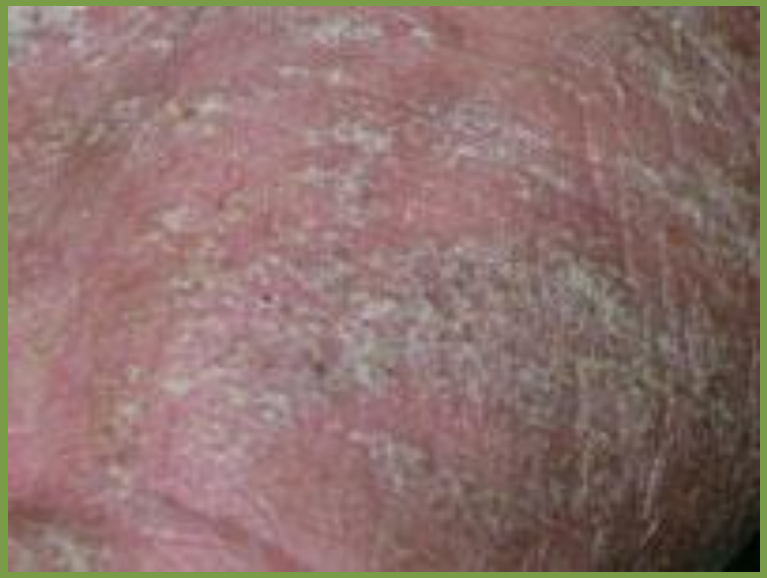

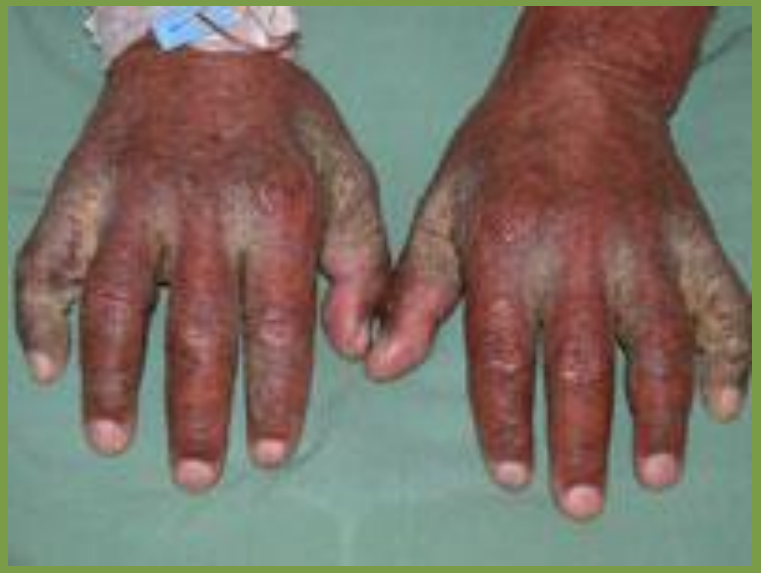

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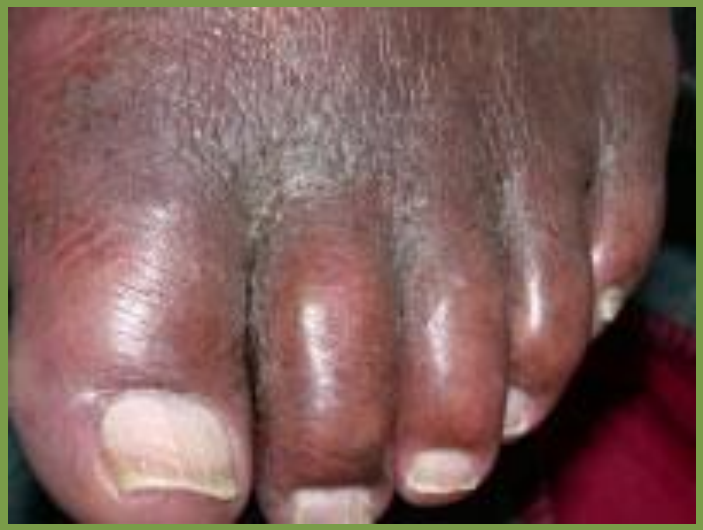

