Ozarks Dermatology Inpatient/Outpatient

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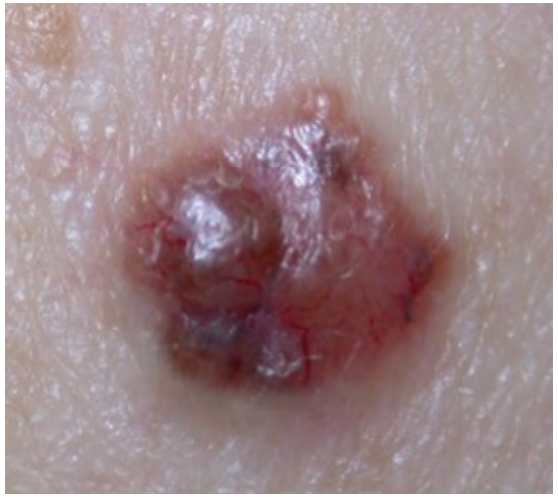
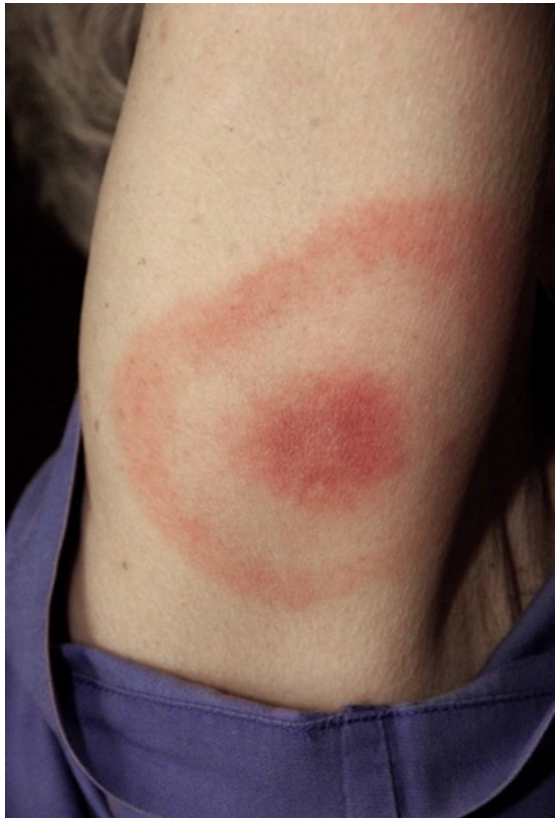
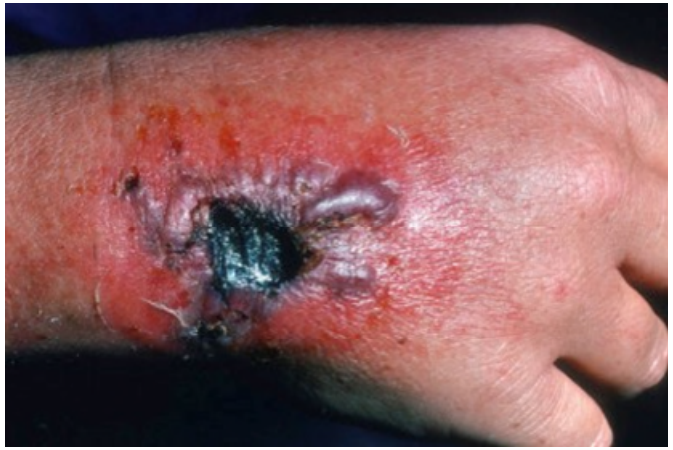
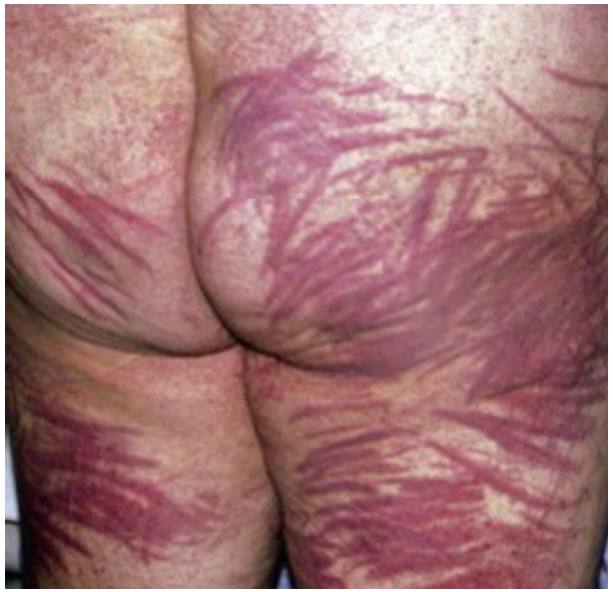
Division of Dermatology

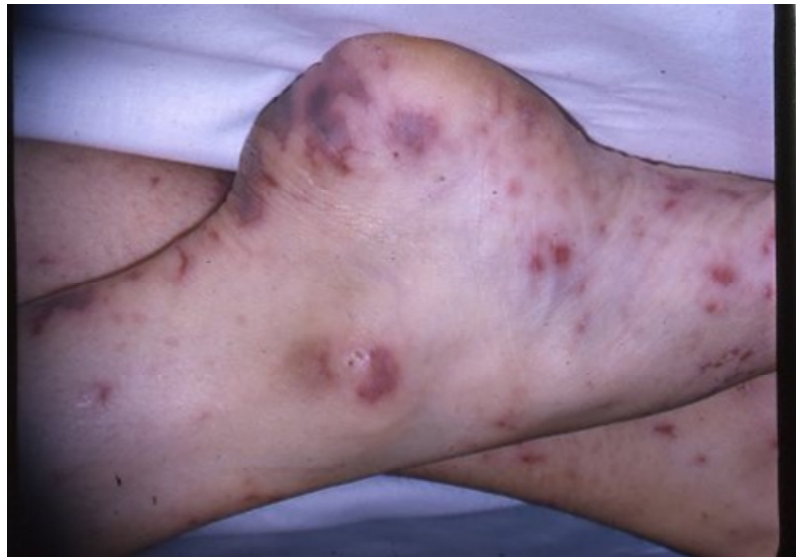
I have no financial conflicts of interest.











Objectives

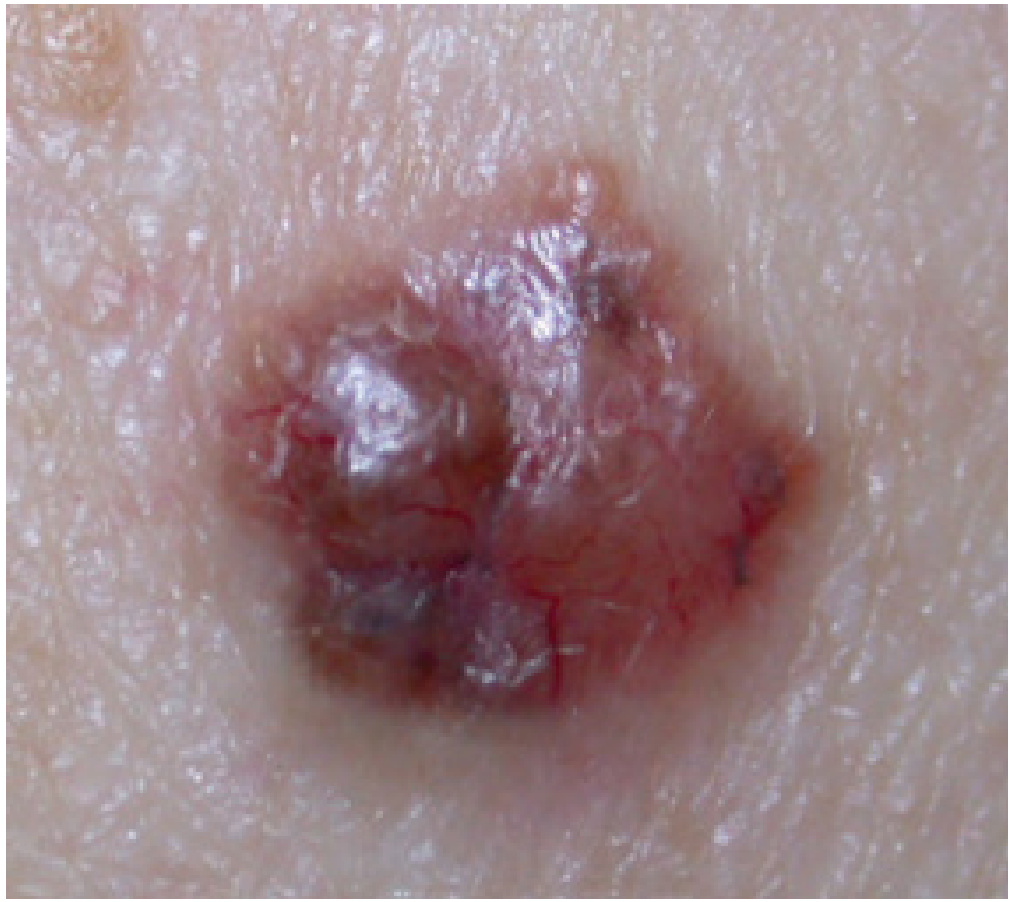
- Recognize the most common forms of skin cancer
- Identify common side effects of topical corticosteroid use
- Recognize cutaneous signs of tick borne illnesses found in this area
- Recognize cutaneous signs of loxoscelism
- Recognize cutaneous signs of select food-associated skin/medical conditions

Case

- Your patient spent a lot of time in the sun over the past many years
- He shows you a spot on his back he has had for a year
- It is asymptomatic
- It has been slowly enlarging
- Occasionally bleeds without pain

Question: What is the most likely diagnosis?

A. Squamous cell carcinoma
B. Brown recluse spider bite
C. Basal cell carcinoma
D. Inflamed keratinous cyst



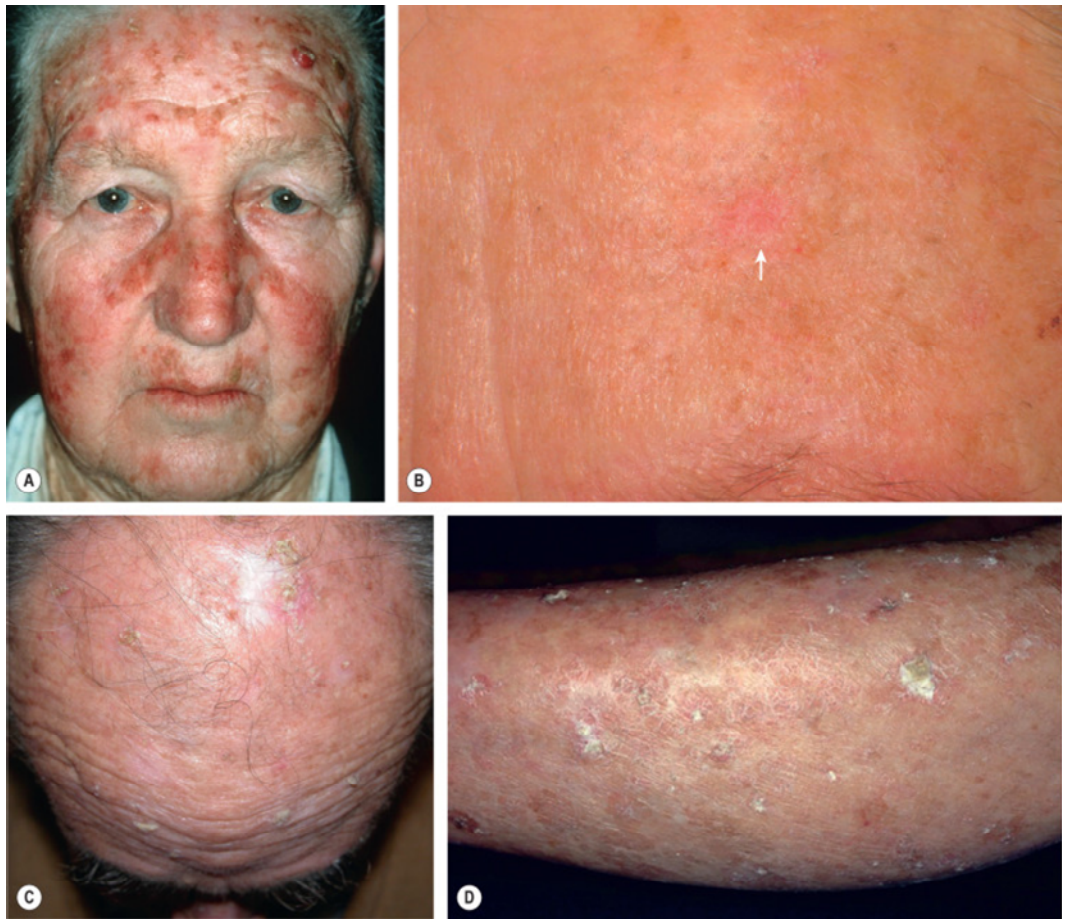
Non Melanoma Skin Cancer Risk Factors

- Ultraviolet radiation
- Pale skin, freckles, red hair
- Cigarette smoking
- Arsenic, nitrogen mustard, coal tar, ...
- HPV
- Chronic wounds and inflammatory conditions (discoid lupus)
- Genetic conditions (Muir-Torre)
- Immunosuppression

Non Melanoma Skin Cancer

- Over 5 million cases, > 3 million people diagnosed each year
- More cases than all other cancers combined
- 1 in 5 Americans will develop over their lifetime

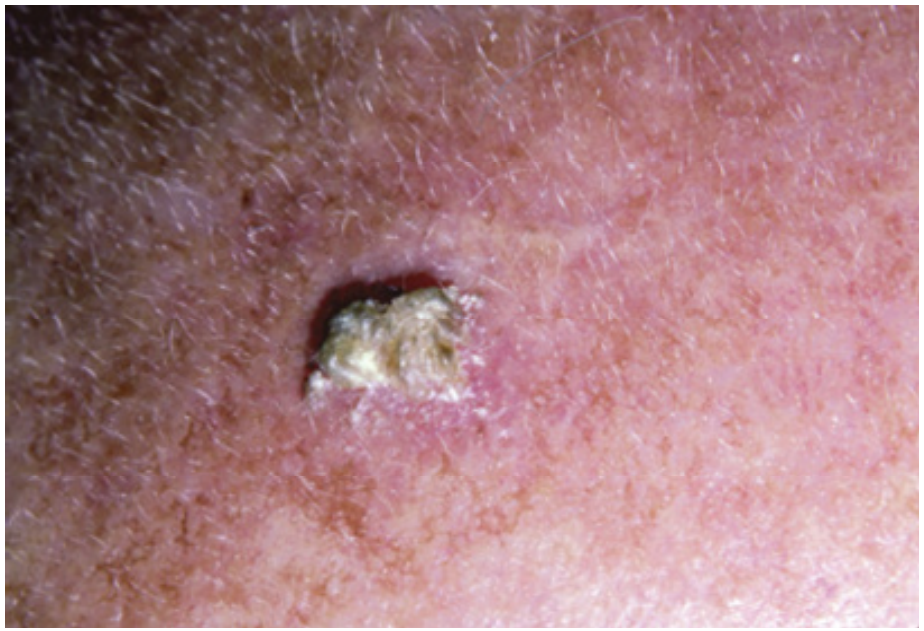
Actinic Keratosis

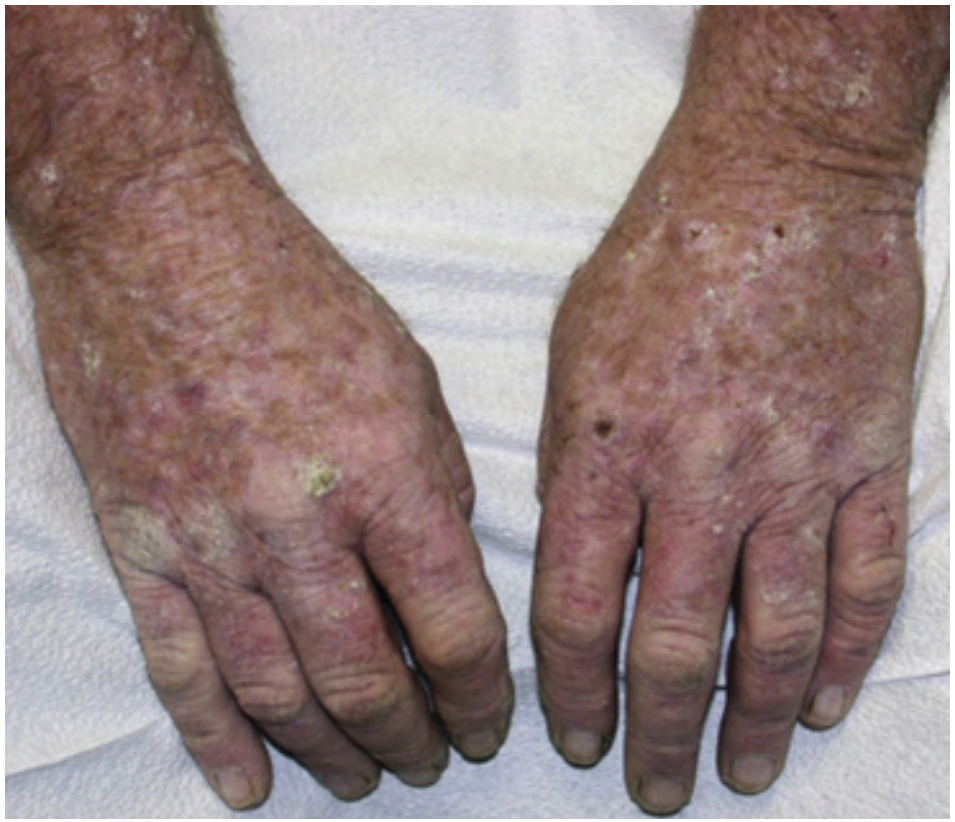


Pink, scaly papules

Intraepithelial neoplasia
- “pre-cancer”

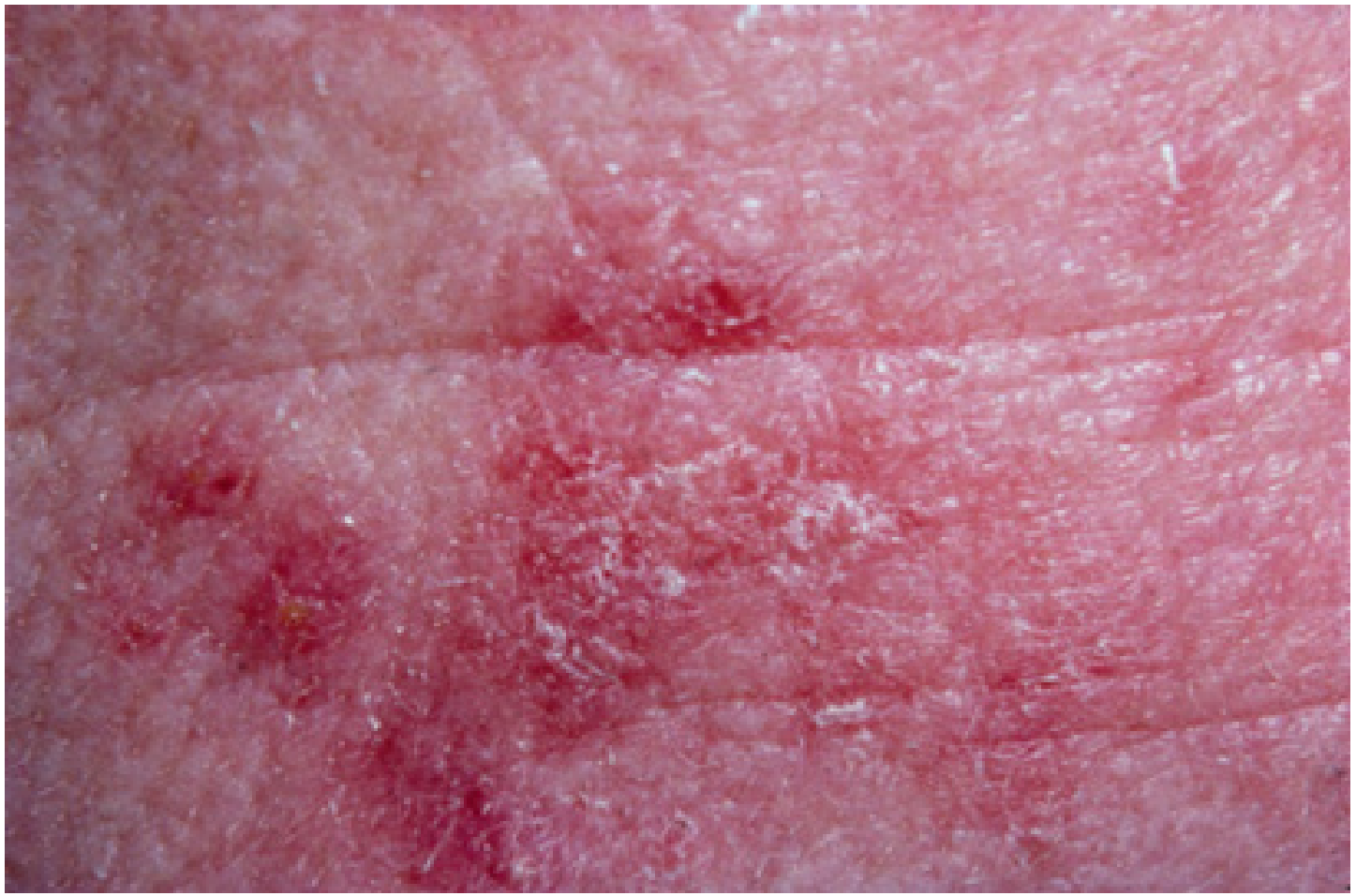
Actinic Keratosis





Keratin without underlying tumor

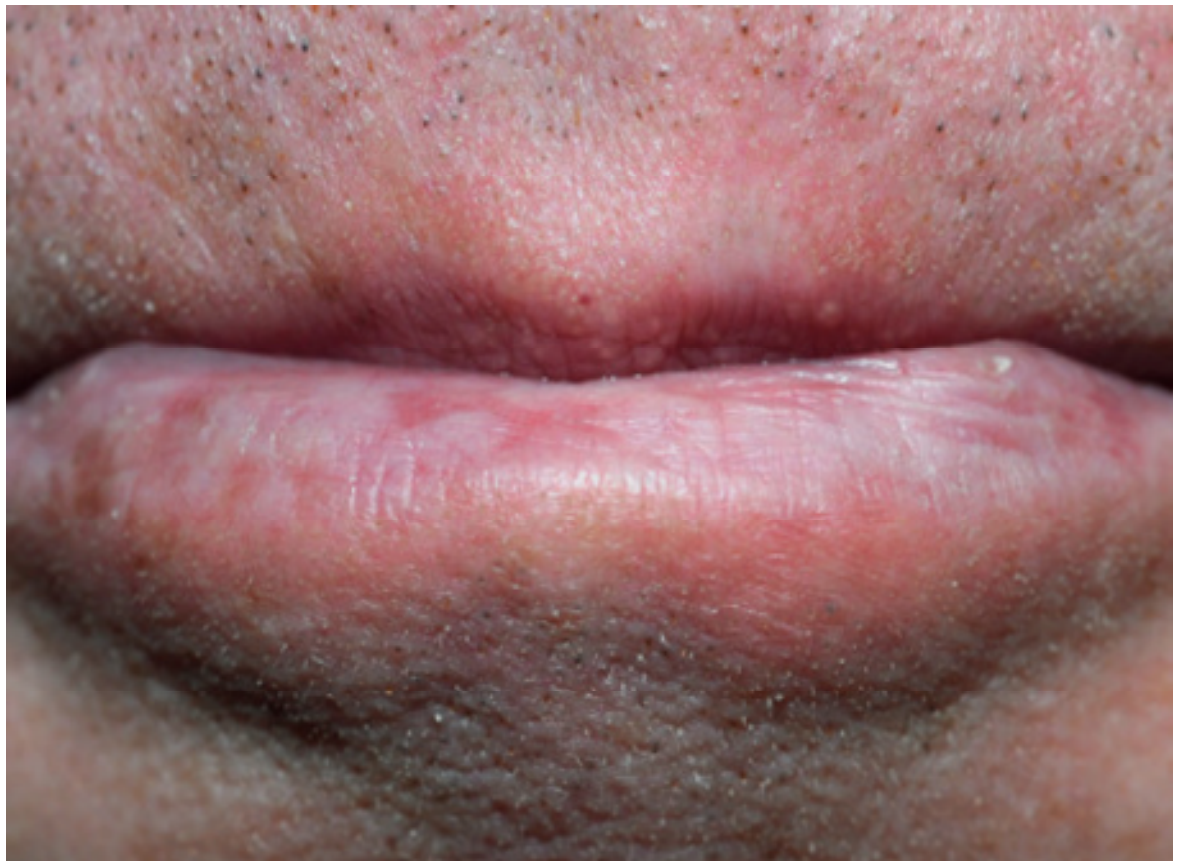
Actinic keratoses



Treatment:

Liquid nitrogen
5-FU
Photodynamic therapy
Imiquimod
Ingenol mebutate

Actinic Cheilitis

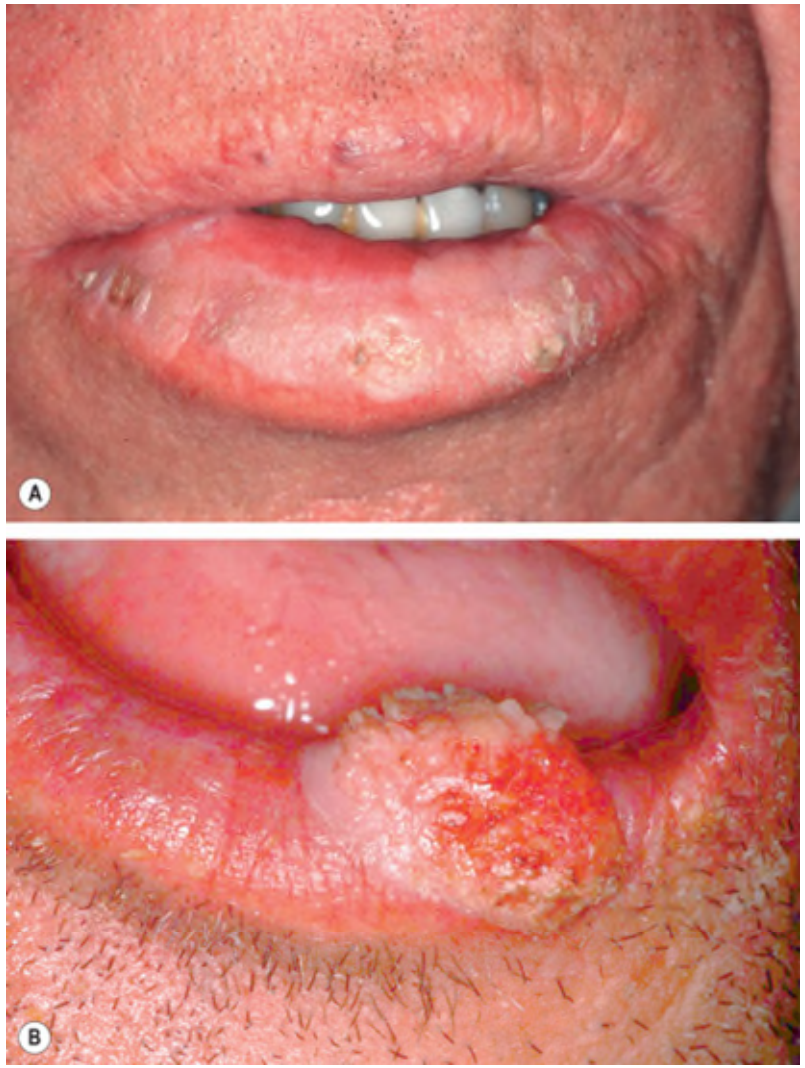


Whitish patches on lower lip

Risk of progression

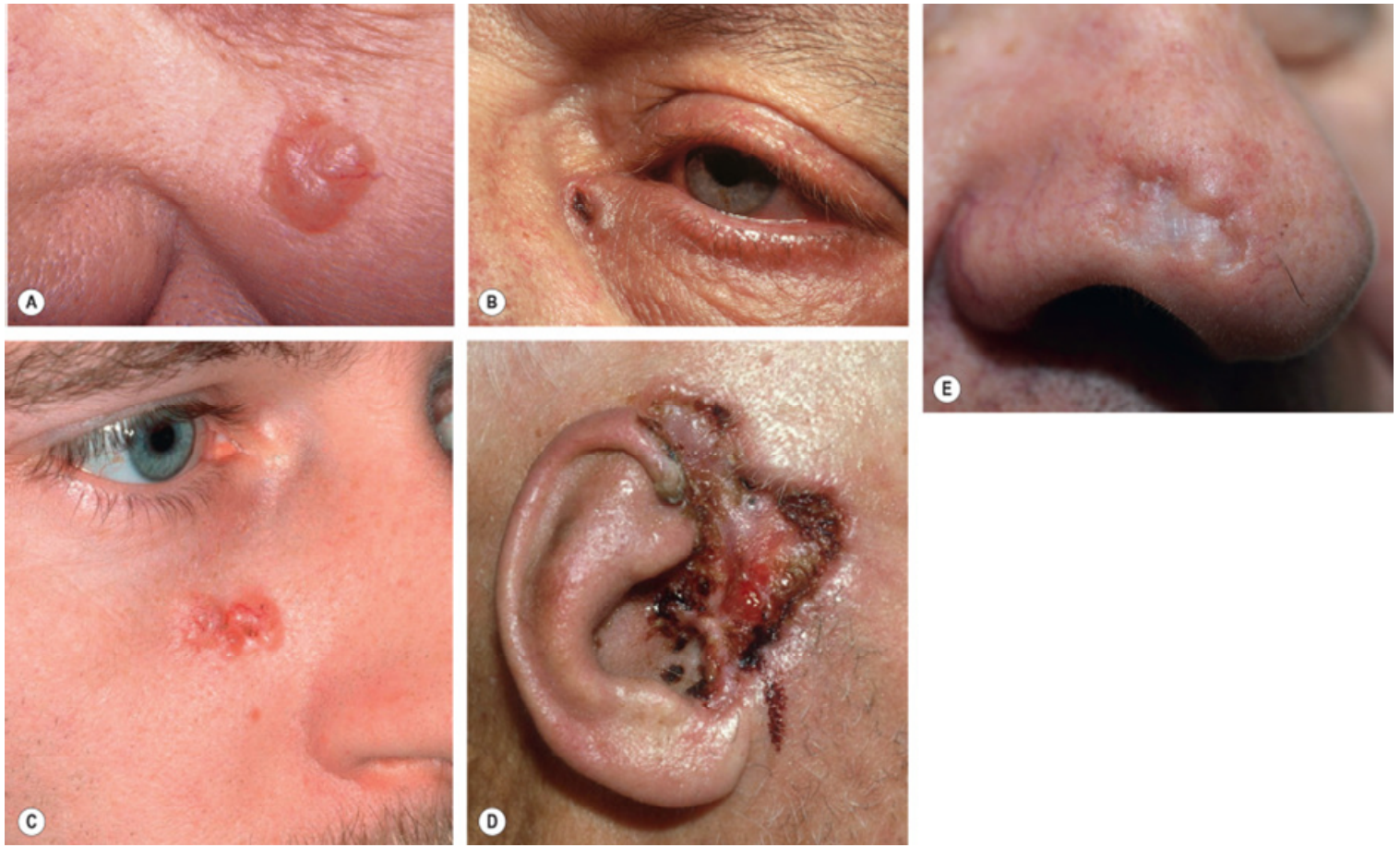
Liquid nitrogen, 5-fluorouracil, laser ablation…