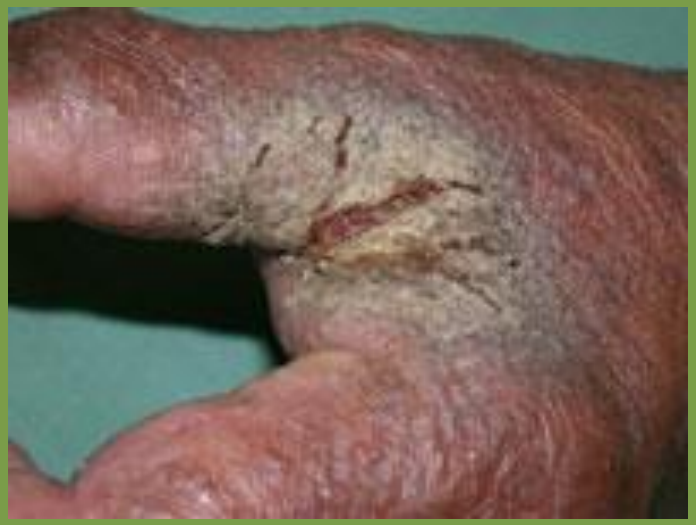

Scabies in LTC Facilities

Don’t Panic!

Management – General Measures

- Coordinated outbreak management – Care Managers, Director of Care, Infection Control Person, Medical Director.
- Clear and nonconflicting informative communication of residents, staff, family members and visitors to gain cooperation and improve effectiveness.

Scabies in LTC Facilities

Management - Treatment

- find the resident with Crusted Scabies
- confirm the diagnosis if possible.
- delineate the extent of the outbreak amongst residents and amongst staff.
- **appropriate** and **simultaneous** treatment (within a 24 – 48 hour period) to residents and staff; family members of staff and residents; frequent visitors
- reduce visitors for a period
- ongoing surveillance – at 1, 4, 12 and 26 weeks

Scabies in LTC Facilities

Treatment

Typical Scabies

- Permethrin (Nix) cream twice, 7 days apart.
- itchiness may persist for a few weeks and is not a need for retreatment with Permethrin.
- a possible situation for oral Ivermectin?

Treatment

Crusted Scabies

- **SCABICIDAL** - Permethrin 5% cream (Nix) applied QHS daily for 7 days (or alternately Q1 – 3 days, until mites no longer present, or skin cleared).
- **KERATOLYTIC** - Salicylic Acid 5% in Petrolatum QAM daily to crusted areas for 7days (or topical Urea).
- a possible situation for oral Ivermectin?

Scabies in LTC Facilities

Management – Environmental

- isolate the Crusted Scabies cases for 7 days
- launder all bedding and clothes used in last 72 hours, or at least isolate clothing for 72 hours, or hot dryer if not washable.
- hospital gowns and pajamas.
- environmental cleaning (Hotel Clean) with attention to communal areas and chairs and sofas.

Case Report – Part 4

We concluded that the outbreak was confined to the index unit.

- ***isolated the index case of Crusted Scabies***
- ***all 25 residents treated appropriately and simultaneously***
- ***all personal items laundered***
- ***residents wore hospital pajamas and gowns for seven days.***

Case Report – Part 4

- ***treatment of 7 staff members, 3 with minimal symptoms.***

- ***information provided to all staff advising treatment of themselves and household members; and advising contact with their Family Physician if they had further questions.***