Actinic Cheilitis



Squamous cell carcinoma

Basal Cell Carcinoma



Most common skin cancer

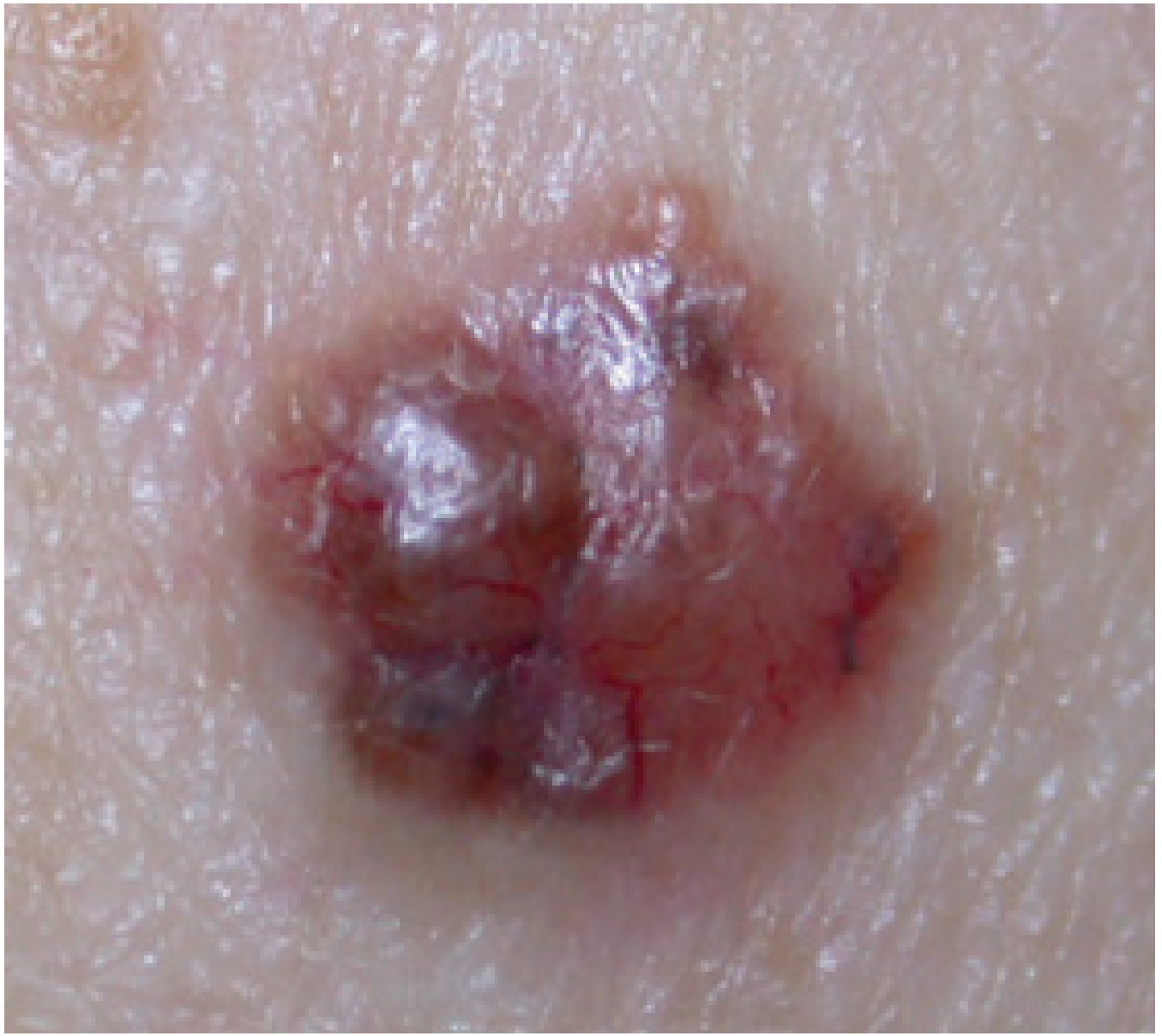
Low metastatic potential

Highly destructive

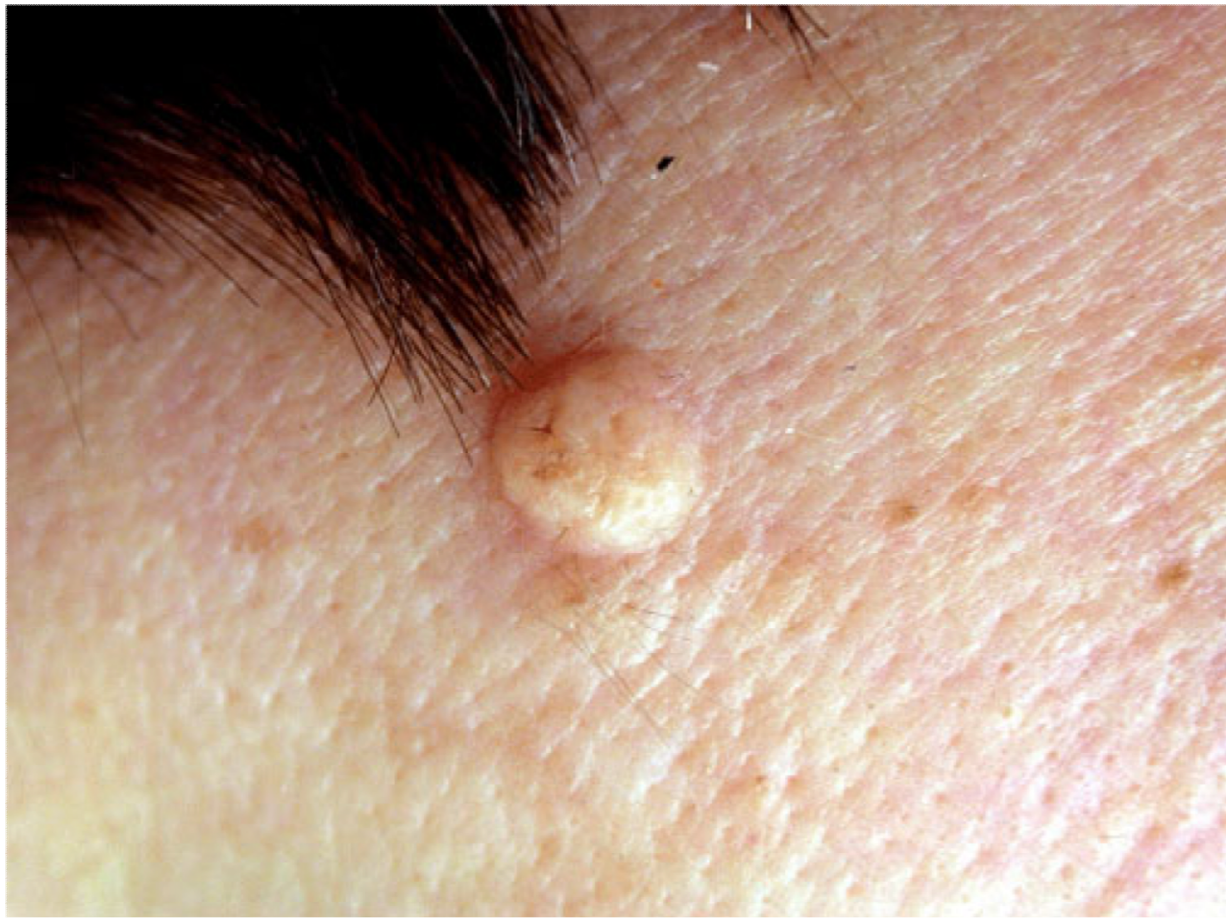
Deeply invasive

Basal Cell Carcinoma

Pink
Shiny
Pearly
Telangiectasia

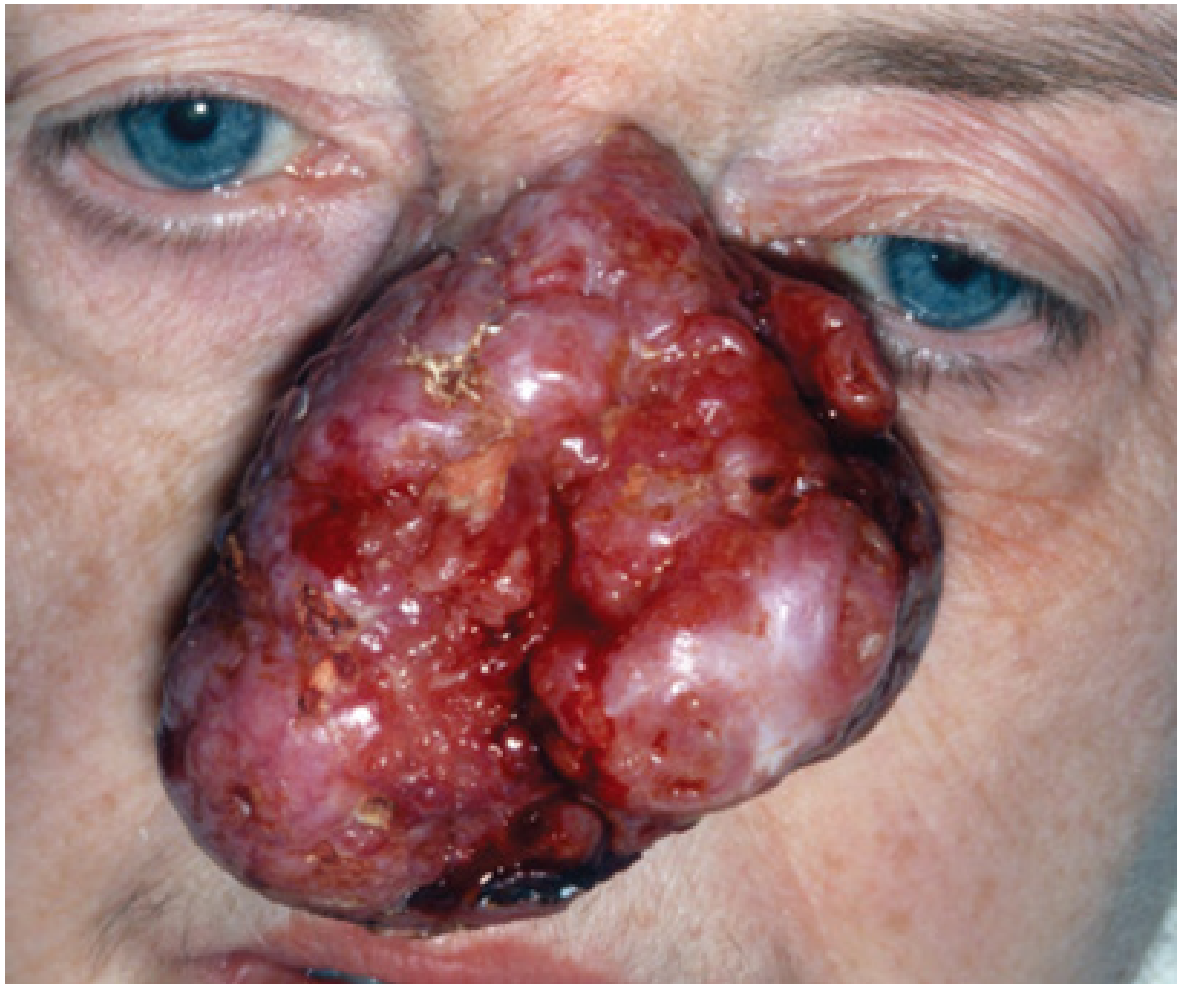


Benign Dermal Nevus



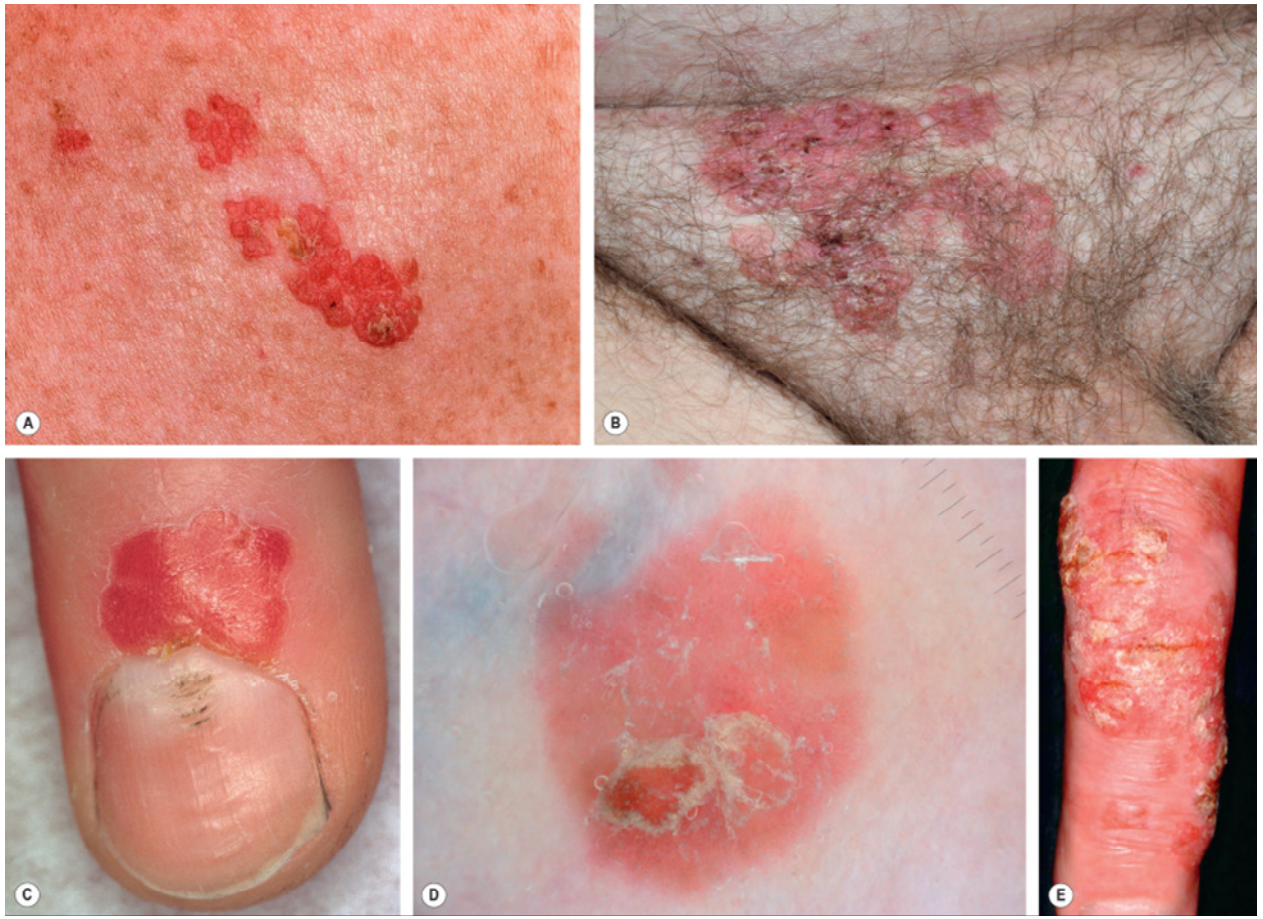
Normal skin tone and texture

Basal Cell Carcinoma



Deeply invasive
Destructive

Squamous Cell Carcinoma In-Situ



More pink substance (plaque/tumor) than Ak

Not defined morphologically by just keratin

Full thickness keratinocyte atypia

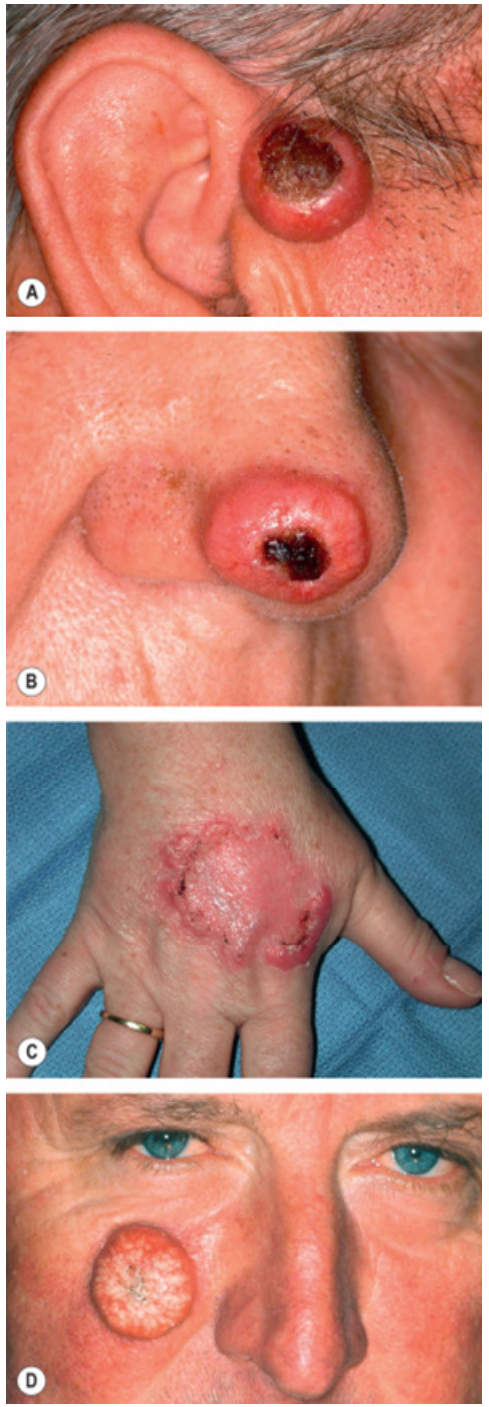
Squamous Cell Carcinoma

Red nodules

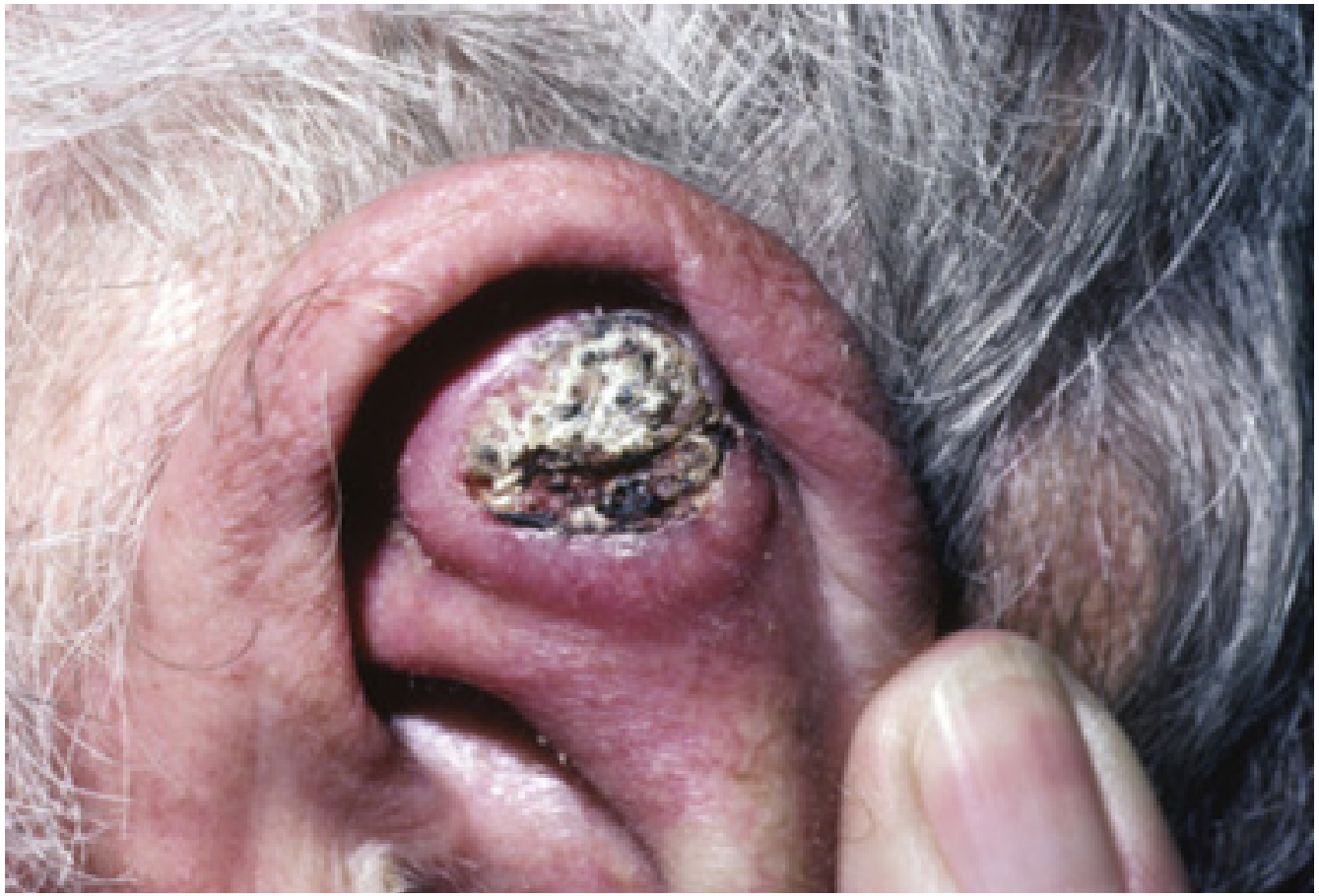
Tender

Crusted, eroded

Metastatic potential



Squamous Cell Carcinoma

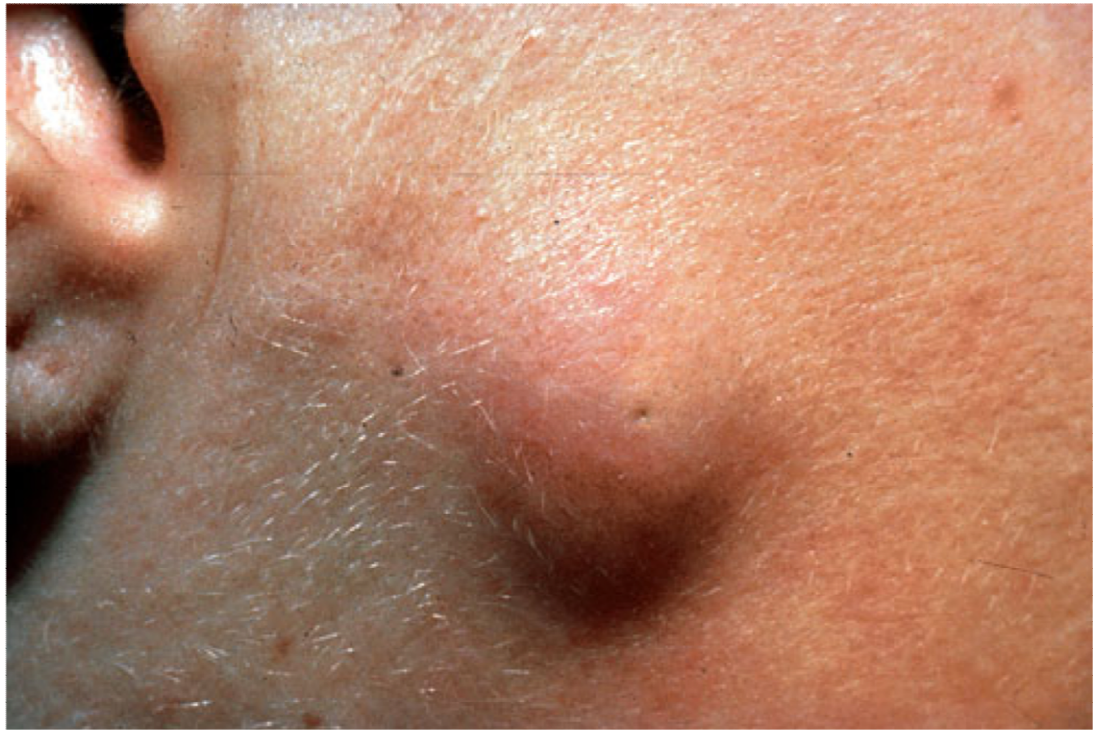


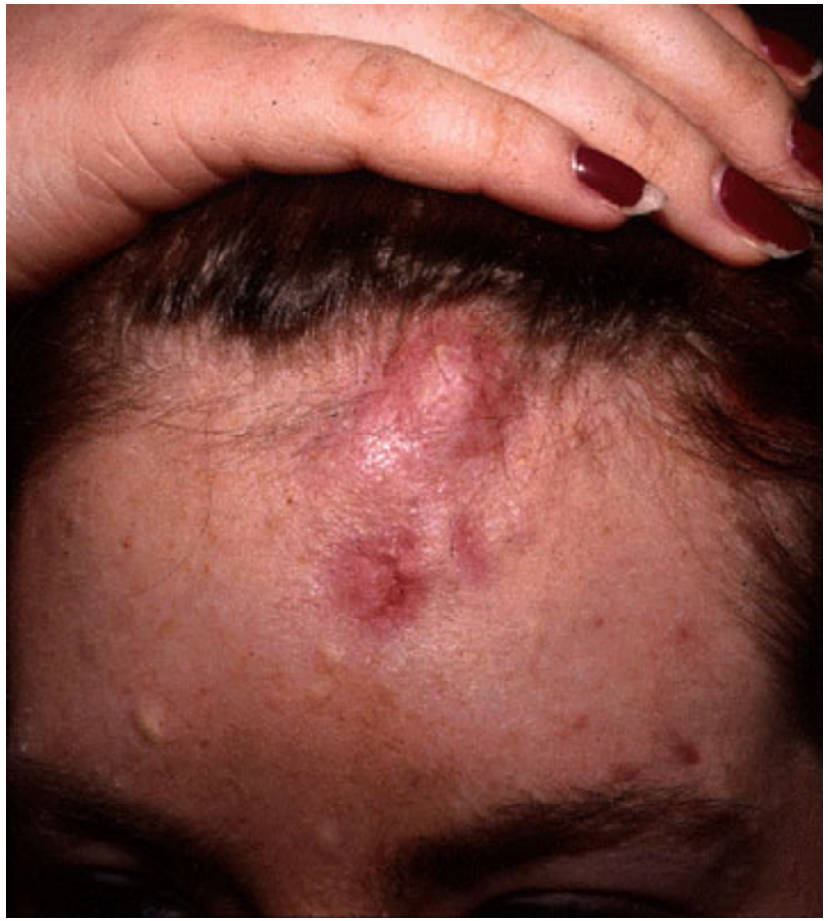
Misdiagnosed as cyst occasionally

Beware in elderly

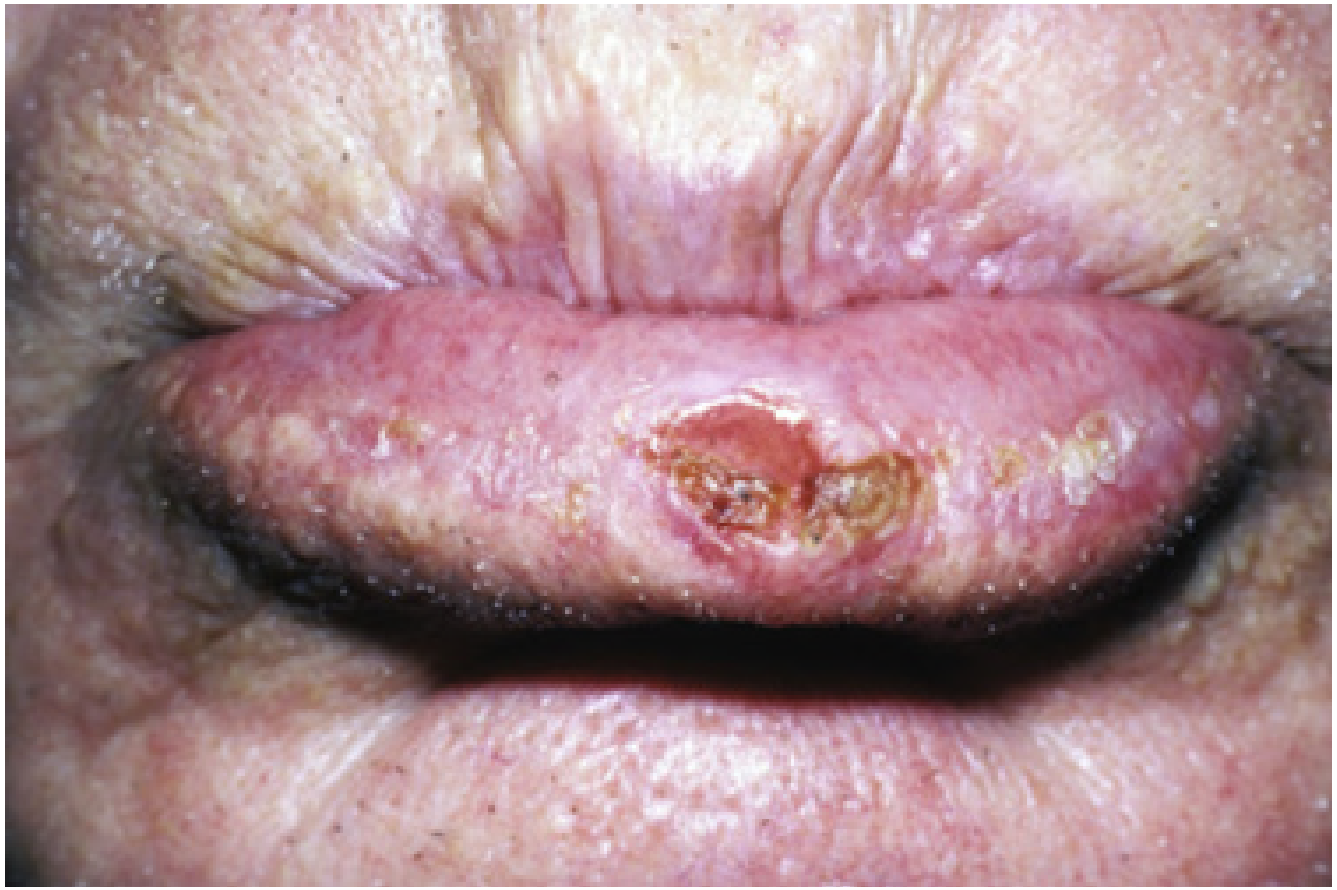
Sun exposed areas

Benign Keratinous Cysts





Squamous Cell Carcinoma

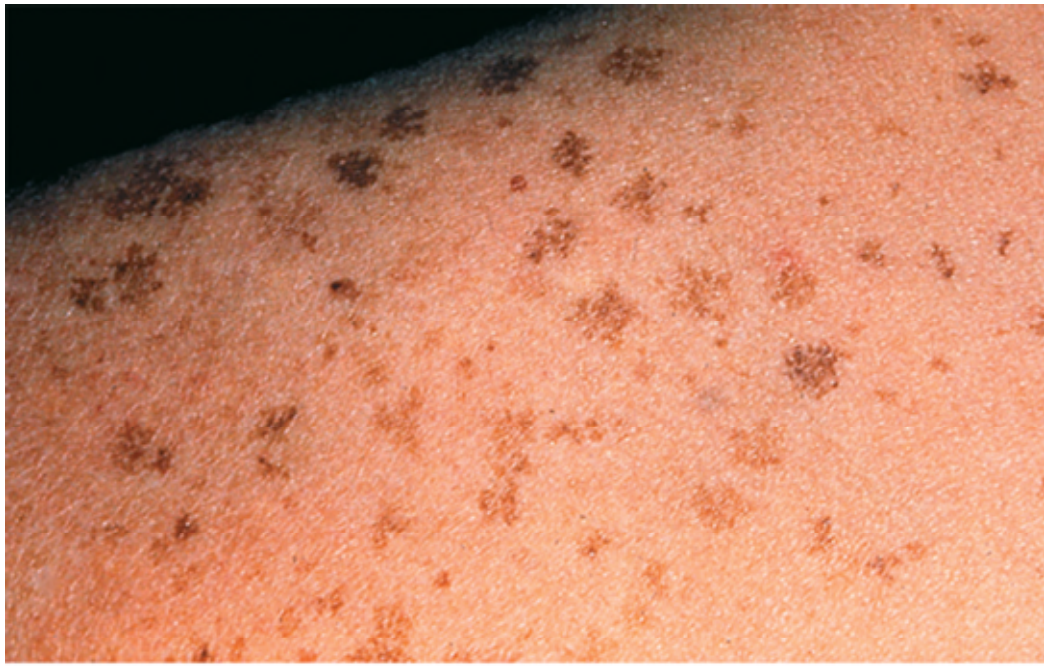


Beware of chronic ulcers or “non-healing” sores

Cutaneous Melanoma

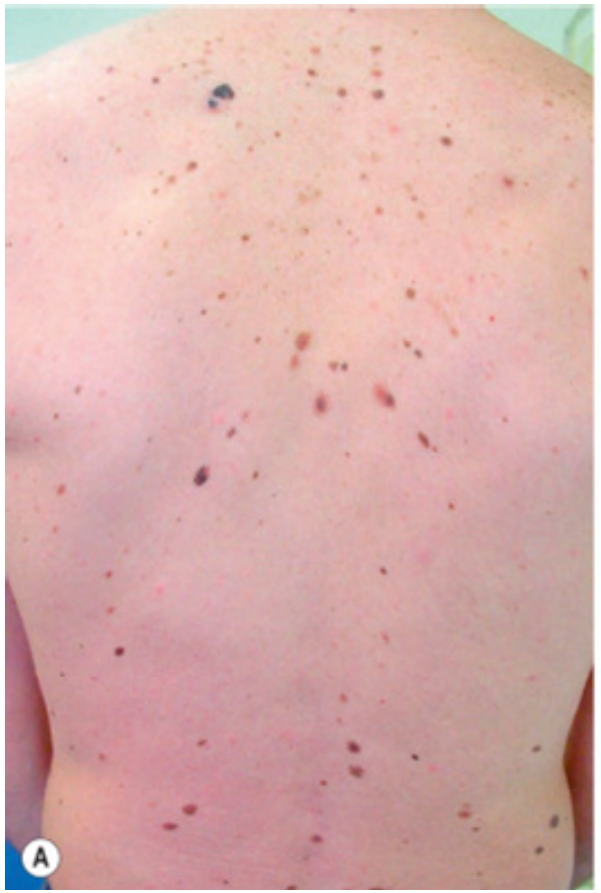
- Risk factors similar to keratinocyte carcinomas
- Family history
- Personal history
- Incidence increasing
- Mortality rates stabilized/decreasing

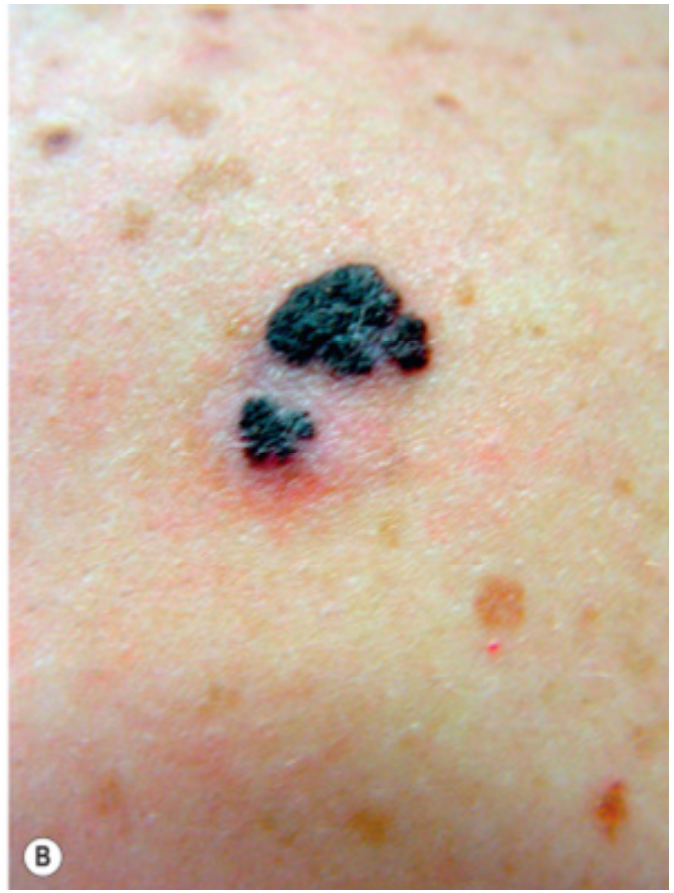
Melanoma Risk Factors



Lentigos

Numerous = 3 x risk

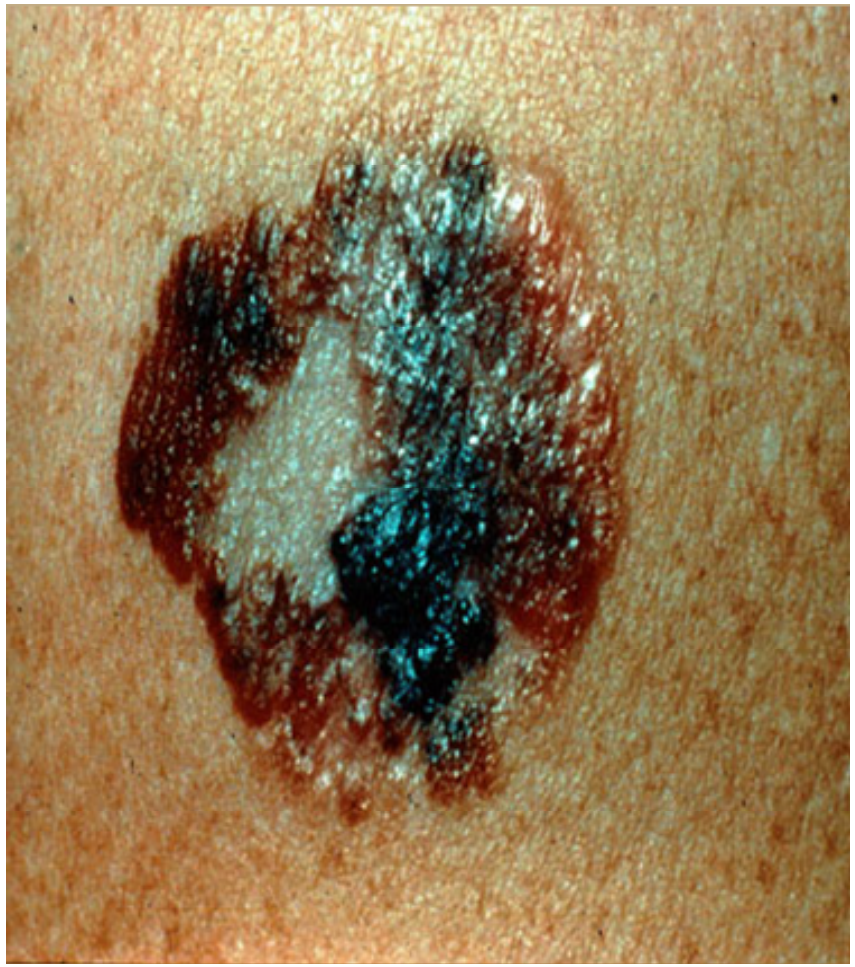




Atypical Nevi and Melanoma

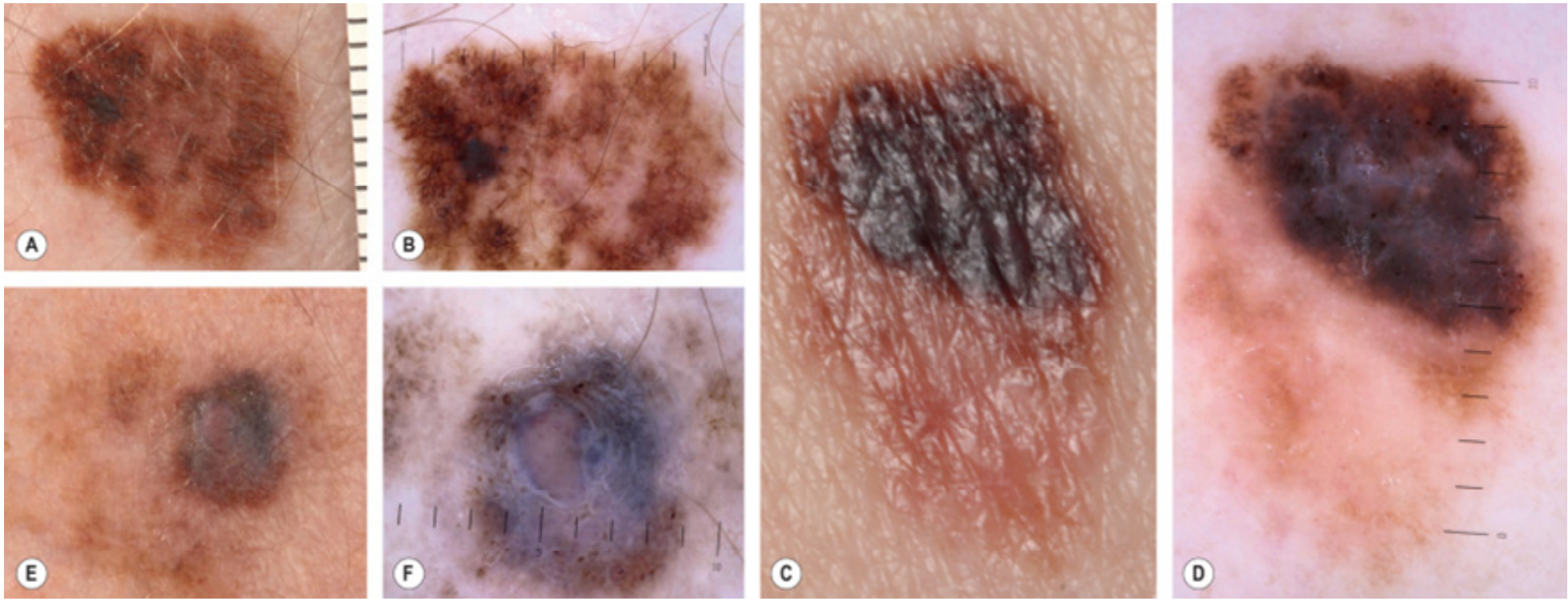
>100 nevi = 10 x risk
>5 atypical nevi = 5 x risk

Melanoma

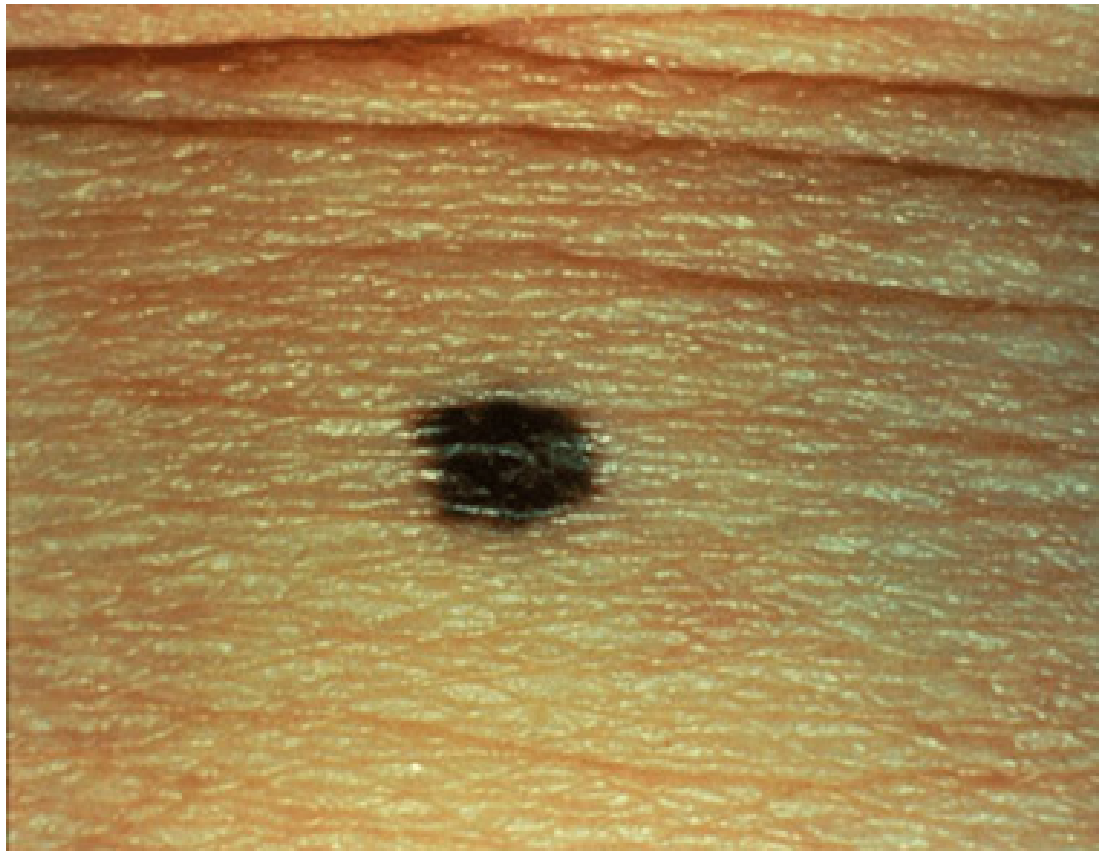


- **A**symmetric
- Irregular **B**orders
- Irregular **C**olor
- **D**ynamic

Melanoma

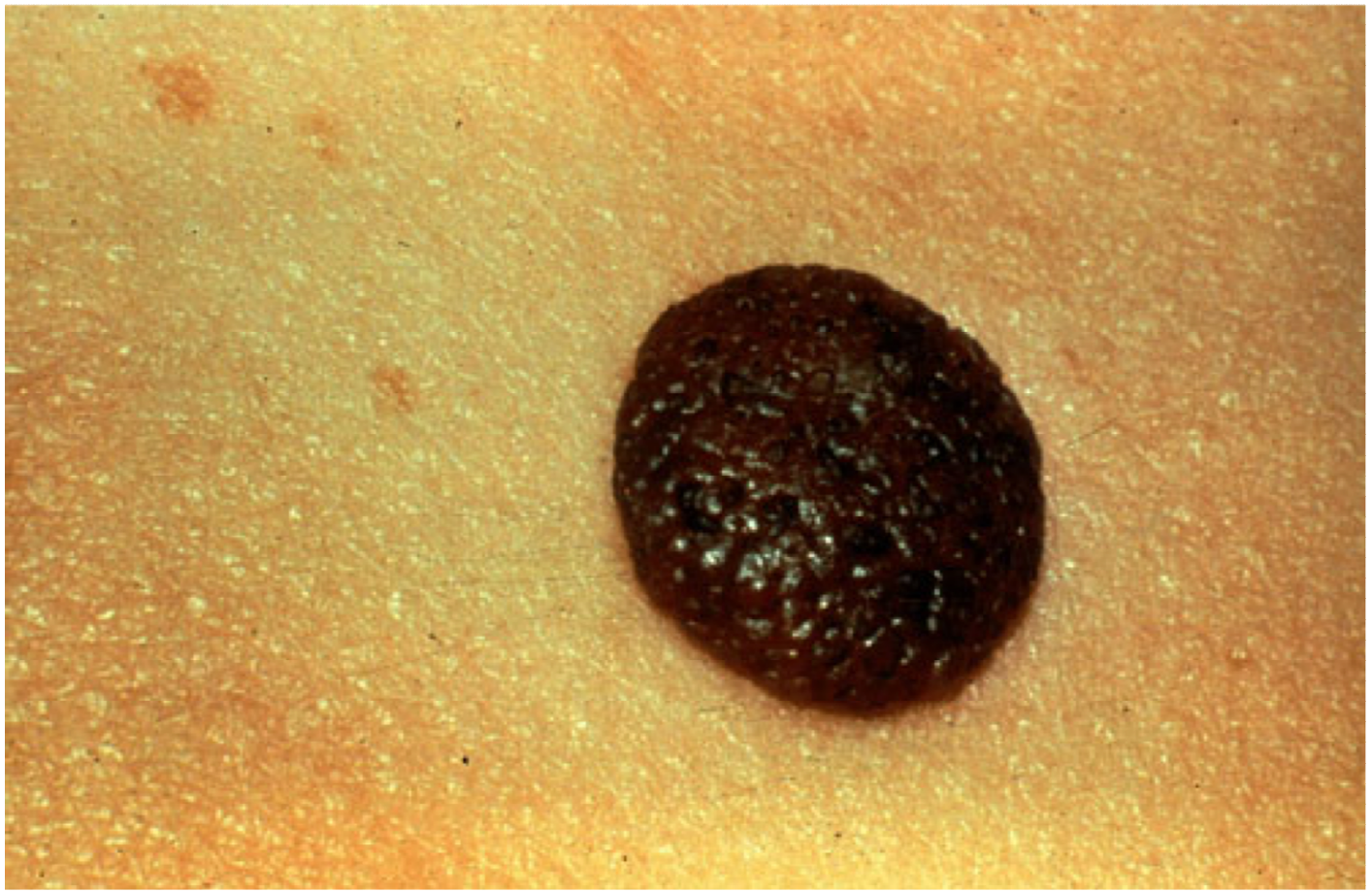


Benign Junctional Nevus (Mole)

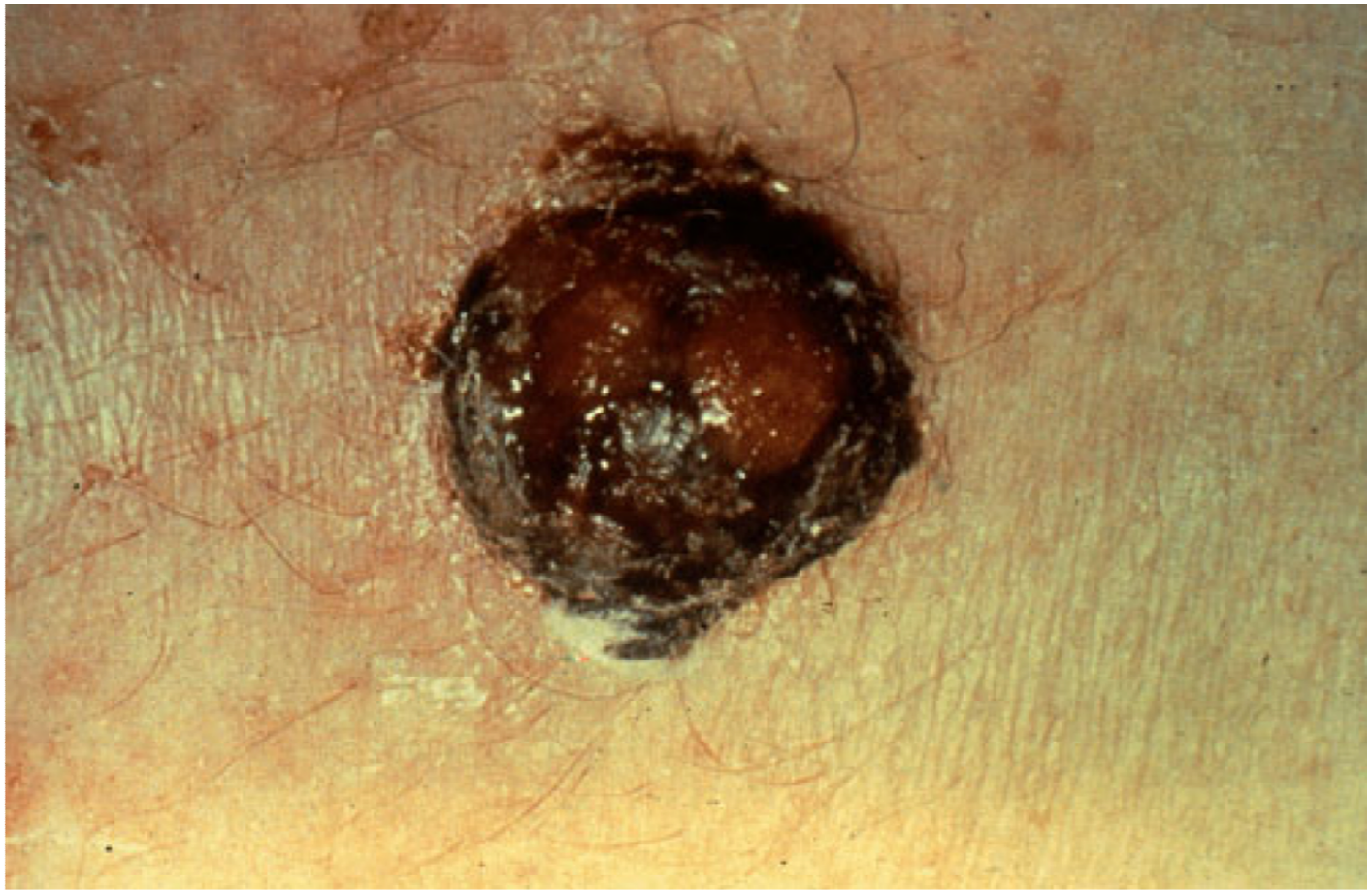


- Hyperpigmented macules
- Small
- Sharp Borders
- Homogeneous pigmentation

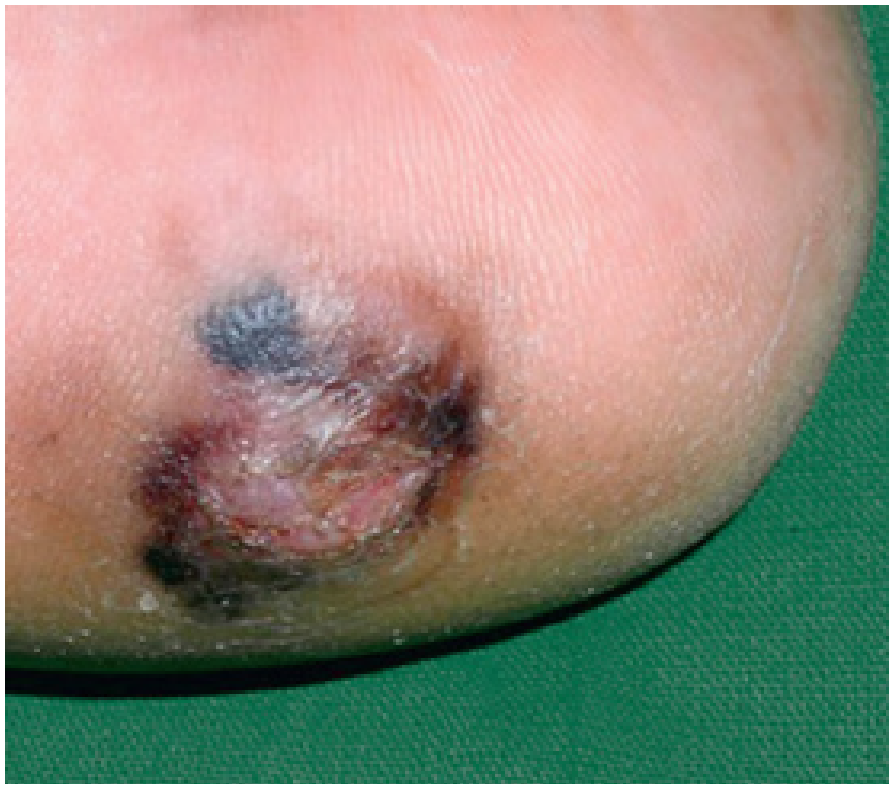
Benign Compound Nevus

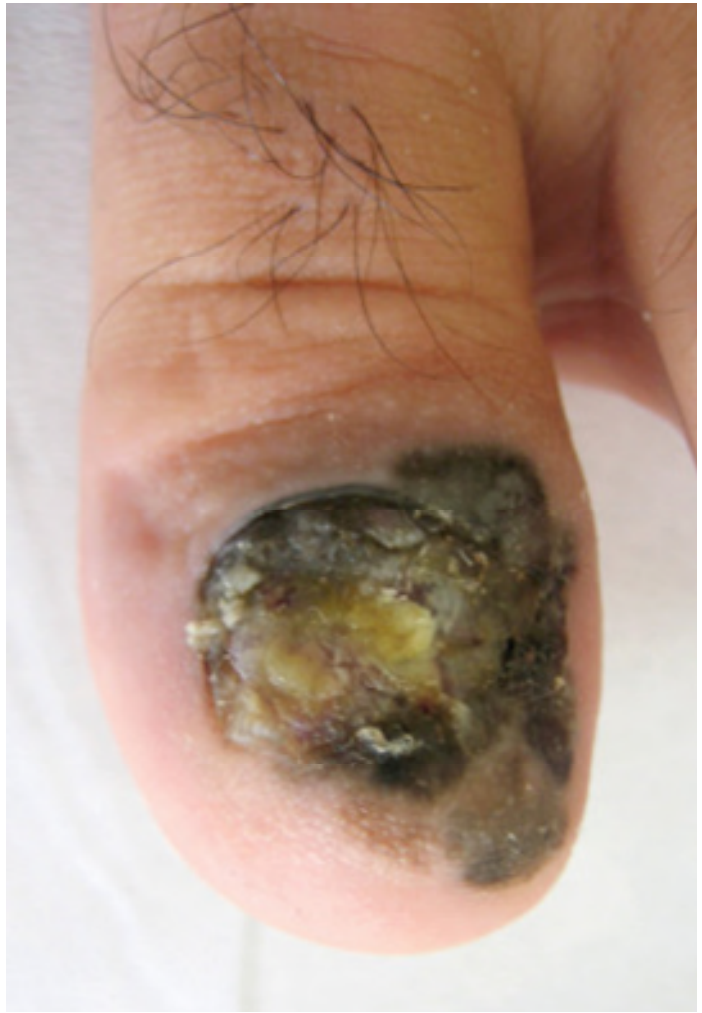


Malignant Melanoma



Acral Melanoma





Look at feet and hands
Most common location in people with darker skin

Scand J Prim Health Care. 2011 Sep; 29(3): 135–143.
Published online 2011 Sep. doi: 10.3109/02813432.2011.580088

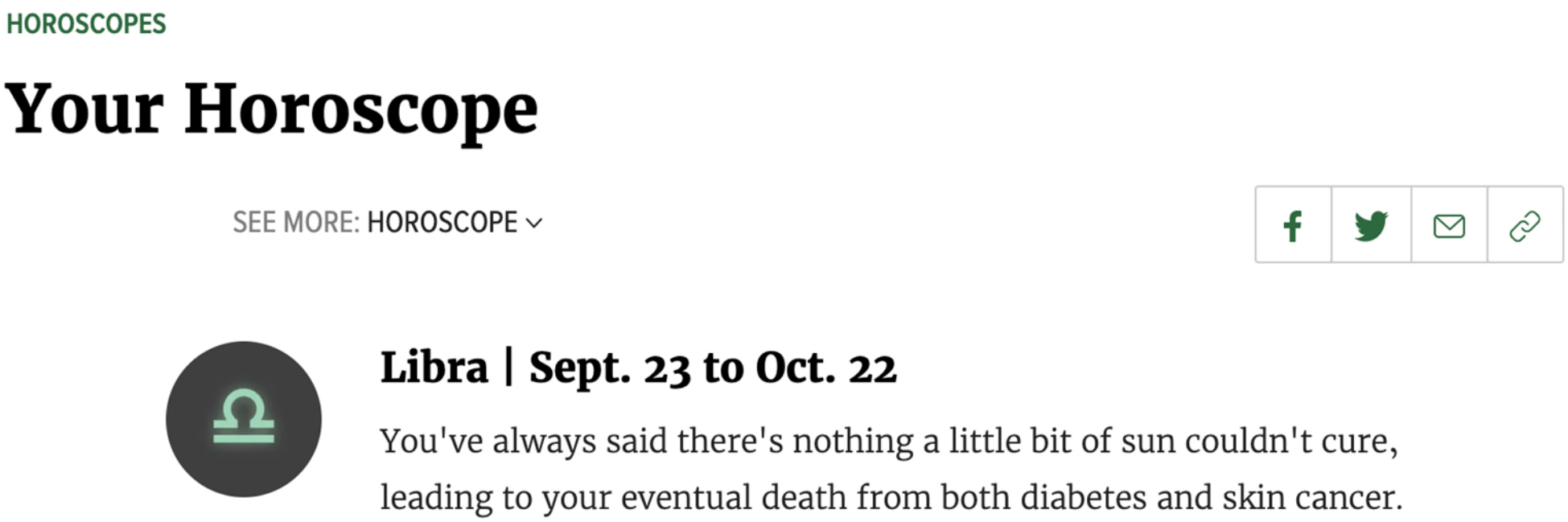
PMCID: PMC3347962
PMID: 21682578

Sun protection advice mediated by the general practitioner: An effective way to achieve long-term change of behaviour and attitudes related to sun exposure?

Magnus Falk[1,2,3] and Henrik Magnusson[1,3]

Advice from internists/general practitioners during routine health care visits helps to reduce sun exposure

“Isn’t Sun Exposure Good For You?”



theonion.com

Sun Protection

TABLE

Table 132.5

Guidelines for photoprotection.

SPF, sun protection factor.

GUIDELINES FOR PHOTOPROTECTION
• Avoid direct sun exposure between 10 AM and 4 PM whenever possible
• Seek the shade to shelter you from direct sun exposure
• Wear protective clothing, hats, and sunglasses whenever possible
• Apply sunscreen to all exposed skin when you will be outdoors
• Use a sunscreen with an SPF 30 or greater that is labeled as BROAD SPECTRUM
• Use up to 1 to 2 ounces of sunscreen to cover exposed skin (in an adult)
• Apply the sunscreen 15 minutes before sun exposure
• Use a water resistant sunscreen if you are going to swim or perspire heavily
• Re-apply sunscreen every 2 hours or after swimming or excessive sweating
• Spray sunscreens must be applied liberally to achieve the rated SPF

Apply sunscreen 15-20 minutes before sun exposure

Reapply every 2 hours and After swimming/sweating

Don’t use spray on sunscreens

Spray On Sunscreen (Not My Choice)

The chemicals in sunscreen seep into your bloodstream after just one day, FDA says

N'dea Yancey-Bragg, USA TODAY Published 9:45 p.m. ET May 6, 2019 | Updated 11:14 a.m. ET May 7, 2019

CNN Health » Food | Fitness | Wellness | Parenting | Live Longer Live TV U.S. Edition +

Sunscreen enters bloodstream after just one day of use, study says

By Sandee LaMotte, CNN
Updated 4:18 PM ET, Mon May 6, 2019

Sunscreen Found in Bloodstream After One Day, Study Shows

Results strengthen FDA's call for more information on sunscreen safety

By Trisha Calvo
May 06, 2019

The New York Times

TheUpshot

THE NEW HEALTH CARE

How Safe Is Sunscreen?

A recent study on absorption into the bloodstream has caused concern, but you should be more worried about skin cancer.

06 May 2019

American Academy of Dermatology comments on recent study on absorption of sunscreen ingredients

ROSEMONT, Ill. (May 6, 2019) — *Statement from AAD President George J. Hruza, MD, MBA, FAAD*

The study "Effect of Sunscreen Application Under Maximal Use Conditions on Plasma Concentration of Sunscreen Active Ingredients" published in the *Journal of the American Medical Association* addresses an important question about the potential for certain sunscreen ingredients to be absorbed in the bloodstream. As the study concludes, this is a small, pilot study and more research is needed before it can be determined if the absorption of sunscreen ingredients has any effects on a person's health. These sunscreen ingredients have been used for several decades without any reported internal side effects in humans. Importantly, the study authors conclude that individuals should not refrain from the use of sunscreen, which the AAD encourages as one component of a comprehensive sun protection plan as sunscreen use has been shown to reduce the risk of skin cancer in a number of scientific studies.

No ill effects in humans

Sunscreen use reduces the risk of skin cancer

06 May 2019

American Academy of Dermatology comments on recent study on absorption of sunscreen ingredients

ROSEMONT, Ill. (May 6, 2019) — *Statement from AAD President George J. Hruza, MD, MBA, FAAD*

Skin cancer is the most common cancer in the United States, and dermatologists see the impact it has on patients' lives every day. Unprotected exposure to the sun's ultraviolet rays is a major risk factor for skin cancer. The AAD encourages the public to continue to protect themselves from the sun by seeking shade; wearing protective clothing, including a lightweight, long-sleeved shirt, pants, a wide-brimmed hat and sunglasses; and generously applying a broad-spectrum, water-resistant sunscreen with an SPF of 30 or higher to exposed skin.

The AAD's sun protection recommendations are based on the existing body of scientific evidence and current FDA regulations and guidelines; these recommendations will continue to evolve as the science develops and the FDA issues new regulations. If you are concerned about the safety of the ingredients in your sunscreen, talk to a board-certified dermatologist to develop a sun protection plan that works for you.

Use Sunscreen

- Zinc oxide and titanium dioxide = GRASE
- PABA and trolamine salicylate = not GRASE
- Additional safety and effectiveness data needed

  Oxybenzone, octinoxate, avobenzone, cinoxate, dioxybenzone, ensulizole, homosalate, meradimate, octisalate, octocrylene, padimate O, sulisobenzone

Sunscreen: Use Titanium/Zinc

- All major brands make “chemical free”, “mineral”… sunscreen
  - Neutrogena, Aveeno, Clinique …
  - Blue lizard sensitive

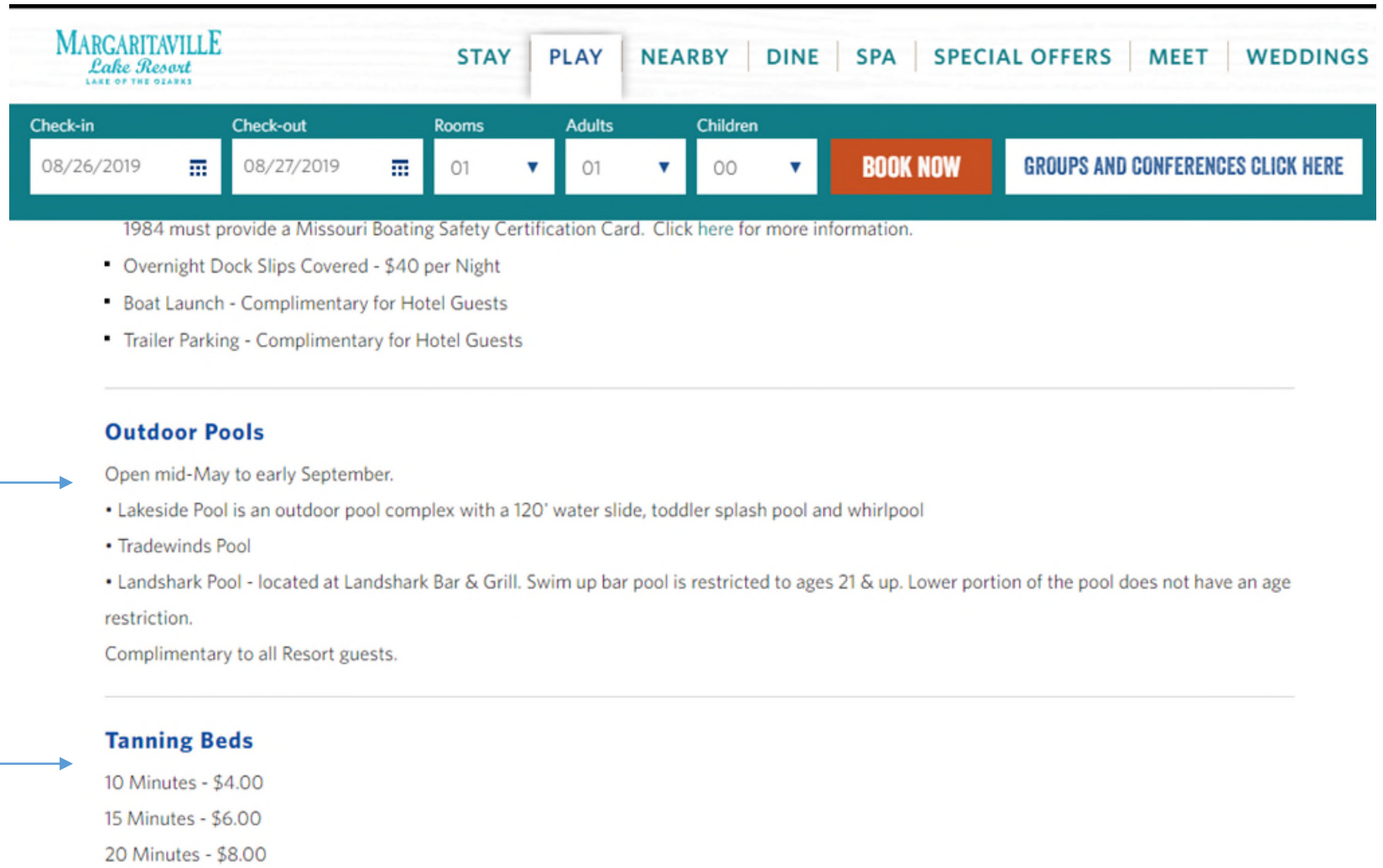
You should recommend sunscreen

Sunscreen reduces the risk of skin cancer

Use zinc, titanium based sunscreen spf 30 or higher

Do not use spray – or be careful

No tanning beds



Protect →

Avoid →

Skin Cancer – Outpatient Considerations

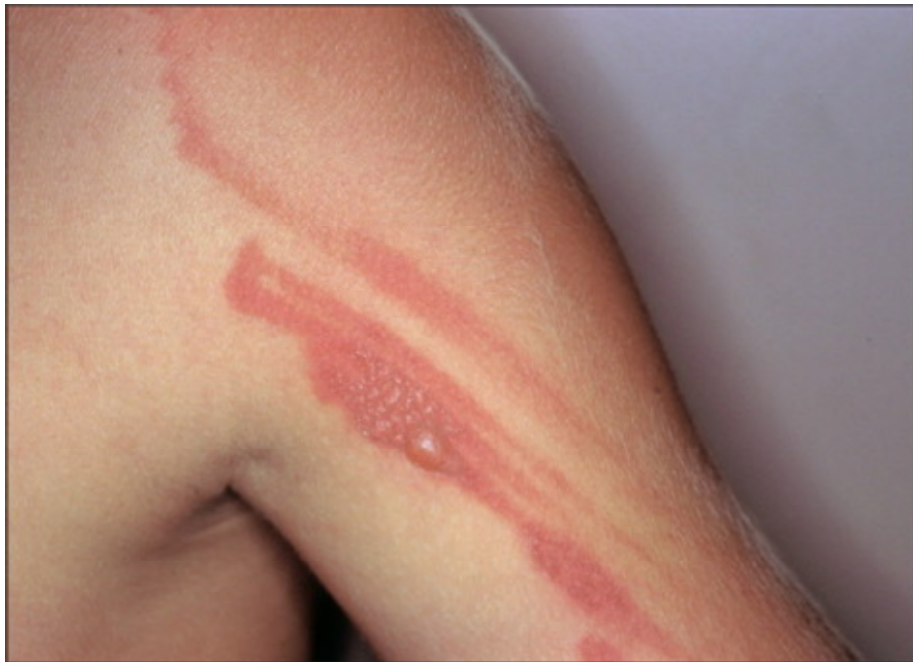
- Recognize clinical presentations
- Treat early for better outcomes (actinic keratosis)
- Prescribe protective measures, safe practices
- Sunscreen is recommended, use zinc/titanium products
- Vitamin D

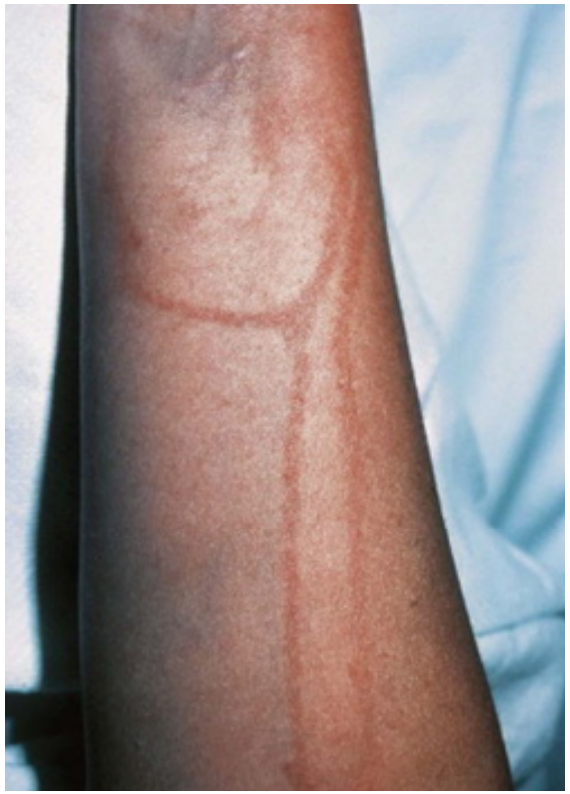
Case

This patient spent time at the pool and in the lake, drinking alcohol and sunbathing. He used sunscreen. About a day after this party he noticed an odd, red, linear streak which was raised and somewhat blistered. The rash settled down after a few days but it turned dark brown and lingered for weeks.

Note: I see about 5 of these after every spring break

Case



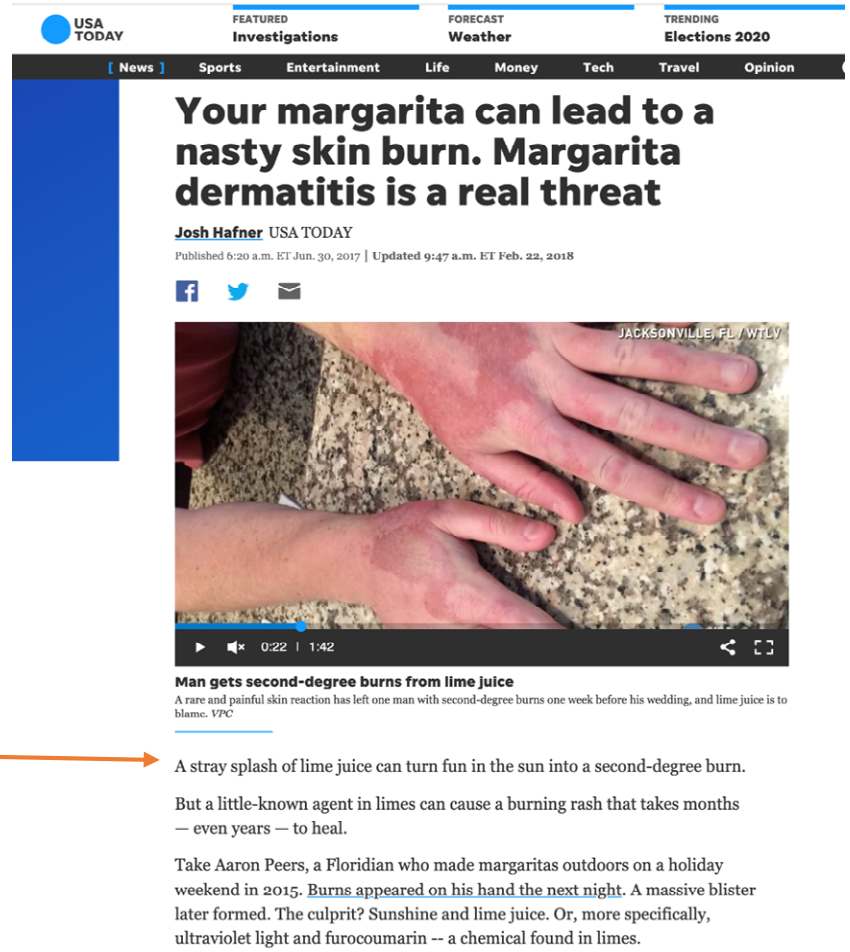


Question: Which of the following is the most likely culprit?

A. Scotch and soda
B. Rum and cola
C. Tequila with lime
D. Vodka with cranberry

Phytophotodermatitis

- Furocoumarins in plants + UVA light
- Redness and blisters a few hours after exposure
- Intense hyperpigmentation lasts for weeks



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[News] Sports Entertainment Life Money Tech Travel Opinion

Your margarita can lead to a nasty skin burn. Margarita dermatitis is a real threat

Josh Hafner USA TODAY

Published 6:20 a.m. ET Jun. 30, 2017 | **Updated 9:47 a.m. ET Feb. 22, 2018**

Man gets second-degree burns from lime juice

A rare and painful skin reaction has left one man with second-degree burns one week before his wedding, and lime juice is to blame. *VPC*

A stray splash of lime juice can turn fun in the sun into a second-degree burn.

But a little-known agent in limes can cause a burning rash that takes months — even years — to heal.

Take Aaron Peers, a Floridian who made margaritas outdoors on a holiday weekend in 2015. Burns appeared on his hand the next night. A massive blister later formed. The culprit? Sunshine and lime juice. Or, more specifically, ultraviolet light and furocoumarin -- a chemical found in limes.