Case Report – Part 4

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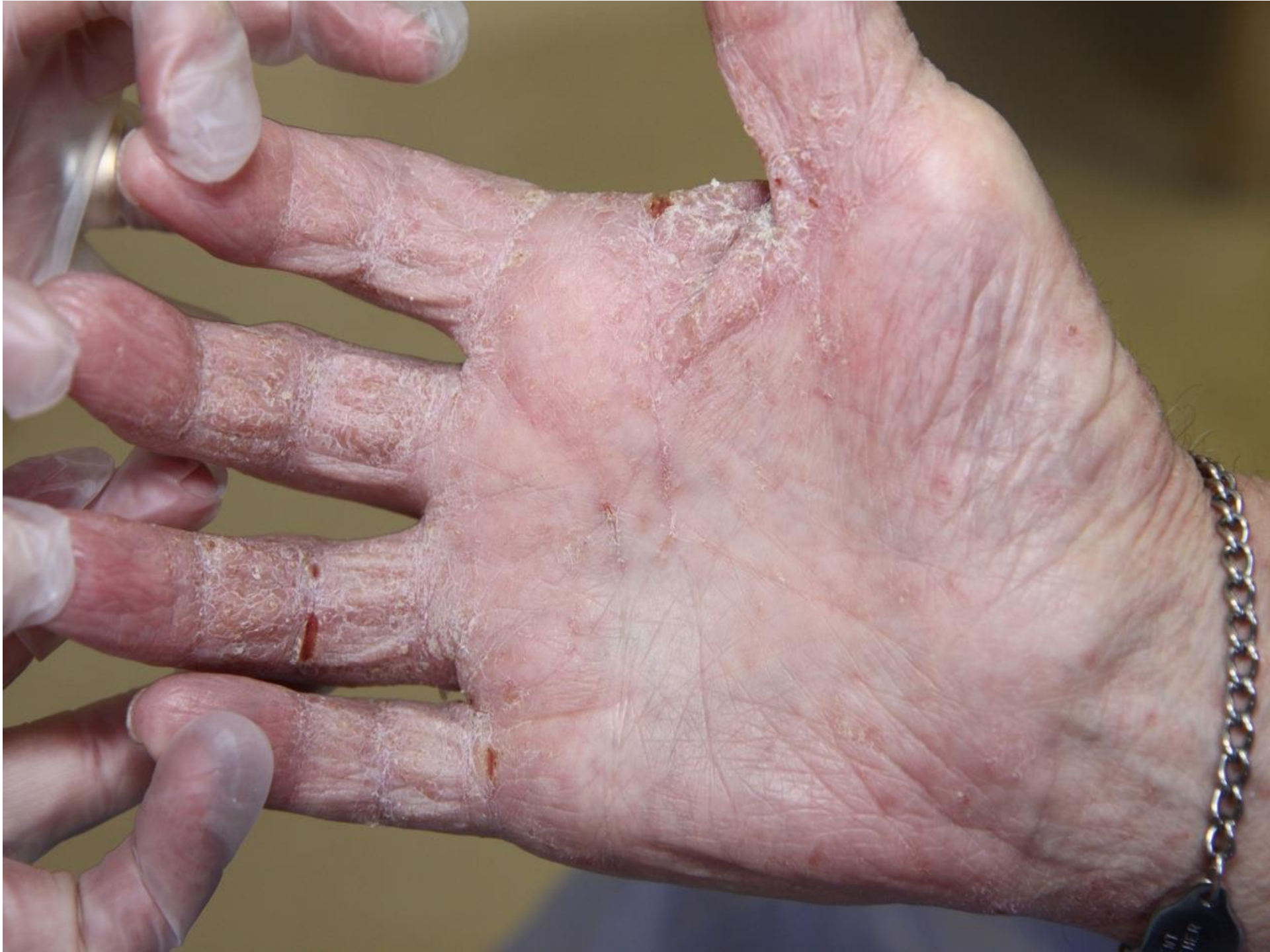
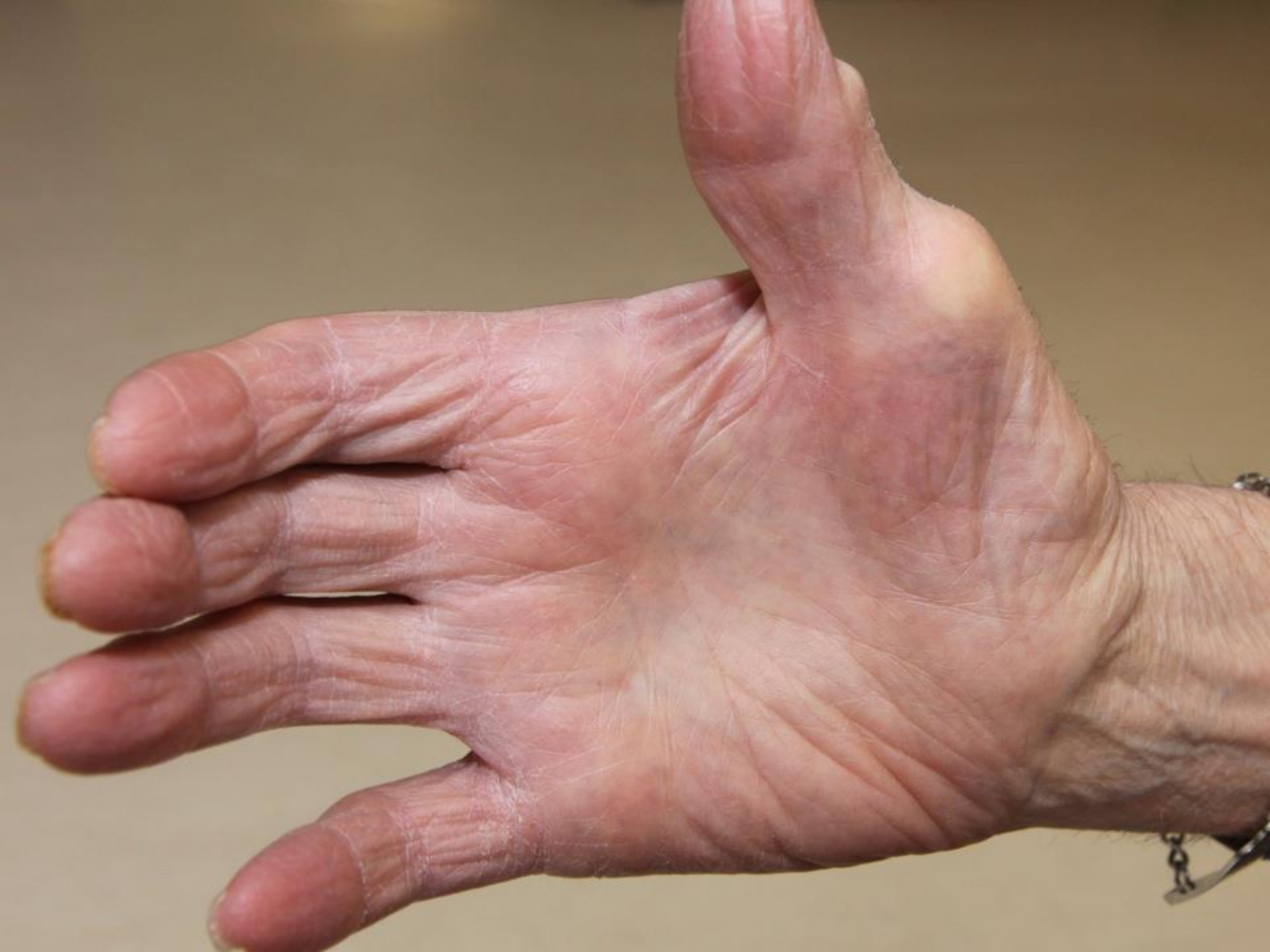
Case Report – Part 4