Phytophotodermatitis

Lemonade
Limeade
Alcoholic drinks
with lemon, lime

Also, celery
Grapefruit, parsnip,
Parsley…

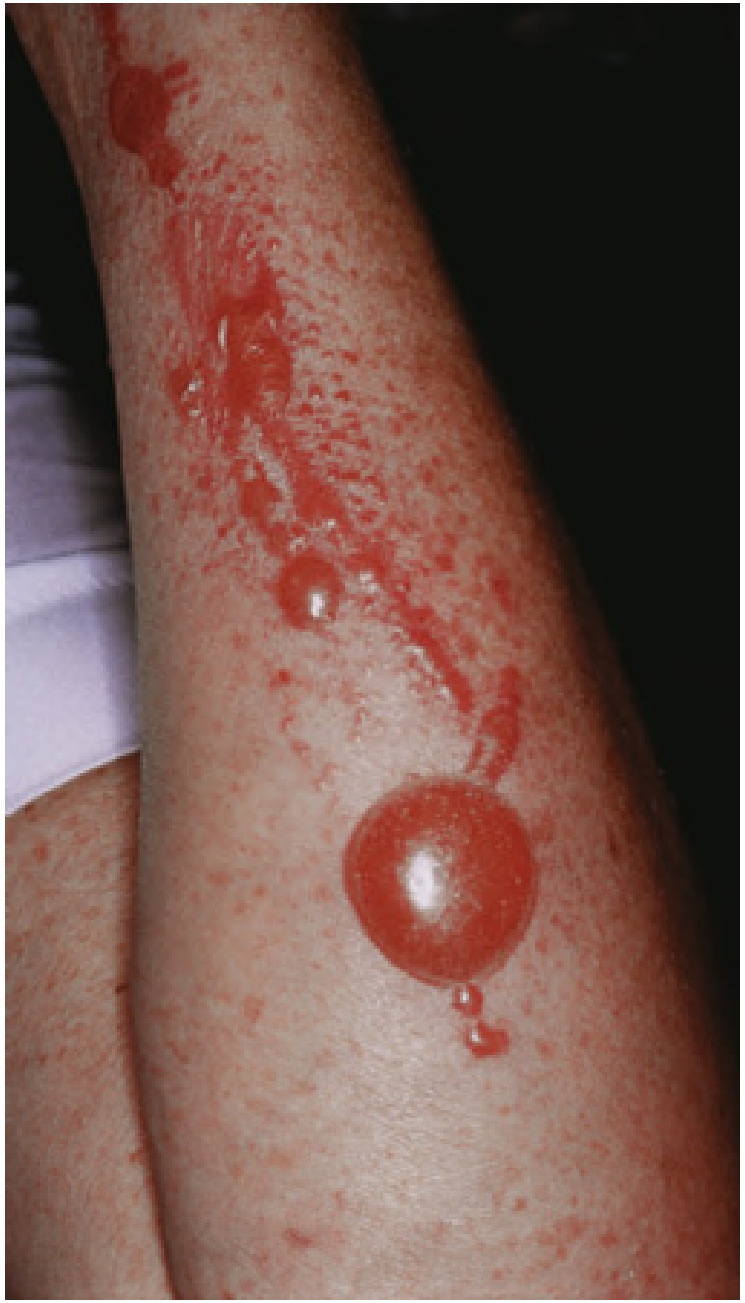
RISK ACTIVITIES FOR PHYTOPHOTODERMATITIS	
Cosmetics	Tan promoters or perfumes containing bergamot oil (berlock dermatitis) ~~or a fig leaf decoction~~
Fruit and vegetable processing	Canning celery or stocking celery in grocery stores Making lemonade or limeade, especially if selling it outside Squeezing lime juice for margaritas and other drinks or guacamole
Gardening	Brushing against ~~*Dictamnus* spp. ('gas plant'/~~burning bush') (US, Europe, N China) or *Ruta* (UK) Cultivating celery, parsnip or parsley Clearing weeds with a 'weed-wacker' (US) or 'string trimmer' (UK) Pruning or harvesting figs Growing *Angelica* for herbal medicine (Korea), cake decorating (when candied), tonic and flavoring in wines (esp. Benedictine, US)
Hiking	Through fields and riverbanks (*Heracleum* spp.) (Pacific NW, Europe) Rolling in meadows Hiking in southern California and Baja California (*Cneoridium dumosum*, coast spice bush [Rutaceae])
Ingestion	Ingestion of massive quantities of psoralens (esp. celery) before UVA tanning Ingestion of *Chlorella* (an alga) (Japan)
Medications	Excessive exposure to UV radiation after taking or applying psoralens for PUVA Application of rue (*Ruta* spp.) as an insect repellant
Play	Making peashooters with *Heracleum* spp. Playing among rue bushes or Apiaceae Fighting with parsnips/celery Wearing leis of *Pelea anisata* (Hawaii)

Outpatient Consideration

- Linear, vesiculated, acute, pink, itchy rashes are almost always caused by external exposures as in allergic contact dermatitis (e.g. poison ivy)
- Choose an appropriate topical corticosteroid

Poison Ivy

Linear
Vesiculated
Intensely pruritic
Choose high potency steroid



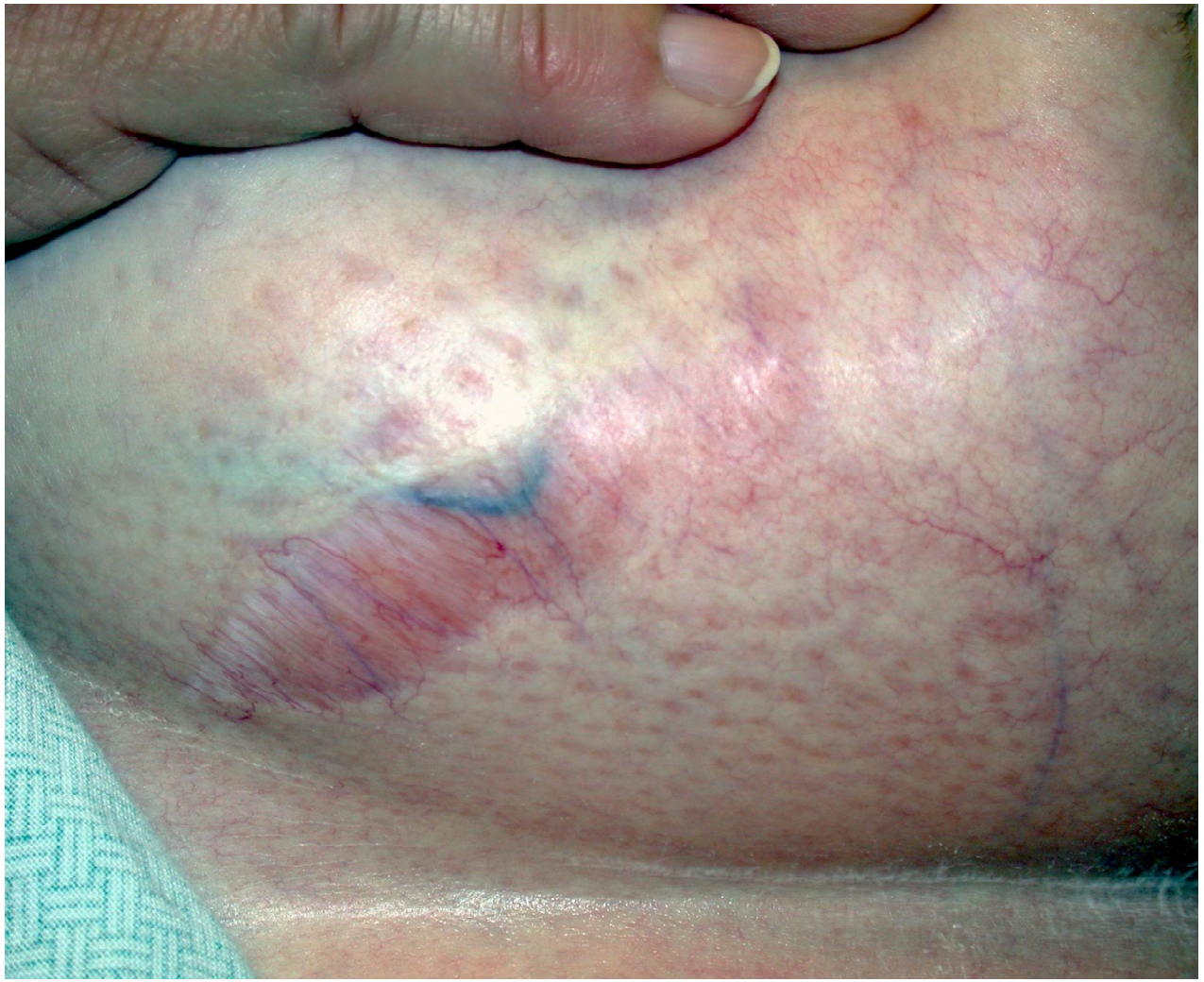
Topical Steroids

- High potency - clobetasol
  - Acute, severely inflamed skin
    - Contact dermatitis, hand dermatitis, bug bites
  - Limit use to two weeks
- Medium potency - triamcinalone 0.1%
  - Chronic, moderately inflamed skin
    - Venous stasis dermatitis, chronic eczema
- Low potency - hydrocortisone 1% or 2.5%
  - Chronic use, groin, face, axilla
    - Seborrheic dermatitis, intertrigo

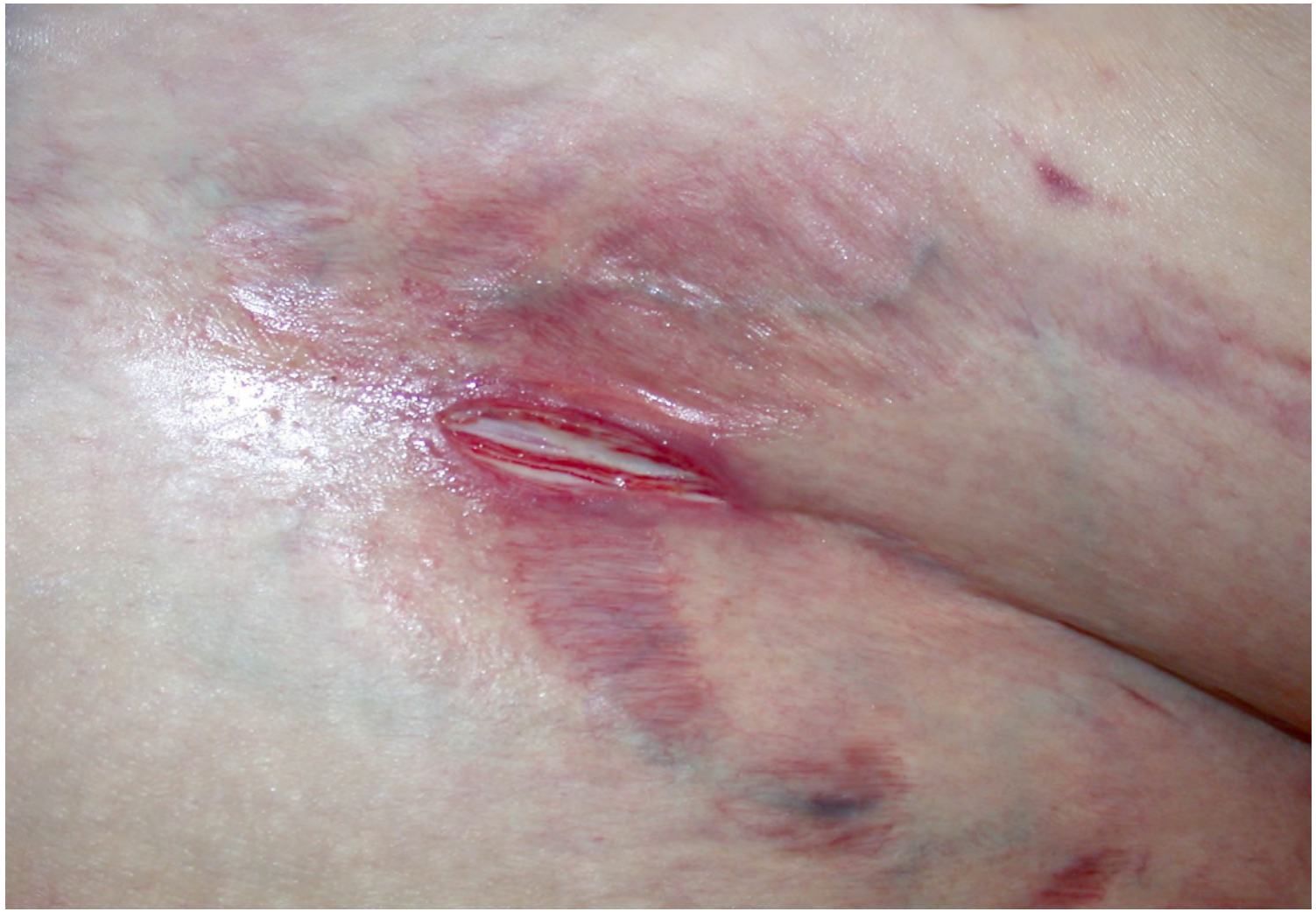
Topical Steroid Risks/Side Effects

- Atrophy
- Striae
- Ulceration
- Acne
- Purpura
- Cushing syndrome
- H-P-A axis suppression

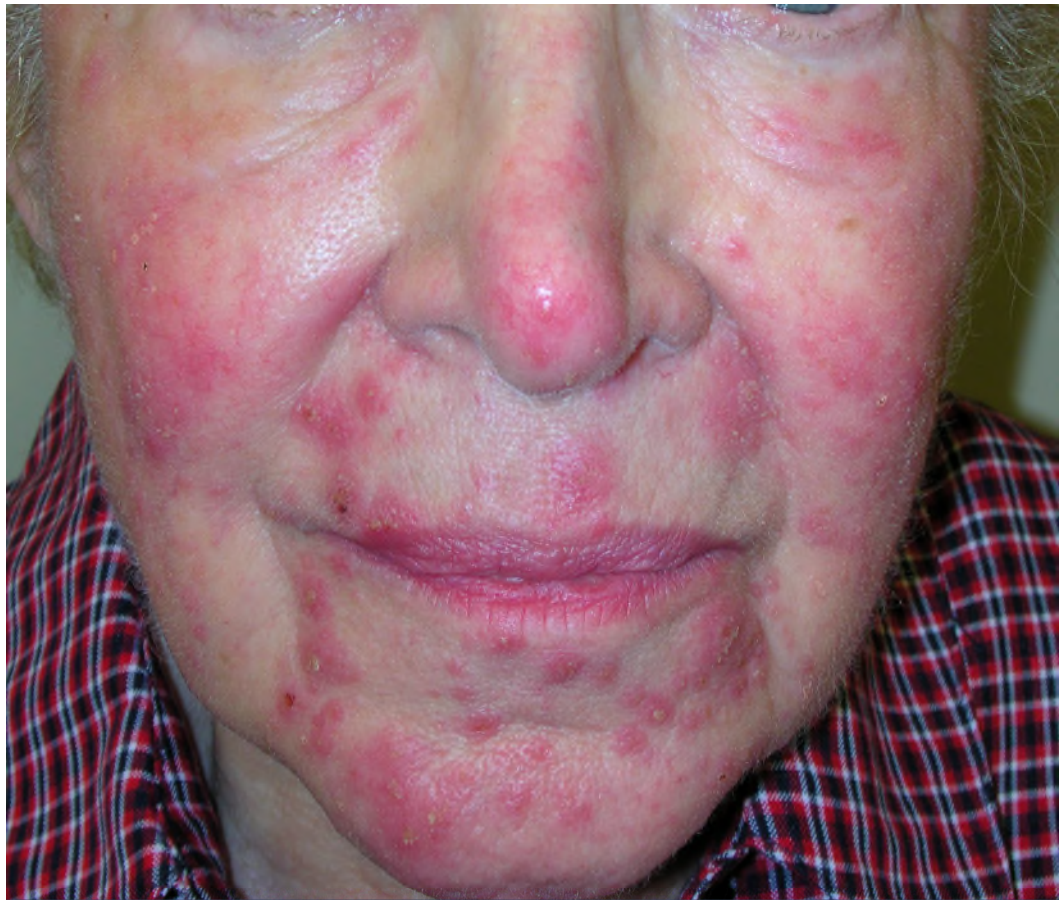
Steroid Atrophy



Steroid Ulcer



Steroid Acne



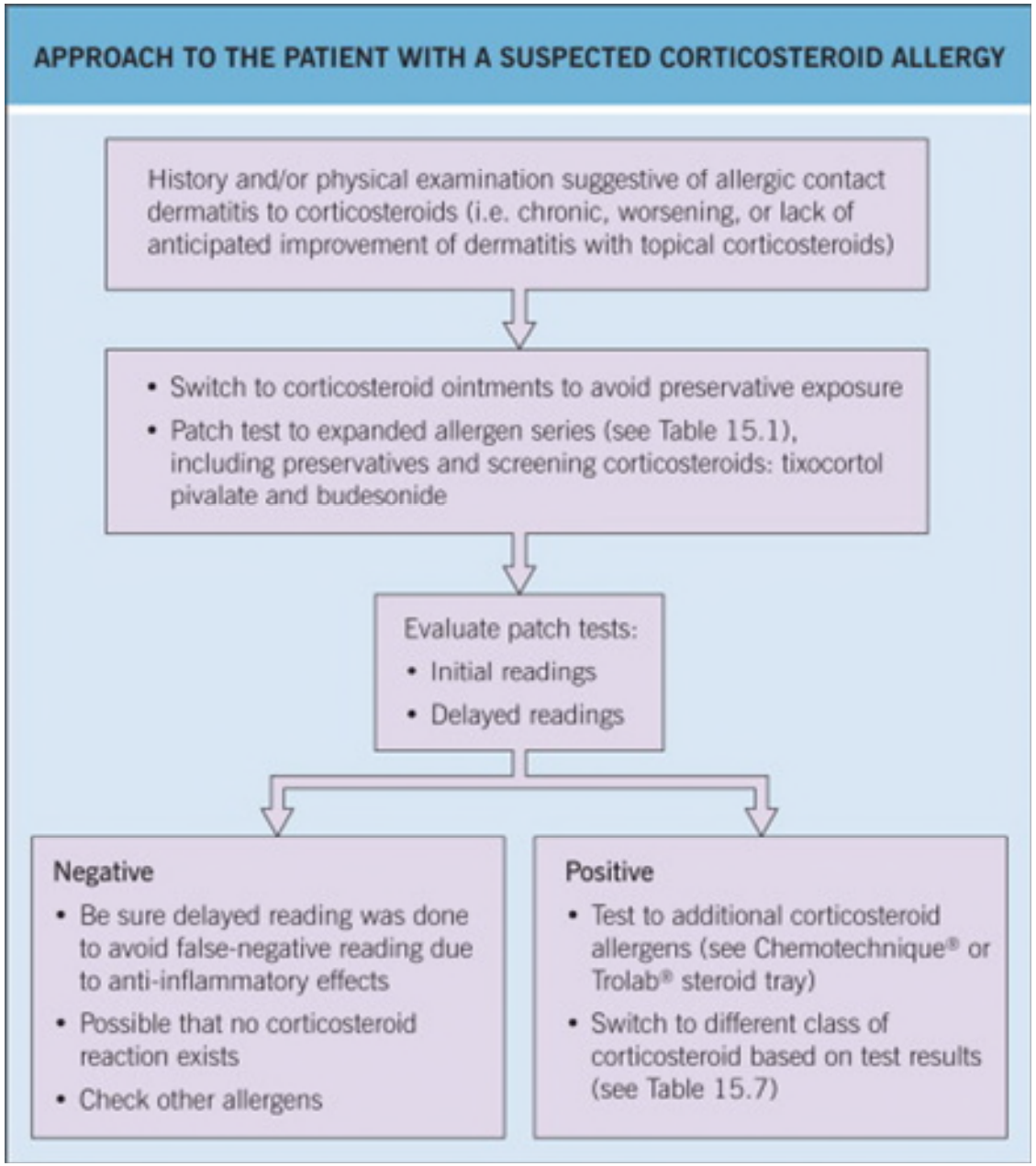
- Stop steroid
- Topical antibiotic
  - Clindamycin, metronidazole, sulfur
- Systemic antibiotic
  - Tetracycline, erythromycin
- Two to three months

Case

- A patient with bug bites did not improve with hydrocortisone.
- She was given triamcinalone to use for two weeks.
- Her condition worsened so she was given fluocinonide (lidex) for 2 weeks but she continued to worsen, developing widespread pink itchy patches everywhere she used the medicine.

Question: What is the most likely reason this patient is not improving?

A. Bug bites worsen with corticosteroids
B. Steroid allergy
C. Steroid is not strong enough
D. Need to give steroid more time to work



Prescribe the steroid of correct potency and dose.

Verify the diagnosis.

If steroid is “not working” or condition worsens then consider steroid allergy.

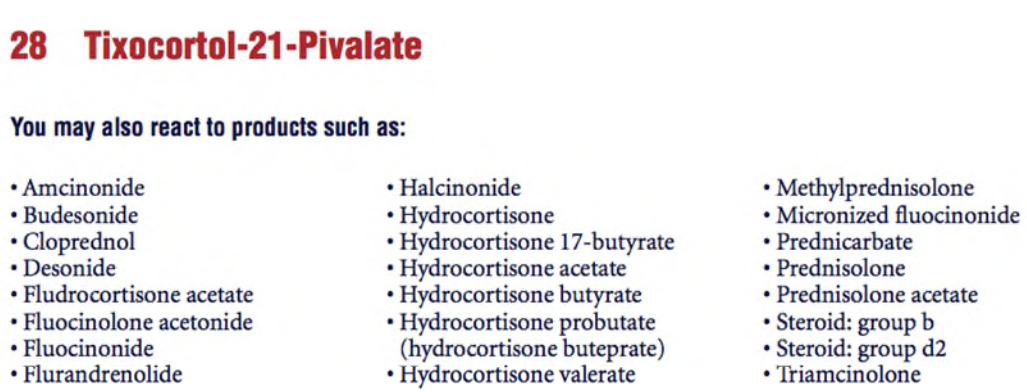
Case

- She continued to worsen so she was given a medrol dose pack..

- A few days later she presented with a severe and widespread red pruritic rash that covers most of her body.

Question:
Is it possible that p.o. medrol caused worsening of her condition?

Steroid Allergy



28 Tixocortol-21-Pivalate

You may also react to products such as:

- Amcinonide
- Budesonide
- Cloprednol
- Desonide
- Fludrocortisone acetate
- Fluocinolone acetonide
- Fluocinonide
- Flurandrenolide
- Halcinonide
- Hydrocortisone
- Hydrocortisone 17-butyrate
- Hydrocortisone acetate
- Hydrocortisone butyrate
- Hydrocortisone probutate (hydrocortisone buteprate)
- Hydrocortisone valerate
- Methylprednisolone
- Micronized fluocinonide
- Prednicarbate
- Prednisolone
- Prednisolone acetate
- Steroid: group b
- Steroid: group d2
- Triamcinolone

- 0.2% - 6% of all cases of delayed type hypersensitivity

- These 2 identify 91% of cases

27 Budesonide

What should you look for and avoid?*

Avoid products that list any of the following names in the ingredients:

- (11-beta,16-alpha)-16,17-(Butylidenebis(oxy))-11, 21-dihydroxypregna-1,4-diene-3,20-dione
- (RS)-11beta,16alpha,17,21-Tetrahydroxypregna-1, 4-diene-3,20-dione cyclic 16,17-acetal with butyraldehyde
- 16-alpha,17-alpha-Butylidenedioxy-11-beta, 21-dihydroxy-1,4-pregnadiene-3,20-dione
- Bidien
- Budeson
- Cortivent
- Entocort
- Micronyl
- Preferid
- Pulmicort
- Respules
- Rhinocort
- Rhinocort alpha
- Rhinocort aqua
- Spirocort

Avoid medication such as:

- Amcinonide
- Desonide
- Fluclorinde
- Flunisolide
- Fluocinolone acetonide
- Fluocinonide
- Halcinonide
- Procinonide
- Pulmicort®
- Rhinocort Aqua®
- Rhinocort®
- Symbicort®
- Triamcinolone
- Triamcinolone acetonide
- Triamcinolone diacetate

You may also react to other medications such as:

- Hydrocortisone-17-butyrate
- Hydrocortisone-17-aceponate
- Hydrocortisone buteprate
- Methylprednisolone aceponate
- Prednicarbate

Allergy EUROPEAN JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY

Allergy

ORIGINAL ARTICLE SKIN AND EYE DISEASES

Systemic contact dermatitis to corticosteroids

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Keywords
corticosteroids; delayed-type; drug eruptions; systemic contact dermatitis.

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Edited by: Werner Aberer

Abstract

Background: Although unexpected and paradoxical, allergic hypersensitivity to corticosteroids is a common finding, delayed-type reactions being much more frequently encountered than the immediate-type ones. Although the skin is the main sensitization and elicitation route, other routes, amongst them systemic administration of corticosteroids may exceptionally be involved.
Objective: To determine the frequency, clinical presentation and cross-reactivity patterns for allergic reactions following systemic administration of corticosteroids amongst patients with identified and investigated 'contact allergy' to corticosteroids.
Methods: We reviewed clinical data, patch test results and sensitization sources in patients who reacted positively to corticosteroids tested in the K.U. Leuven Dermatology department during an 18-year period.
Results: Sixteen subjects (out of 315 with CS delayed-type hypersensitivity) presented with allergic manifestations due to systemic administration of corticosteroids. Most patients reacted to molecules from the three groups of the recently reappraised classification.
Conclusion: The reactions observed seem to be in most cases 'systemic contact dermatitis' due to oral or parenteral re-exposure of sensitized individuals with the respective corticosteroids previously applied topically. Moreover, most patients seem to be able to react to any corticosteroid molecules and therefore need a systematic individualized evaluation of their sensitization/tolerance profile.

-5% (16/325) of steroid patch test positive cases

-Oral/i.v. exposure led to severe widespread dermatitis

Corticosteroid Allergy

- Topical
  - Contact dermatitis, focal, patchy
- Systemic
  - Oral, intravenous, intra-articular, inhaled, nasal
  - Some, but not all cases also type 1 hypersensitivity
  - Onset 24 hours, peak at 72 hours
  - Eczematous
  - Worsening asthma
  - Methylprednisolone, prednisone, hydrocortisone, budesonide …

LeBerge et al. Immediate and Delayed Hypersensitivity to Systemic Corticosteroids. Dermatitis November/December 2012

Clinical Reviews in Allergy & Immunology
August 2014, Volume 47, Issue 1, pp 26–37 | Cite as

Hypersensitivity Reactions to Corticosteroids

Authors | Authors and affiliations

Rani R. Vatti, Fatima Ali, Suzanne Teuber, Christopher Chang, M. Eric Gershwin

Article
First Online: 09 April 2013

Abstract

Hypersensitivity reactions to corticosteroids (CS) are rare in the general population, but they are not uncommon in high-risk groups such as patients who receive repeated doses of CS. Hypersensitivity reactions to steroids are broadly divided into two categories: immediate reactions, typically occurring within 1 h of drug administration, and non-immediate reactions, which manifest more than an hour after drug administration. The latter group is more common. We reviewed the literature using the search terms "hypersensitivity to steroids, adverse effects of steroids, steroid allergy, allergic contact dermatitis, corticosteroid side effects, and type I hypersensitivity" to identify studies or clinical reports of steroid hypersensitivity. We discuss the prevalence, mechanism, presentation, evaluation, and therapeutic options in corticosteroid hypersensitivity reactions. There is a paucity of literature on corticosteroid

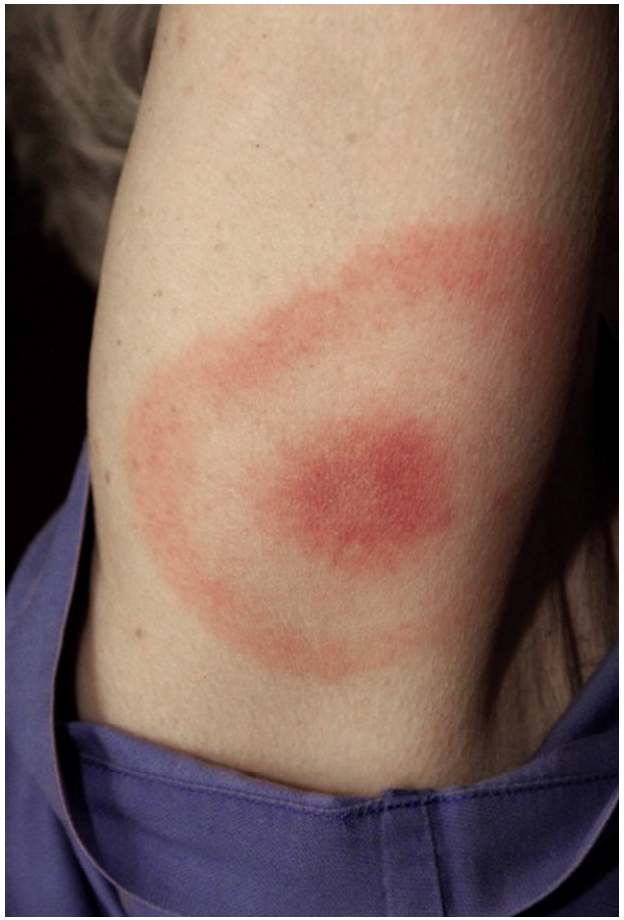
Case

Ball into woods…

Case

- 45 year old patient
- Rash
- Mild headache, feels fatigued, a bit achy but otherwise healthy
- Removed this tick 6 days prior to rash

Case: Rash



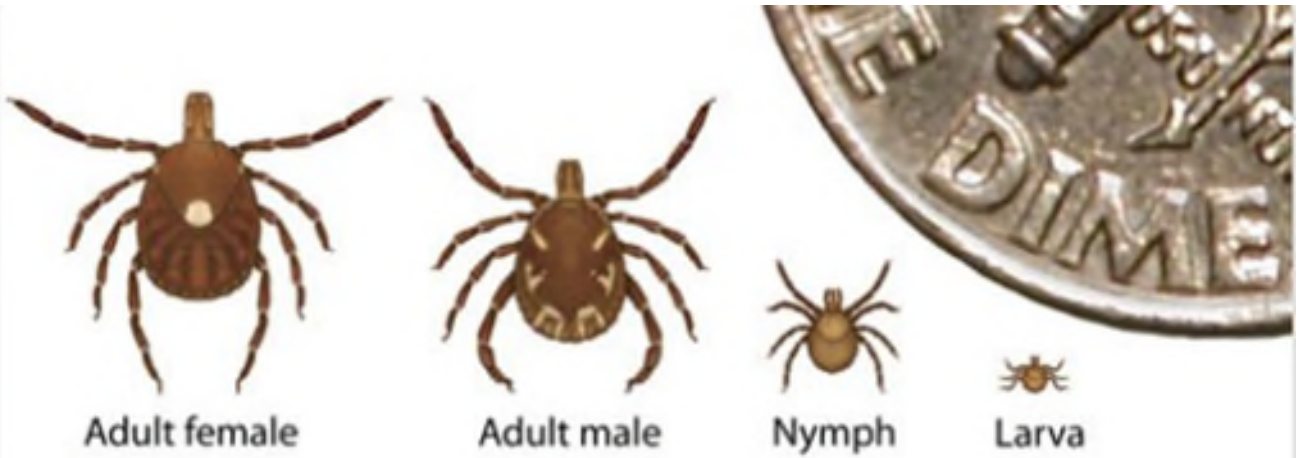
Question: What is the most likely diagnosis?

A. Lyme disease
B. Southern Tick Associated Rash Illness (STARI)
C. Ehrlichiosis
D. Rocky mountain spotted fever

Southern Tick Associated Rash Illness (STARI)

- Borrelia lonestari
- No serologic test
- Amblyomma americanum (lone star tick)
- Erythema migrans –like rash (looks like Lyme disease rash)
- Mild: headache, malaise, fatigue, nausea
- Symptoms resolve with doxycycline
- No long term complications

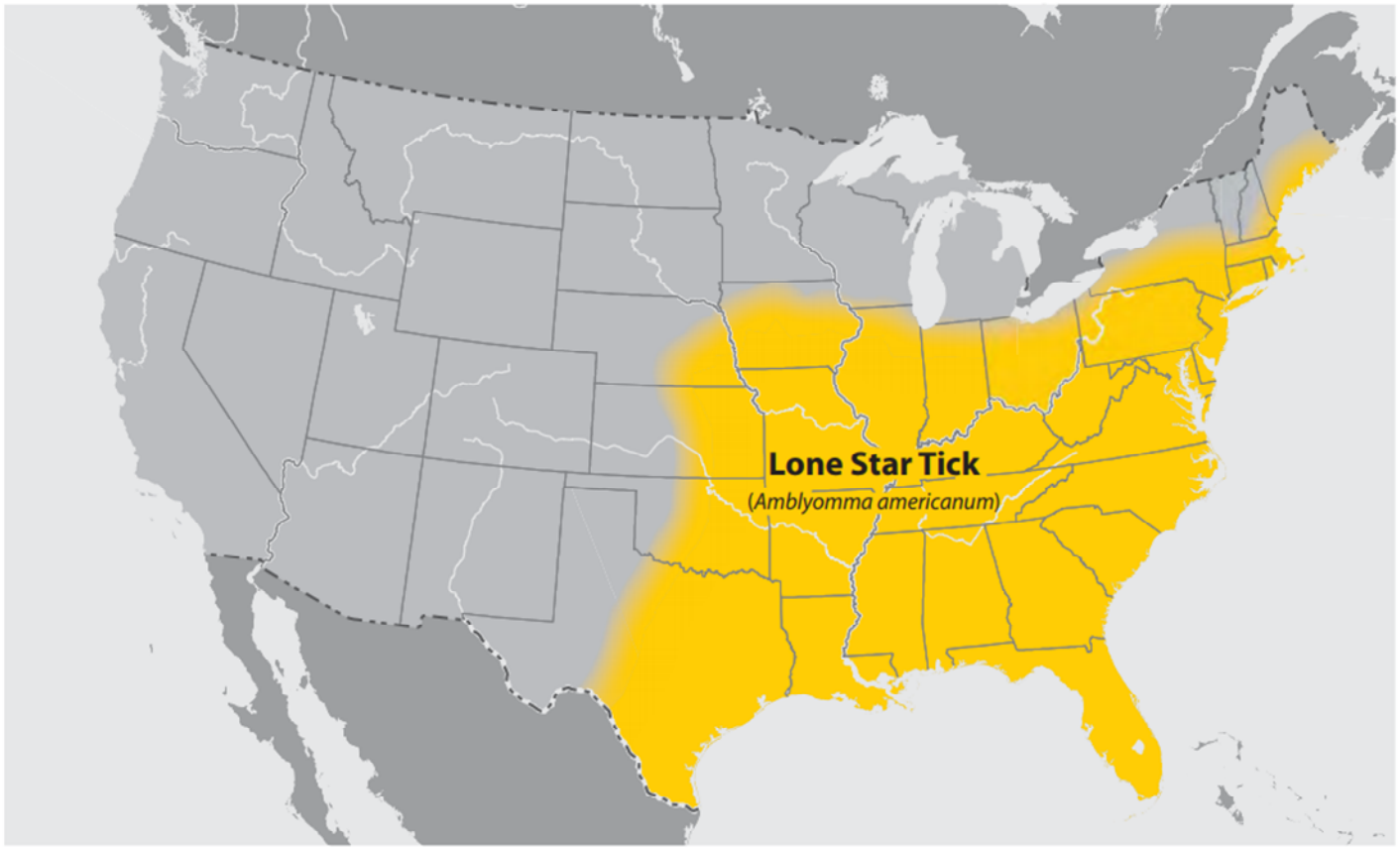
Lone Star Tick



Lone star ticks have not been shown to transmit *Borrelia burgdorferi*, the cause of Lyme disease. In fact, their saliva has been shown to kill *Borrelia* (Ledin et al., 2005, Zeidner et al., 2009).

Amblyomma americanum

Lone Star Tick - STARI



ABOUT THIS MAP: This map shows the extent of established *Amblyomma americanum* tick populations, commonly known as lone star ticks. However, tick abundance within this area varies locally. The map does not represent the risk of contracting any specific tickborne illness. Please consult your local health department or USDA Cooperative Extension office to learn about the risks of tickborne disease in your local area. Rev. 07/2011.

National Center for Emerging and Zoonotic Infectious Diseases

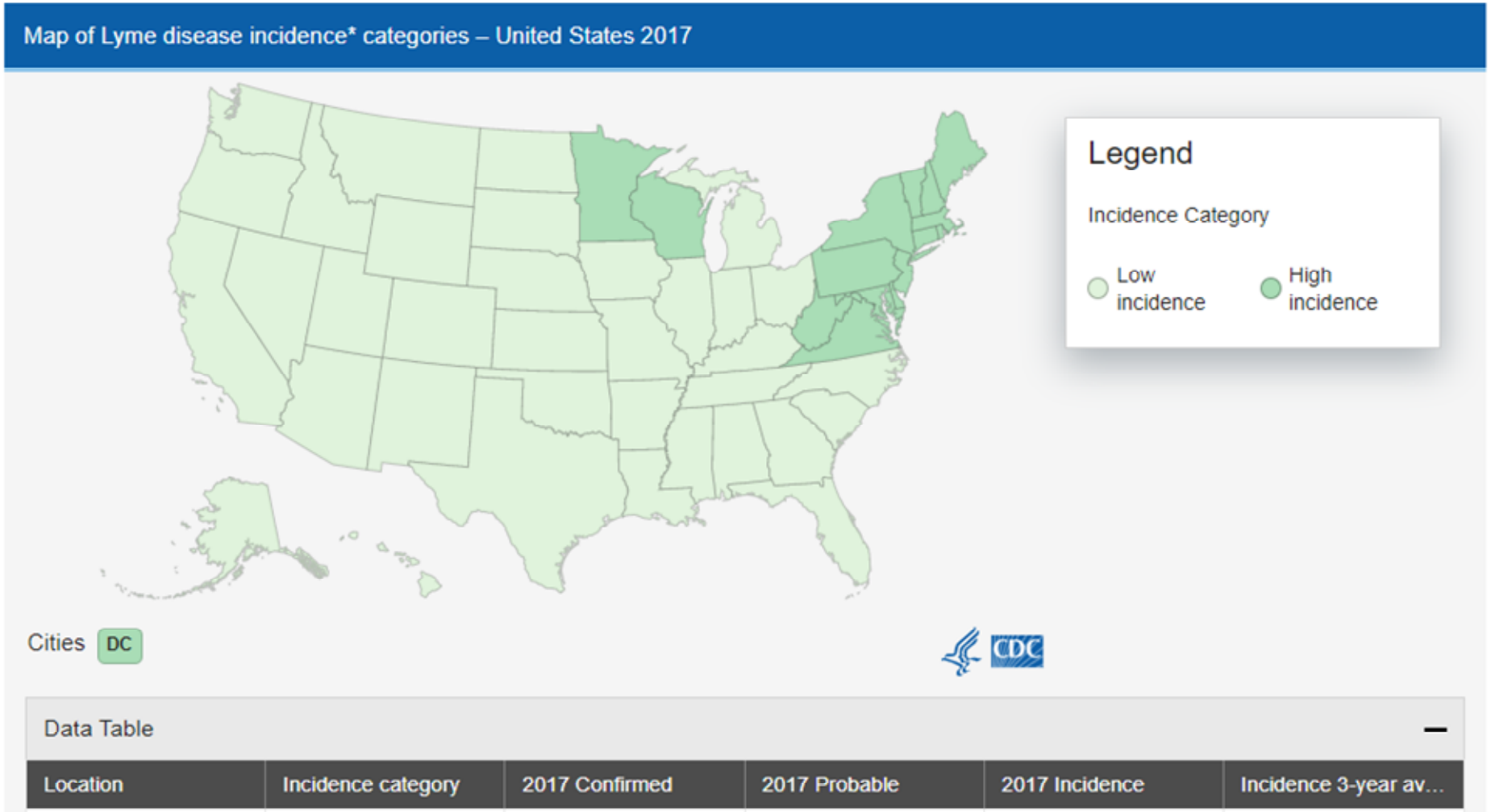
Division of Vector-Borne Diseases

Ixodes scapularis

Lyme disease
Borrelia burgdorferi

Lyme Disease Maps: Most Recent Year

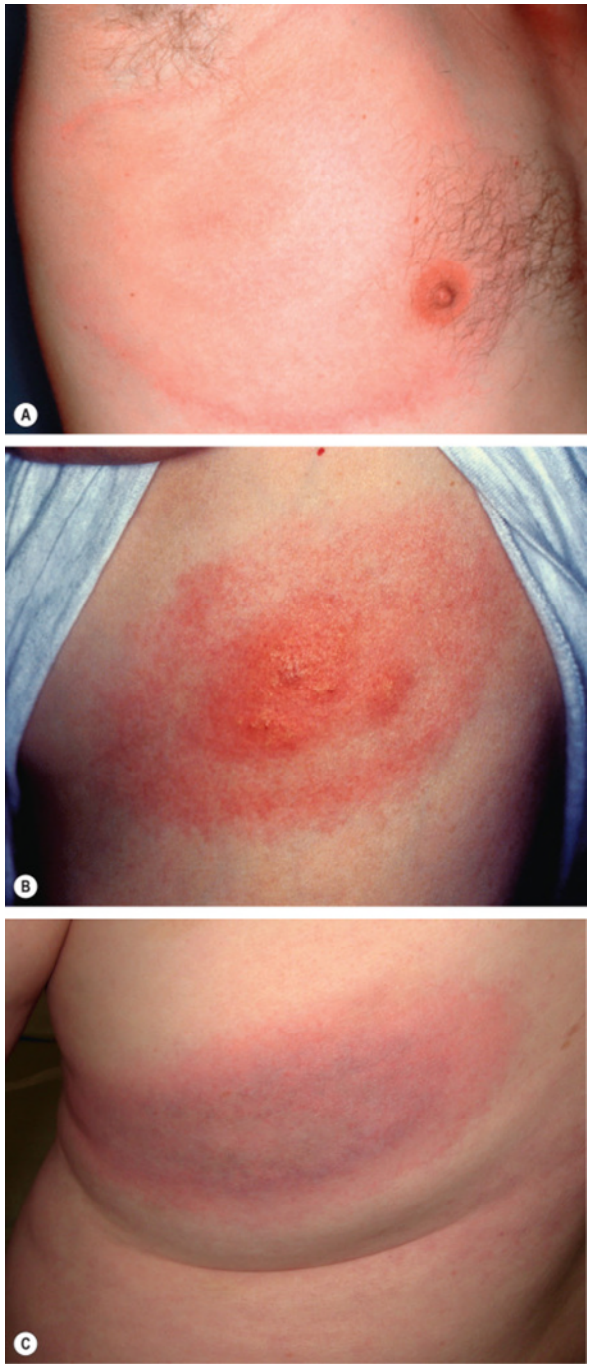
cdc.gov



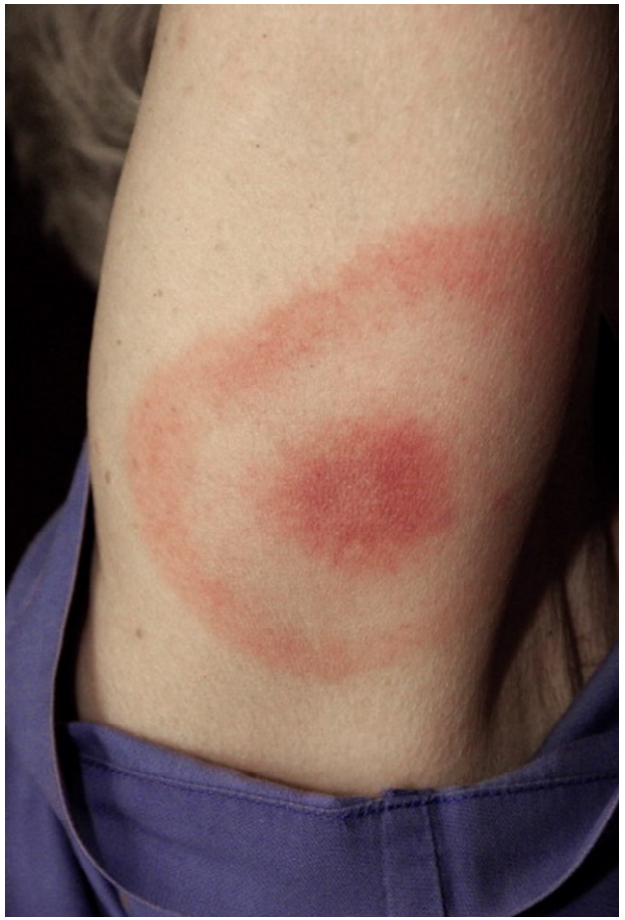
Data Table

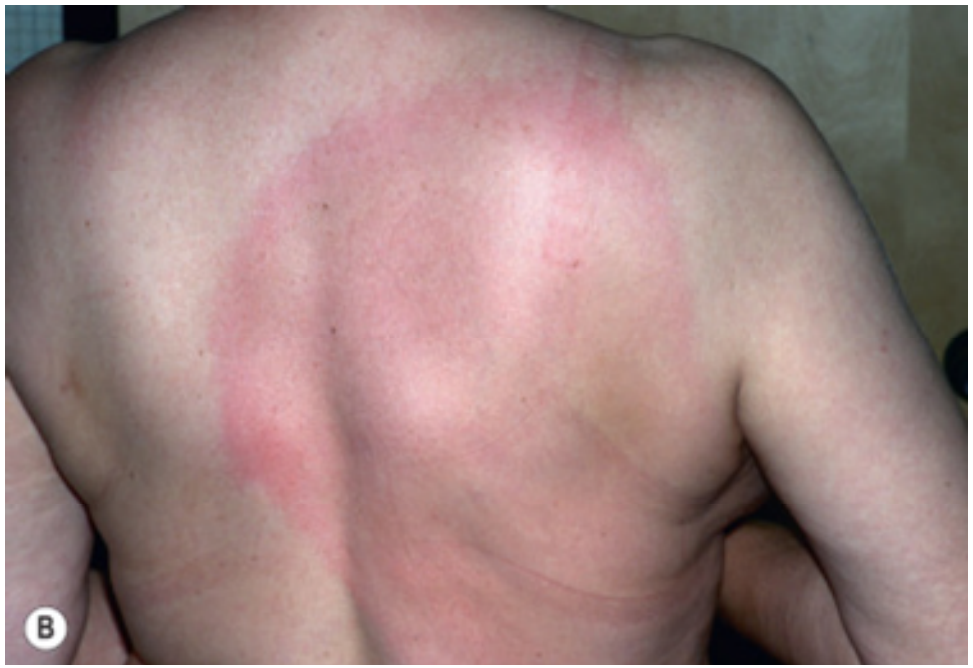
Location	Incidence category	2017 Confirmed	2017 Probable	2017 Incidence	Incidence 3-year av...
Missouri	Low incidence	2	10	0	0

Lyme Disease



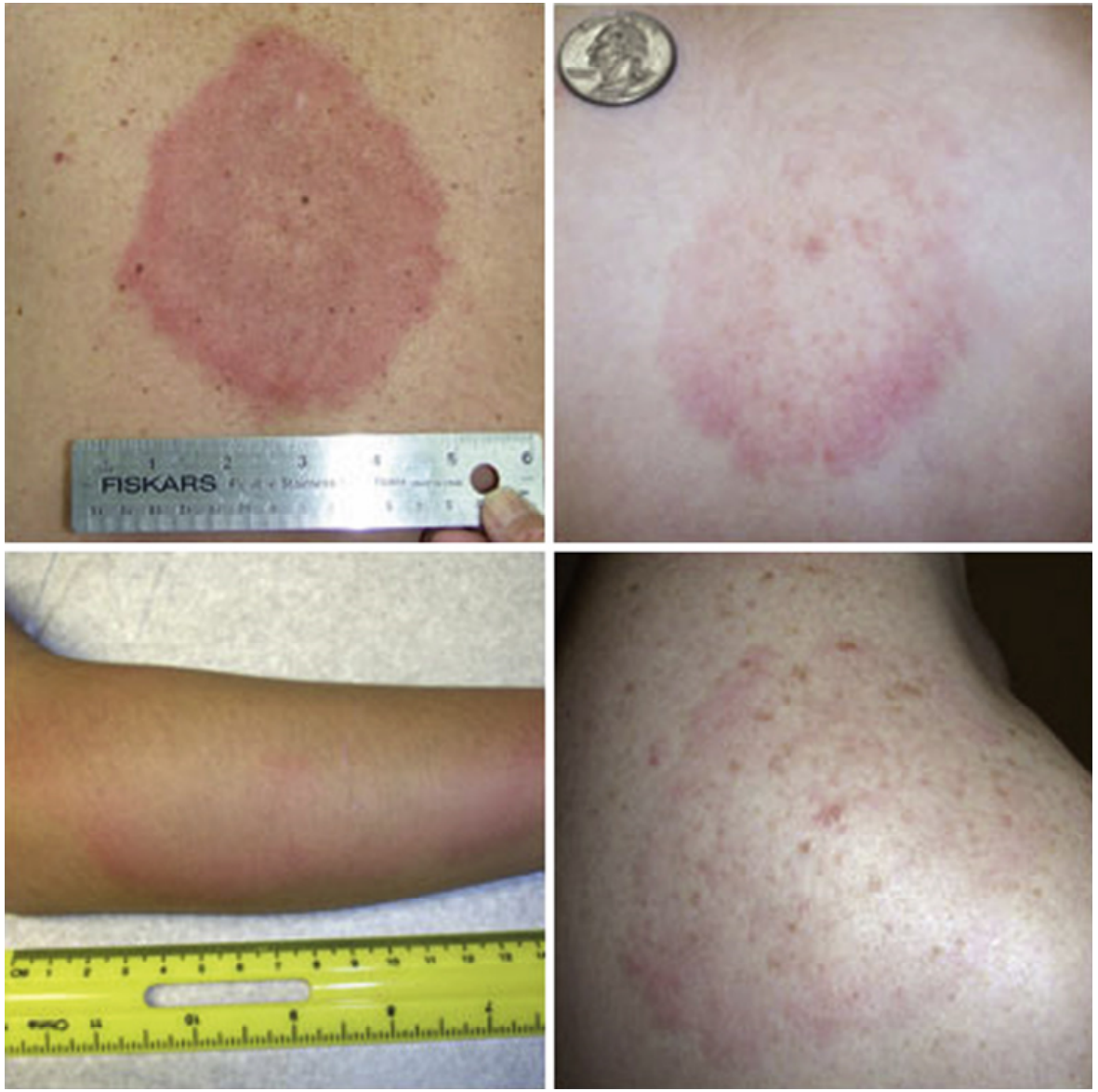
Lyme Disease





Rash does not distinguish STARI from Lyme disease

Stari



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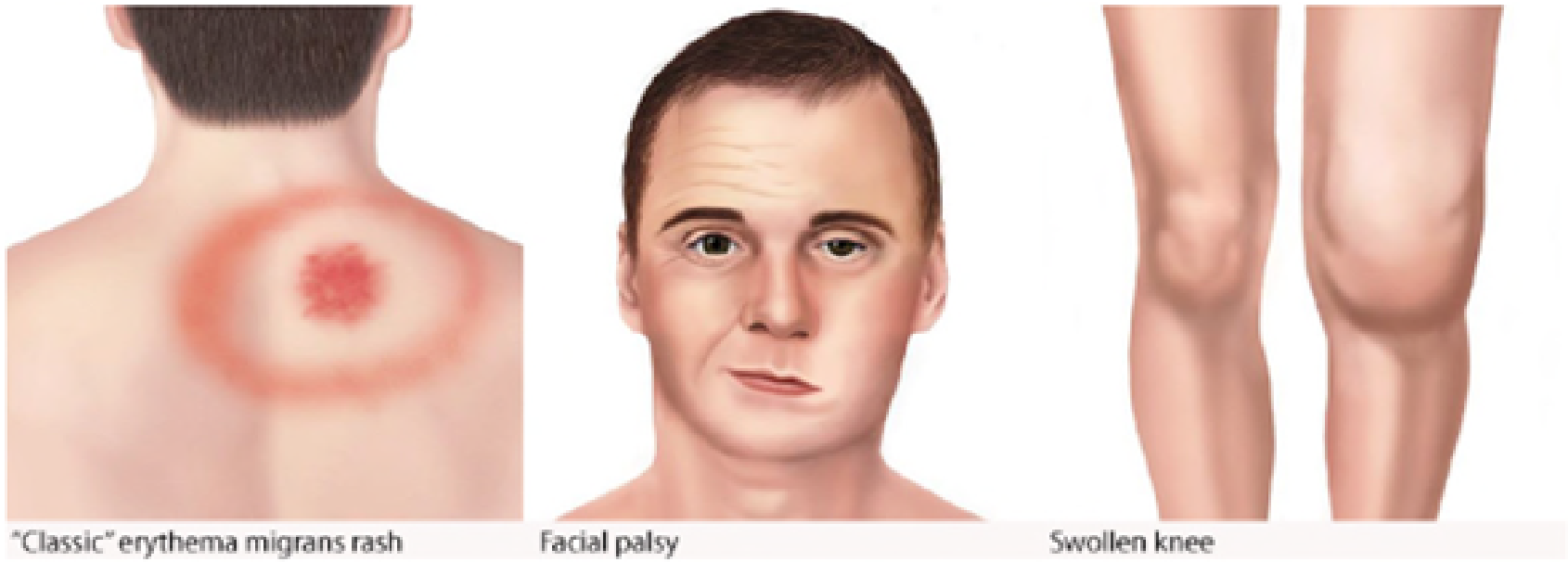
Lyme Disease



In Stari – will see rash but not likely arthralgia, neurologic symptoms or long term sequelae

cdc.gov

Lyme Disease

TABLE

Table 74.17

Major extracutaneous features of Lyme disease.

MAJOR EXTRACUTANEOUS FEATURES OF LYME DISEASE	
General	Fever, malaise, headache, regional lymphadenopathy, non-productive cough
Eyes	Conjunctivitis, keratitis, iritis, episcleritis, retrobulbar neuritis
Neurologic	Meningitis, encephalitis, Guillain–Barré syndrome, Bell's palsy, psychiatric syndromes, optic atrophy, ataxia
Cardiac	Heart block, arrhythmias, pericarditis, myocarditis, cardiomyopathy, congestive heart failure
Rheumatologic	Arthralgias, tendinitis, oligoarthritis, bone calcifications and cysts
Genitourinary	Orchitis, softening of the testes, proteinuria, microhematuria

Bolognia dermatology text

Study results: Distinctions between STARI and Lyme disease symptoms

In a study that compared physical findings from STARI patients in Missouri with Lyme disease patients in New York (Wormser et al, 2005), several key differences were noted:

- Patients with STARI were more likely to recall a tick bite than were patients with Lyme disease.
- The time period from tick bite to onset of the skin lesion was shorter among patients with STARI (6 days, on average).
- STARI patients with an erythema migrans rash were less likely to have other symptoms than were Lyme disease patients with erythema migrans rash.
- STARI patients were less likely to have multiple skin lesions, had lesions that were smaller in size than Lyme disease patients (6-10 cm for STARI vs. 6-28 cm for Lyme disease), and had lesions that were more circular in shape and with more central clearing.
- After antibiotic treatment, STARI patients recovered more rapidly than did Lyme disease patients.