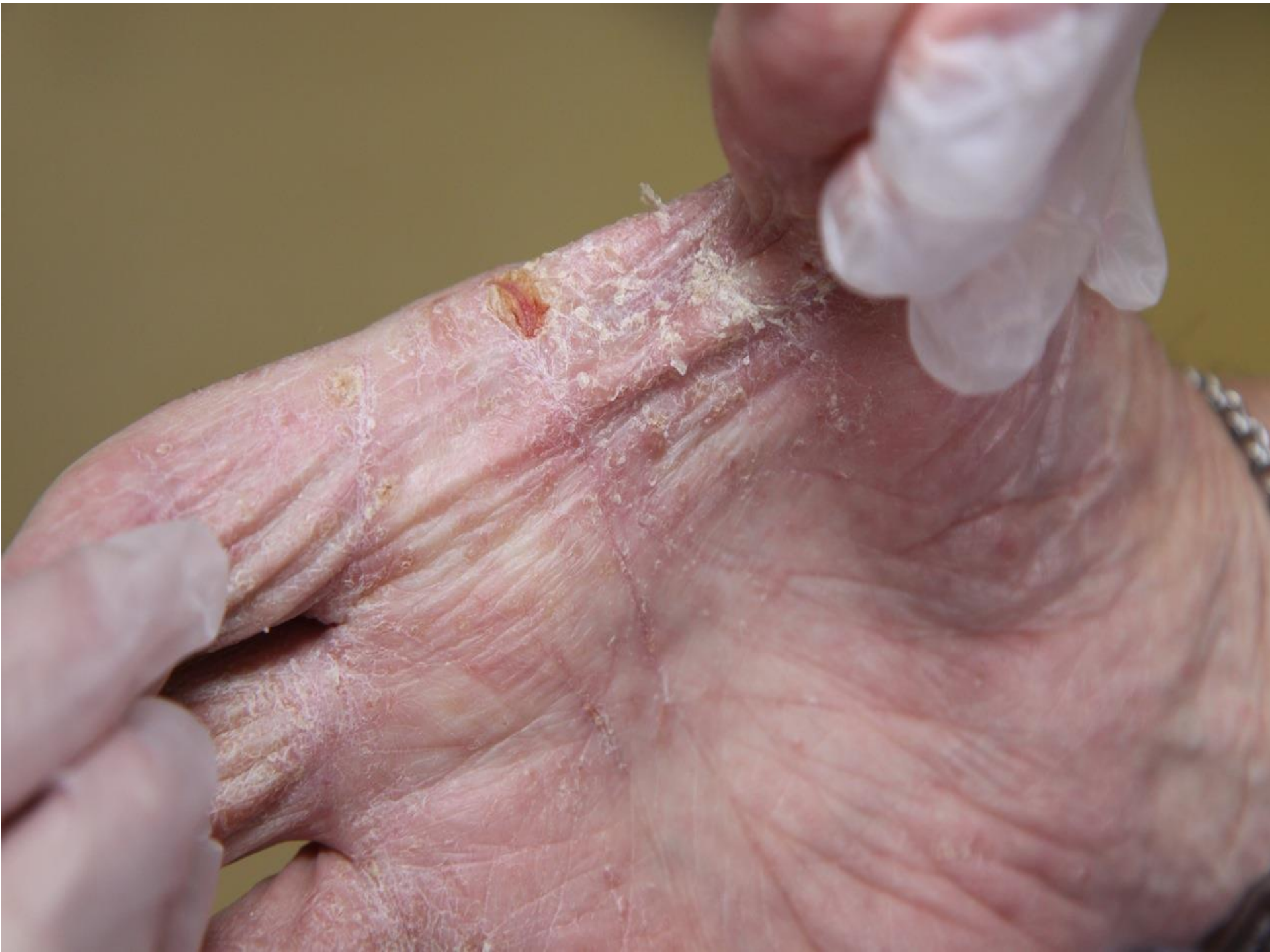
- ***Environmental decontamination - thorough cleaning of the entire unit including vacuuming of all communal furniture***

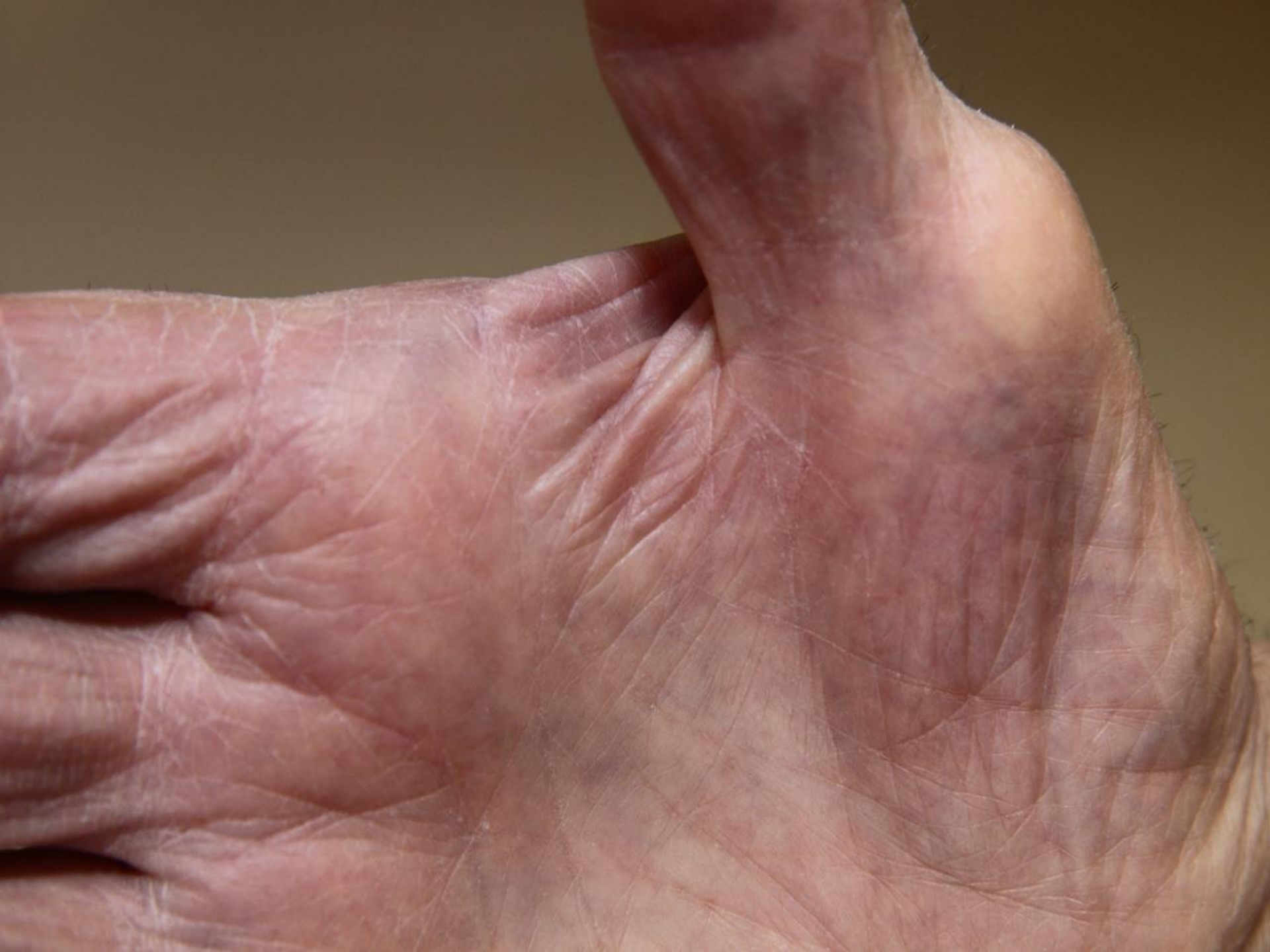
- ***Costs - ~$4730***

  Permethrin cream - $1750
  Extra staffing - $2120
  Gowns/Pajamas - $860





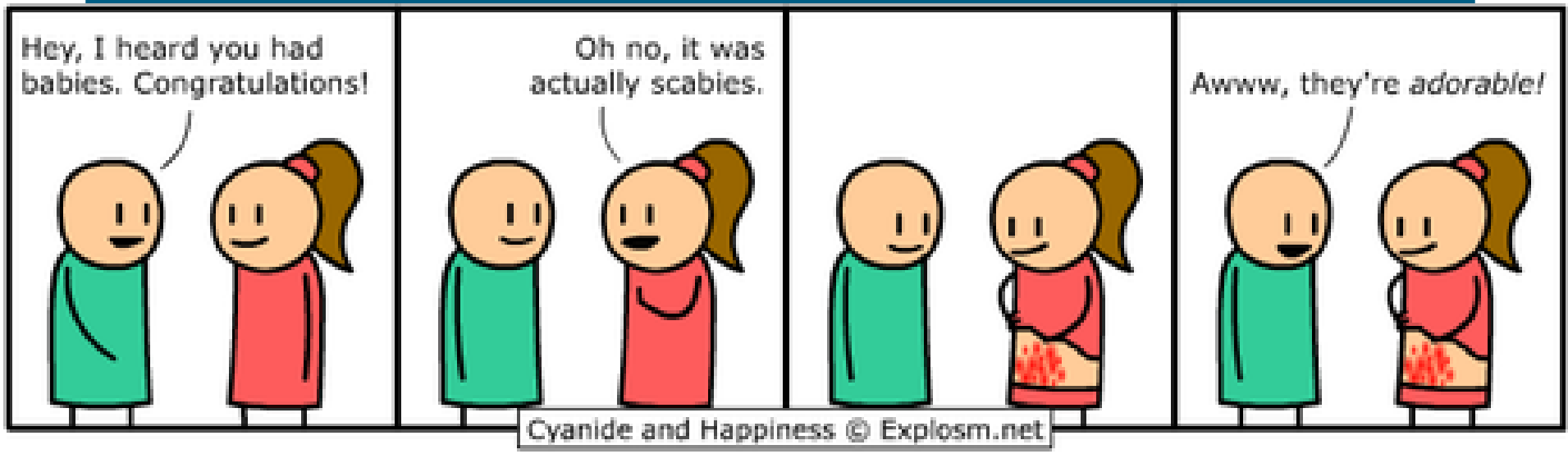




Thank You!

QUESTIONS?

douglas.faulder@albertahealthservices.ca



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