Page last reviewed: November 19, 2018
Content source: Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Division of Vector-Borne Diseases (DVBD)

Outpatient Considerations

- Erythema migrans is seen in both Lyme disease and STARI
- STARI is mild relative to Lyme disease and has no long term sequelae
- Ask about travel history
- Look for ticks and consider tick-borne illnesses
- Treat with doxycycline

Lyme Disease

Age Category	Drug	Dosage	Maximum	Duration, Days
Adults	Doxycycline	100 mg twice per day, orally	N/A	10-21*
	Cefuroxime axetil	500 mg twice per day, orally	N/A	14-21
	Amoxicillin	500 mg three times per day, orally	N/A	14-21
Children	Amoxicillin	50 mg/kg per day orally, divided into 3 doses	500 mg per dose	14-21
	Doxycycline	4 mg/kg per day orally, divided into 2 doses	100 mg per dose	10-21*
	Cefuroxime axetil	30 mg/kg per day orally, divided into 2 doses	500 mg per dose	14-21

Treat STARI because of uncertainty related to Lyme diagnosis

cdc.gov

Case

- You remove this tick from a patient who has no rash, is otherwise healthy, ros all negative
- Travelled to high risk area for Lyme dz
- Tick has been on for about 5 days
- She is worried about Lyme disease and wants treatment.

Question: What is the best course of action?

A. Remove tick and observe, there is no need to treat
B. Remove tick and treat with doxycycline 100 mg po bid 3 weeks
C. Remove tick and treat with doxycycline 100 mg po bid 1 week
D. Remove tick and treat with doxycycline 200 mg po x 1

Lyme Prophylaxis

Approach to prophylaxis — We agree with the Infectious Diseases Society of America (IDSA) guidelines that recommend antibiotic prophylaxis only in patients who meet **all** of the following criteria (table 2) [10]:

- Attached tick identified as an adult or nymphal *I. scapularis* tick (deer tick).
- Tick is estimated to have been attached for ≥36 hours (by degree of engorgement or time of exposure).
- Prophylaxis is begun within 72 hours of tick removal.
- Local rate of infection of ticks with *B. burgdorferi* is ≥20 percent (these rates of infection have been shown to occur in parts of New England, parts of the mid-Atlantic States, and parts of Minnesota and Wisconsin).
- Doxycycline is not contraindicated. (See "Tetracyclines", section on 'Special populations' and "Tetracyclines", section on 'Adverse reactions'.)

If the patient meets all of these criteria, the recommended dose of doxycycline is 200 mg for adults and 4.4 mg/kg up to a maximum dose of 200 mg in children, given as a single dose. The American Academy of Pediatrics states that in areas of high risk, a single prophylactic dose of doxycycline can be used in children of any age to reduce the risk of acquiring Lyme disease after the bite of an infected *I. scapularis* tick [21]. However, in young children, the efficacy of this approach and the appropriate regimen have not been established, since doxycycline prophylaxis has not been studied in children <12 years of age and recommendations are extrapolated largely from the adult experience. (See 'Efficacy and rationale' above.)

UpToDate.com
Clin Infect Dis. 2006;

Tick Removal

Tick removal and testing

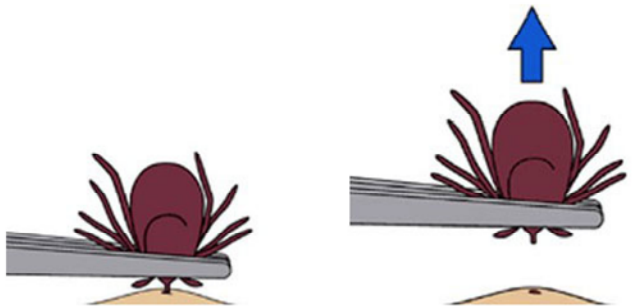
Español (Spanish)

Removing a tick | Testing of ticks

If you find a tick attached to your skin, there's no need to panic—the key is to remove the tick as soon as possible. There are several tick removal devices on the market, but a plain set of fine-tipped tweezers work very well.

How to remove a tick

1. Use fine-tipped tweezers to grasp the tick as close to the skin's surface as possible.
2. Pull upward with steady, even pressure. Don't twist or jerk the tick; this can cause the mouth-parts to break off and remain in the skin. If this happens, remove the mouth-parts with tweezers. If you are unable to remove the mouth easily with clean tweezers, leave it alone and let the skin heal.
3. After removing the tick, thoroughly clean the bite area and your hands with rubbing alcohol or soap and water.
4. Never crush a tick with your fingers. Dispose of a live tick by putting it in alcohol, placing it in a sealed bag/container, wrapping it tightly in tape, or flushing it down the toilet.



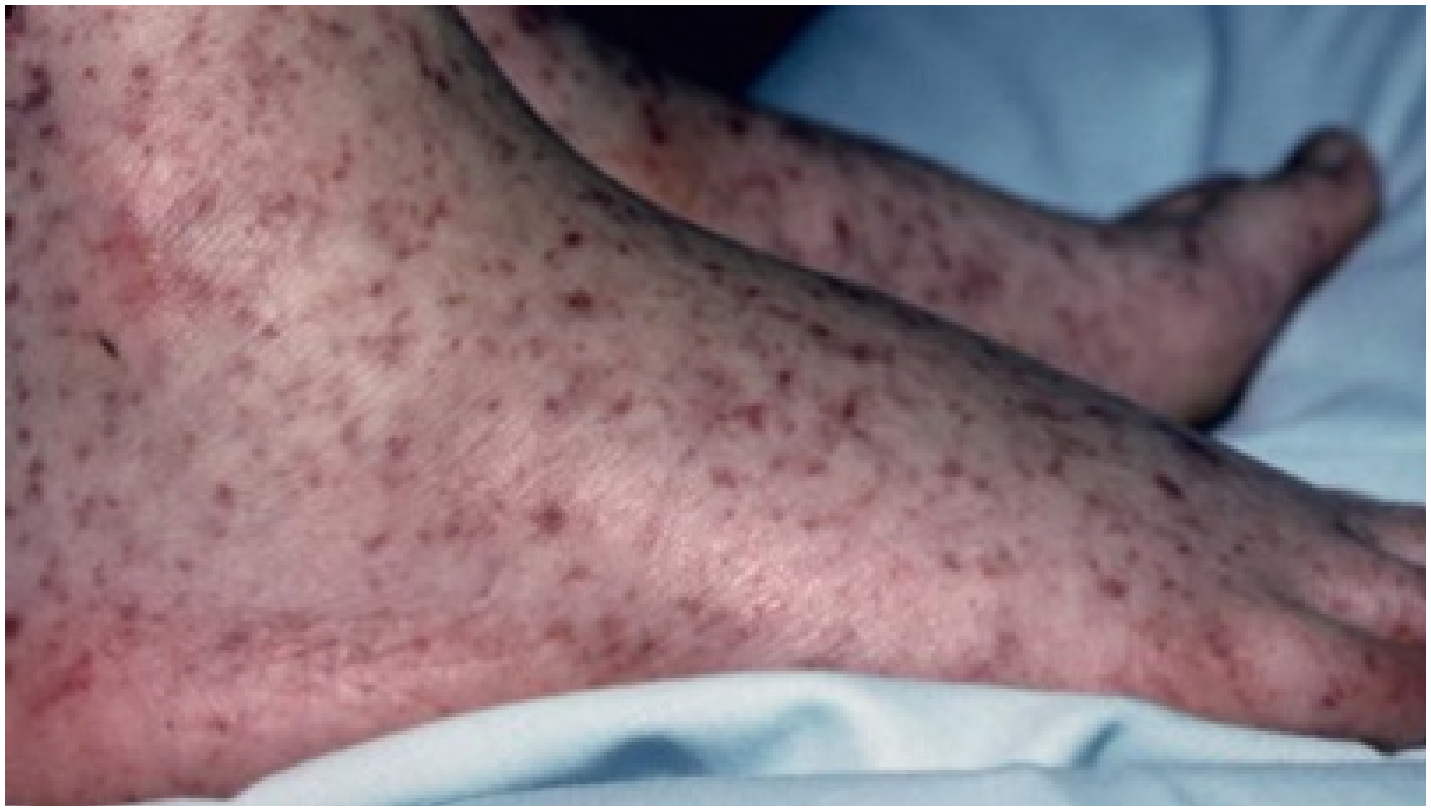
cdc.gov

Case

- 30 year old patient
- Fever, malaise, muscle aches, nausea, abdominal pain…
- Rash began on hands and feet faint pink pinpoint spots that
- Darkened and enlarged over the next few days
- She removed this tick from her body….

Case

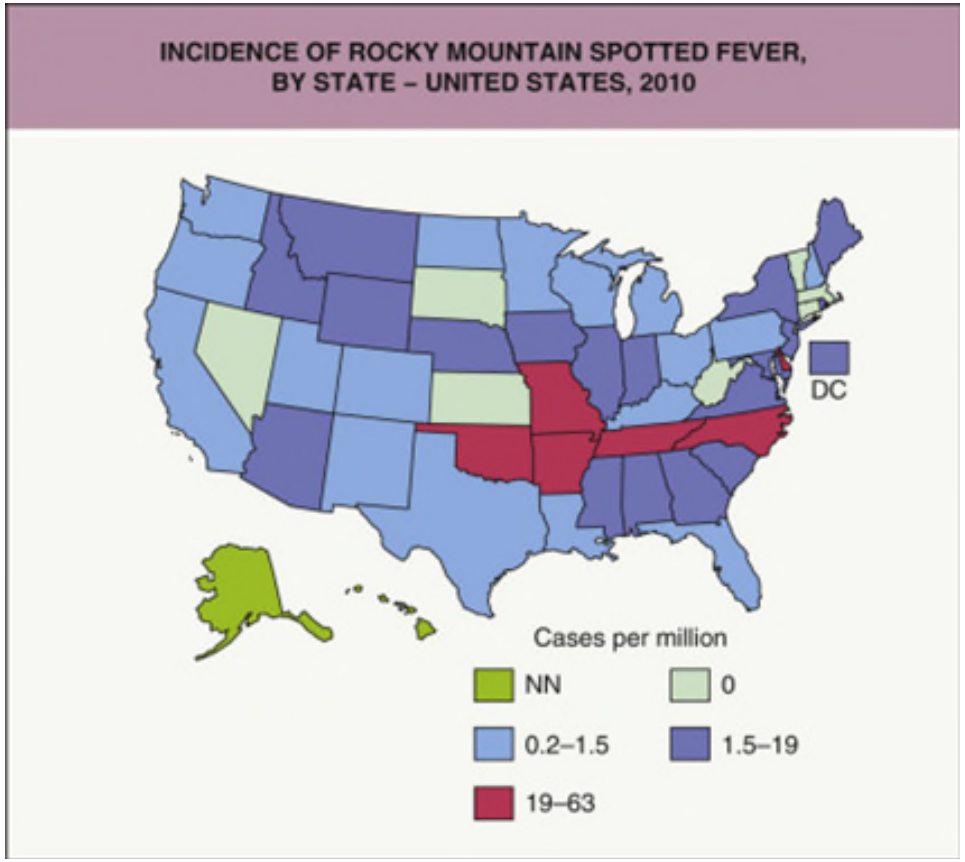
Case: Headache, Fever and purple macules on feet and hands

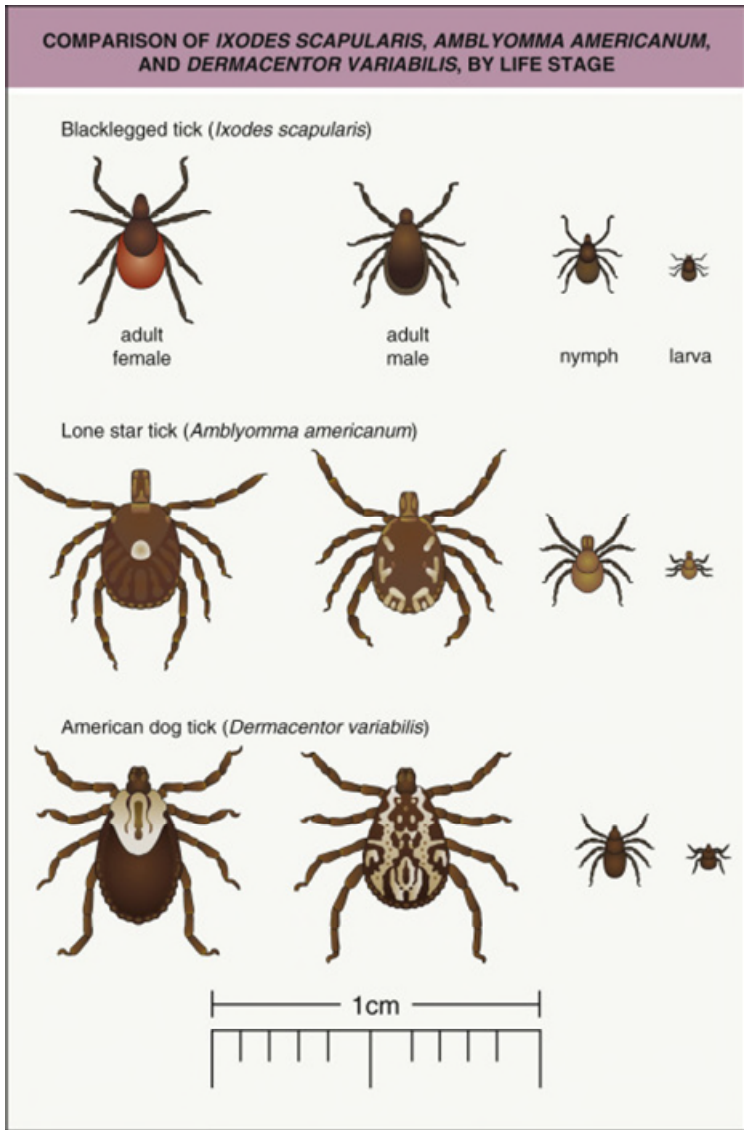


Question: What is the most likely diagnosis?

A. Ehrlichiosis
B. Babesiosis
C. STARI
D. Rocky mountain spotted fever

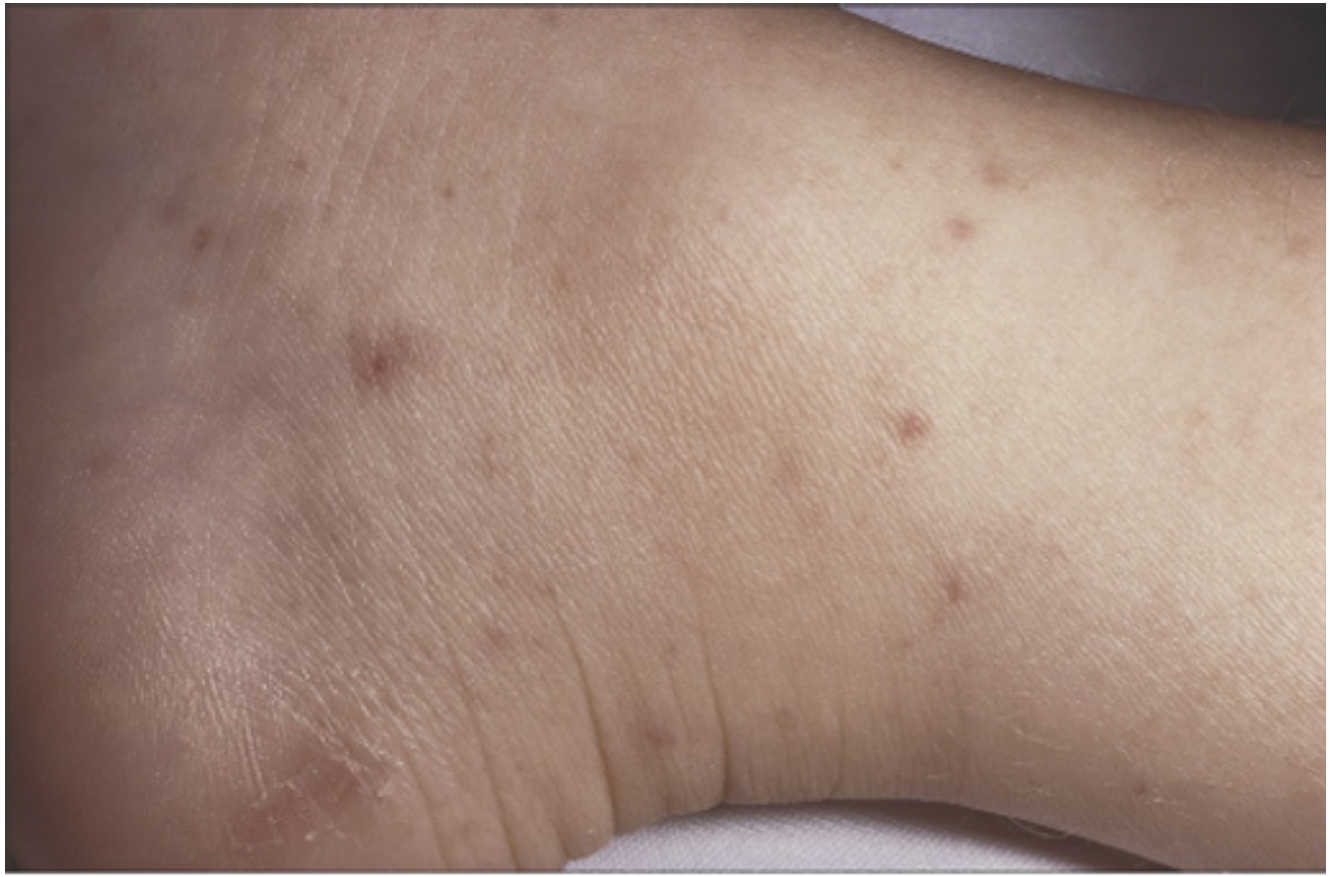
Rocky Mountain Spotted Fever





Bolognia Dermatology Text

Rocky Mountain Spotted Fever - Early

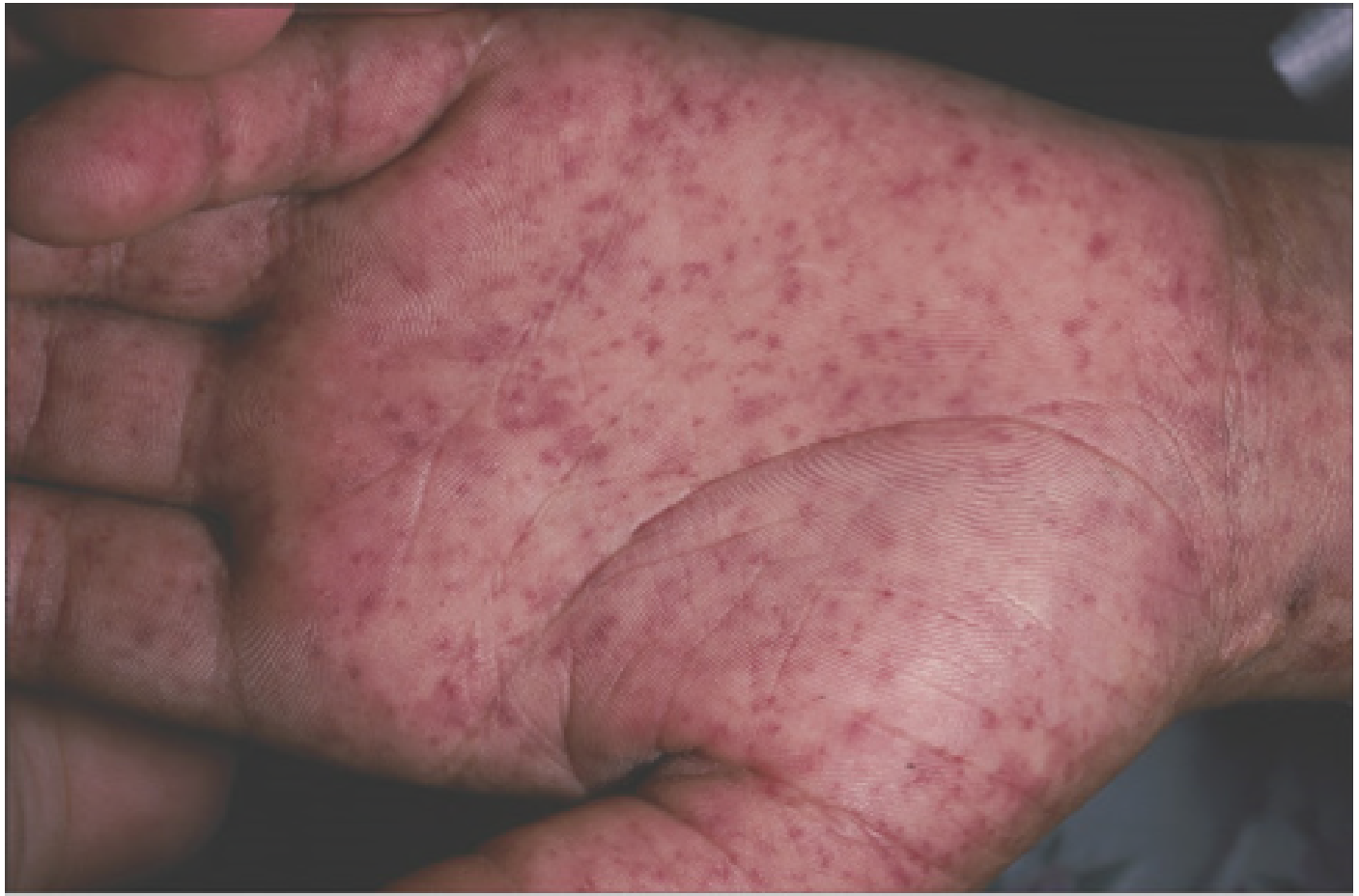


Rash begins (2-4 days after onset of fever) with erythematous macules on ankles and wrists…

onset 3-12 days after bite

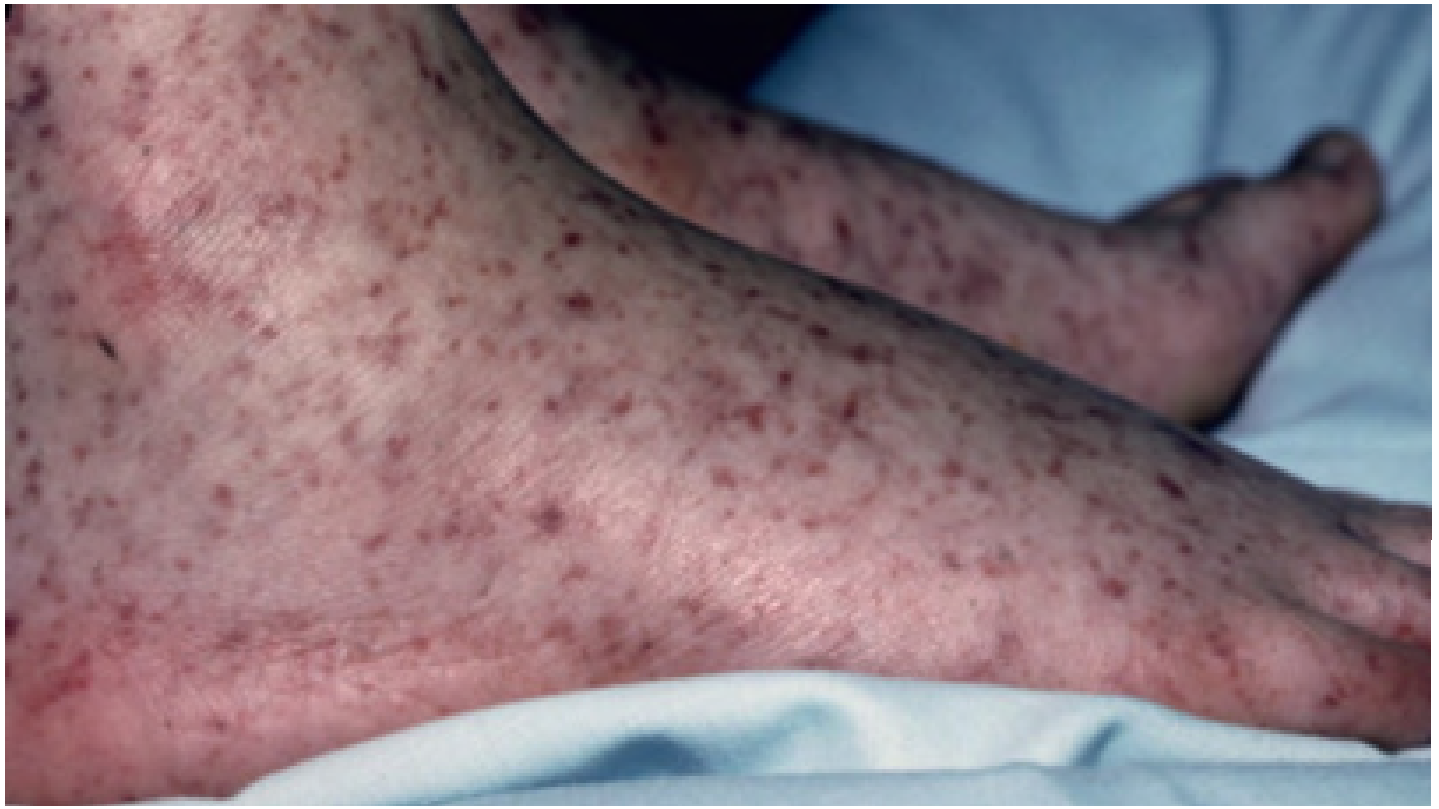
<50% of cases will have early rash

Rocky Mountain Spotted Fever



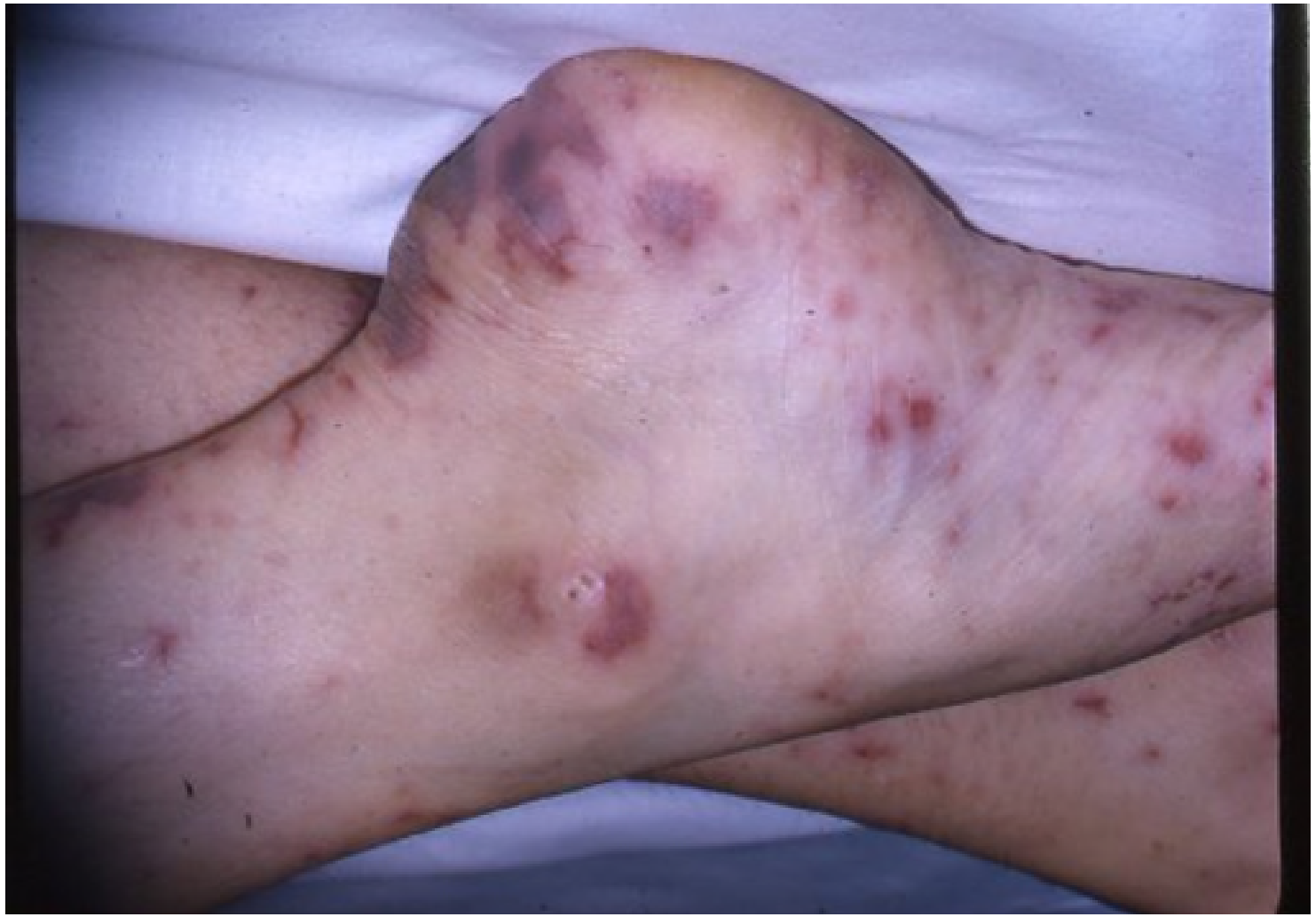
Become purpuric after 2-4 days

Rocky Mountain Spotted Fever

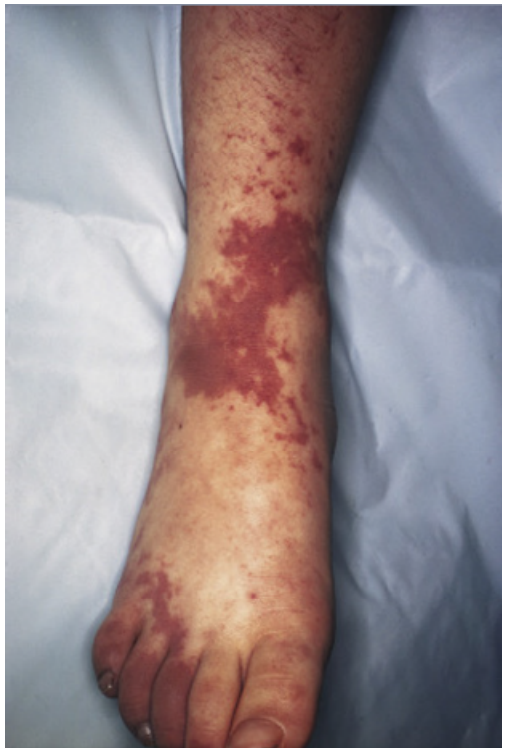


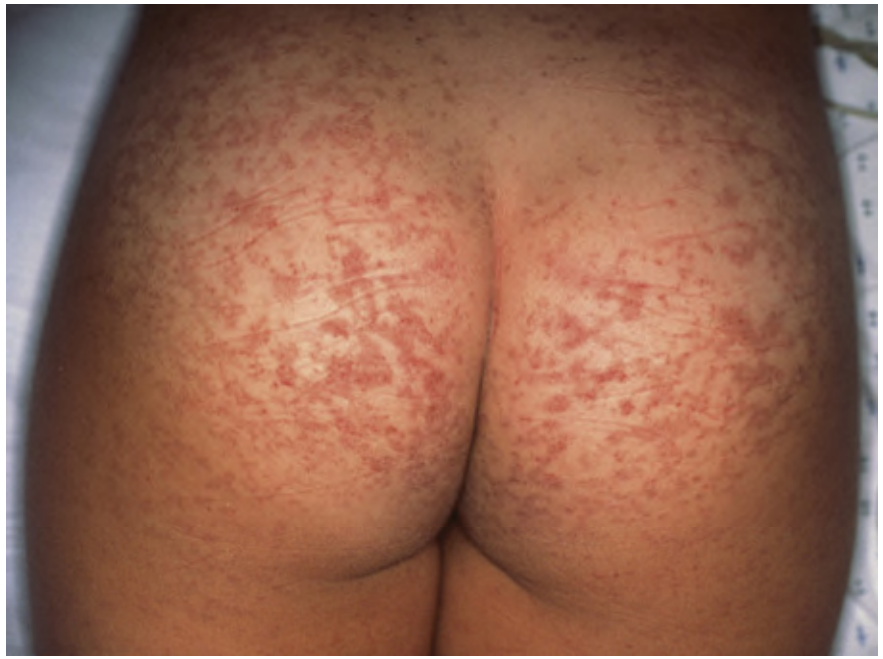
90% will eventually have rash ~ 5-6 days into illness

Rocky Mountain Spotted Fever



Rocky Mountain Spotted Fever

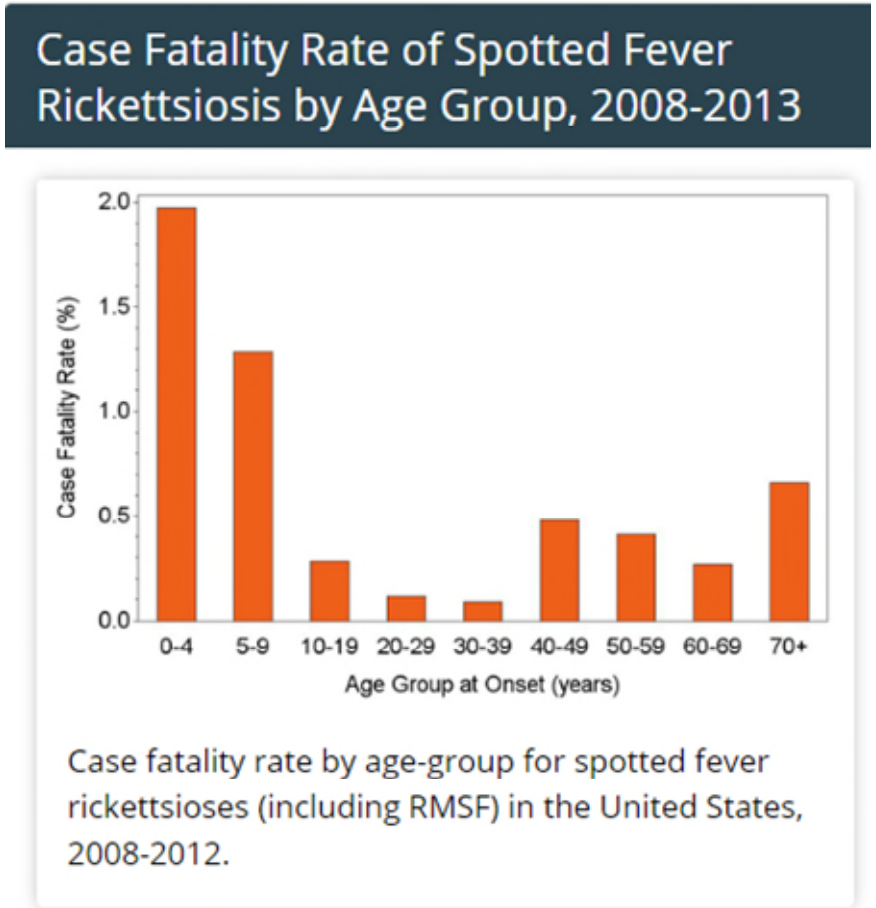




Rocky Mountain Spotted Fever

- Rickettsia rickettsii
- American dog tick *(Dermacentor variabilis)*
- Erythematous macules (50%) on ankles and wrists ~ 2-4 days after onset of fever/headache
  - Later (day 5-6), widespread purpuric macules (90%)
- Septic vasculitis: fever, headache, malaise, seizures, renal, pulmonary, hepatomegaly
- ~ higher mortality in very young and older patients
- Treatment: doxycycline

Rocky Mountain Spotted Fever



cdc.gov

Rocky Mountain Spotted Fever

Signs and Symptoms

- Rocky Mountain spotted fever, (RMSF) is the most severe rickettsiosis in the United States.
- **RMSF is a rapidly progressive disease and without early administration of doxycycline can be fatal within days.**
- Signs and symptoms of RMSF begin 3-12 days after the bite of an infected tick. However, because tick bites are not painful, many people do not remember being bitten.
- Illness generally begins with sudden onset of fever and headache and most people visit a healthcare provider during the first few days of symptoms.

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Early illness (days 1-4)

- Fever
- Headache
- Gastrointestinal symptoms (nausea, vomiting, anorexia)
- Abdominal pain (may mimic appendicitis or other causes of acute abdominal pain)
- Myalgia
- Rash (typically occurs 2-4 days after the onset of fever)
- Edema around the eyes and on the back of hands

Late illness (day 5 or later)

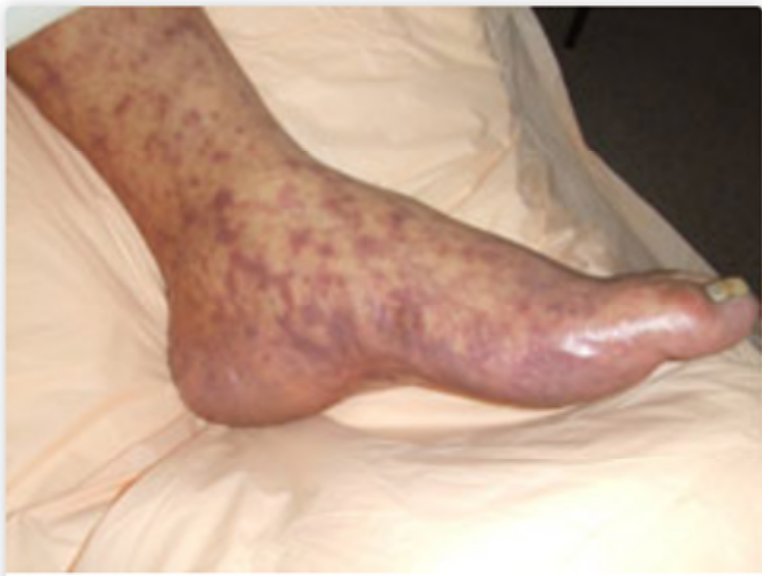
- Altered mental status, coma, cerebral edema
- Respiratory compromise (pulmonary edema, acute respiratory distress syndrome)
- Necrosis, often requiring amputation
- Multiorgan system damage (CNS, renal failure)

Risk factors for severe illness

- Delayed treatment
- Children < 10 years
- Persons with glucose-6-phosphate dehydrogenase (G6PD) deficiency

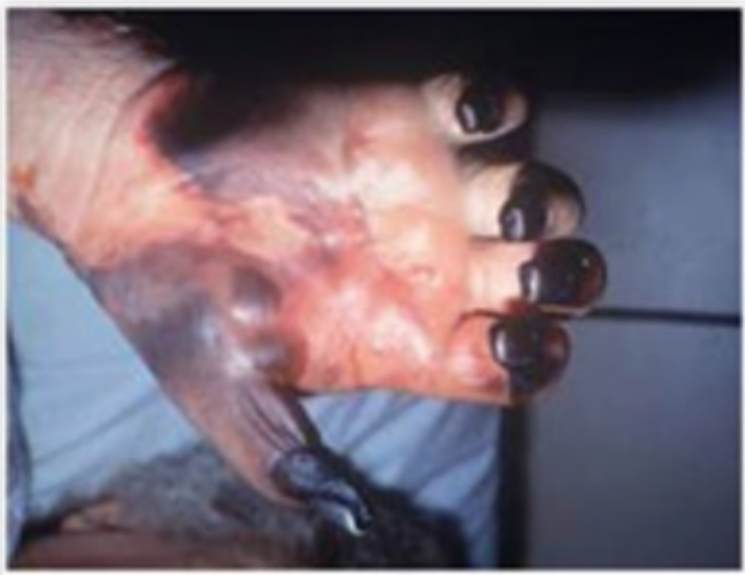
cdc.gov

Rocky Mountain Spotted Fever



Rocky Mountain Spotted Fever rash on foot

Rash can occur with RMSF, but may start later in illness. Never wait for a rash to begin doxycycline.



Digital necrosis in hand with untreated Rocky Mountain Spotted Fever

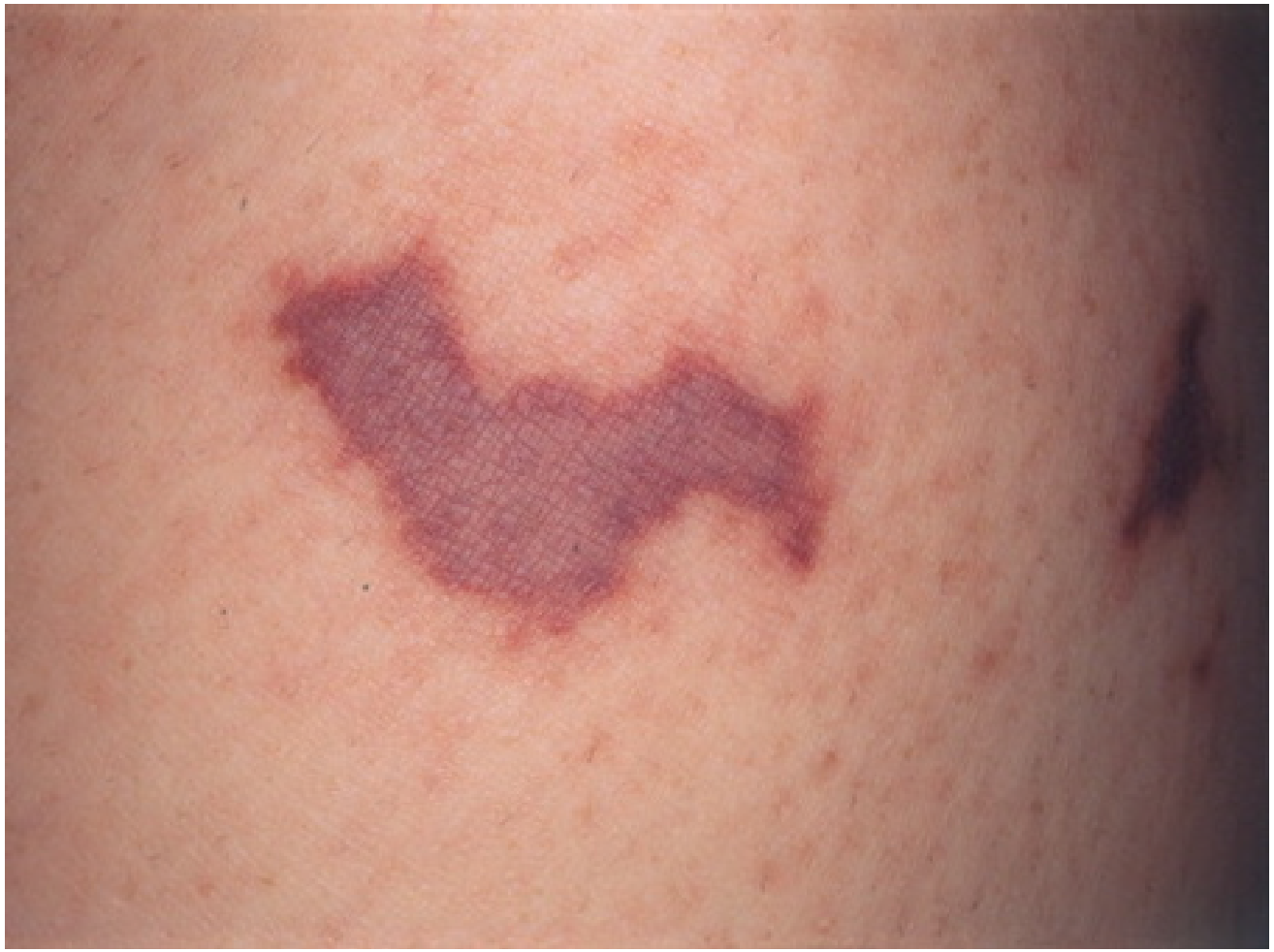
Digital necrosis may occur with untreated RMSF. Median time to death is only 8 days.

cdc.gov

Case – Purpura, Fever and Headache

A college student presented to the emergency room with fever, headache, nausea and vomiting. He was noted to have few pink papules and purple non-blanchable macules on his abdomen, arms and legs. He was sent home with the diagnosis of a viral infection with associated exanthem. He was brought back emergently the next evening with widespread purpura and hypotension. He died the next day.

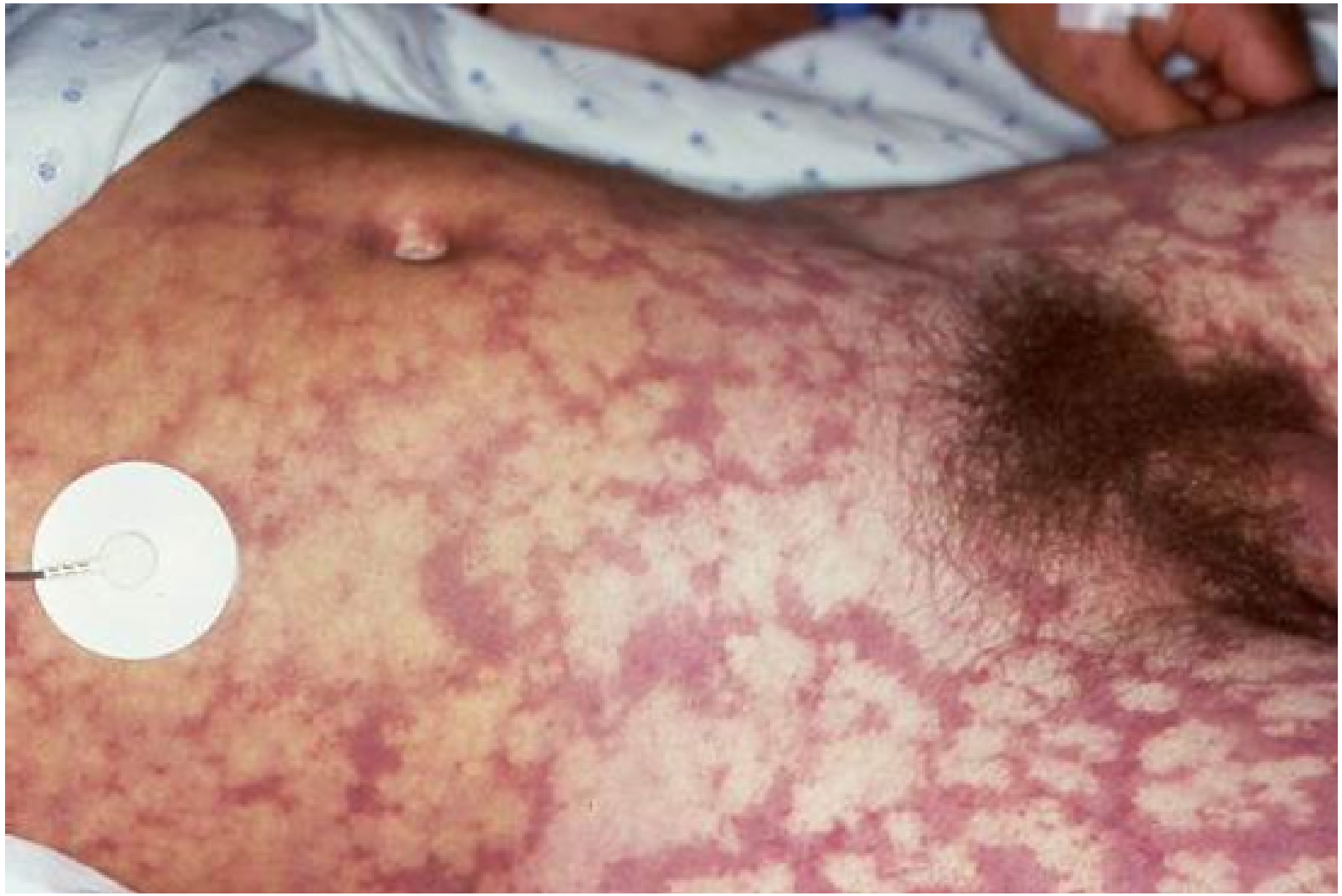
Acute Meningococcemia



Purpura with dusky Centers

Trunk
Lower extremities
Eyelids

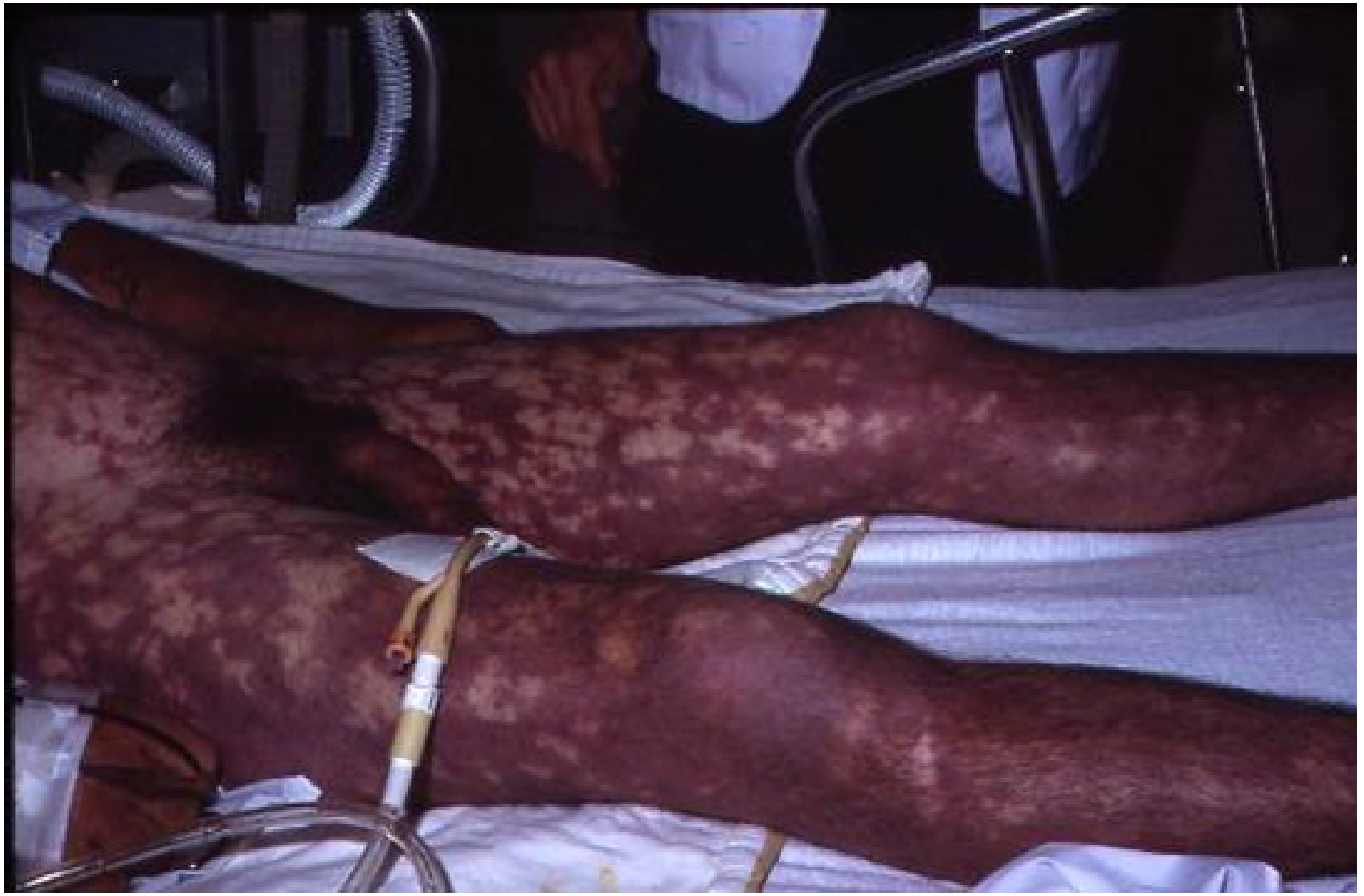
Acute Meningococcemia



Acute Meningococcemia

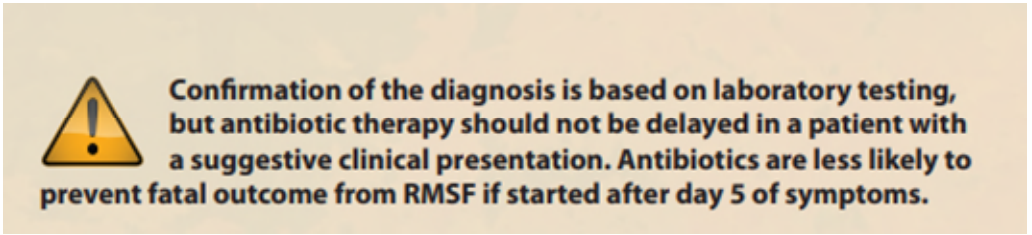
- Neisseria meningitidis (Gram neg. diplococcus)
- Respiratory transmission, 2-10 day incubation
- 50% - 66% develop a petechial eruption (trunk, lower ext., eyelids)
  - Later, large purpuric patches and ischemic necrosis
- Bacteremia, sepsis, septic vasculitis
  - Fever, meningitis, hypotension, pneumonia, arthritis, pericarditis, myocarditis, disseminated intravascular coagulation

Acute Meningococcemia



Inpatient Considerations – RMSF

- Purpura and Fever
  - Ddx includes: meningococcemia, vasculitis, viral hemorrhagic fevers, disseminated gonococcal infection…
- Treat early
- Look for acral rash, purpura
- Ask about and look for ticks
- Ask about history of hunting, camping, possible exposures etc.

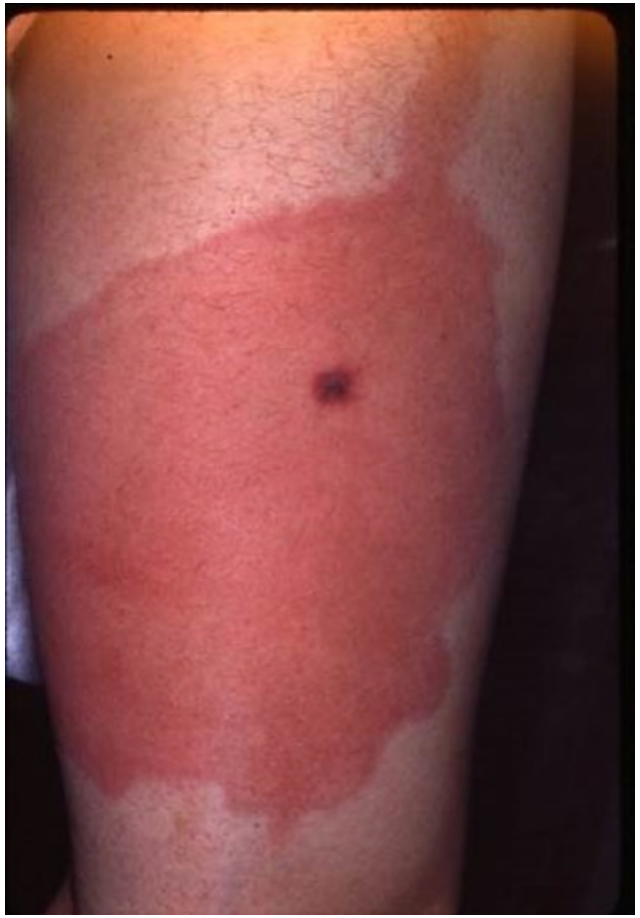


cdc.gov

Case

A young woman presented to the emergency room with a purple papule within a pink patch on her leg. She also complained of feeling sick with weakness and nausea. She was admitted to the hospital and found to be anemic and in acute renal failure. She does not remember being bitten, but found this in her sweat pants:

Case: Feels sick, with pink patch and spider

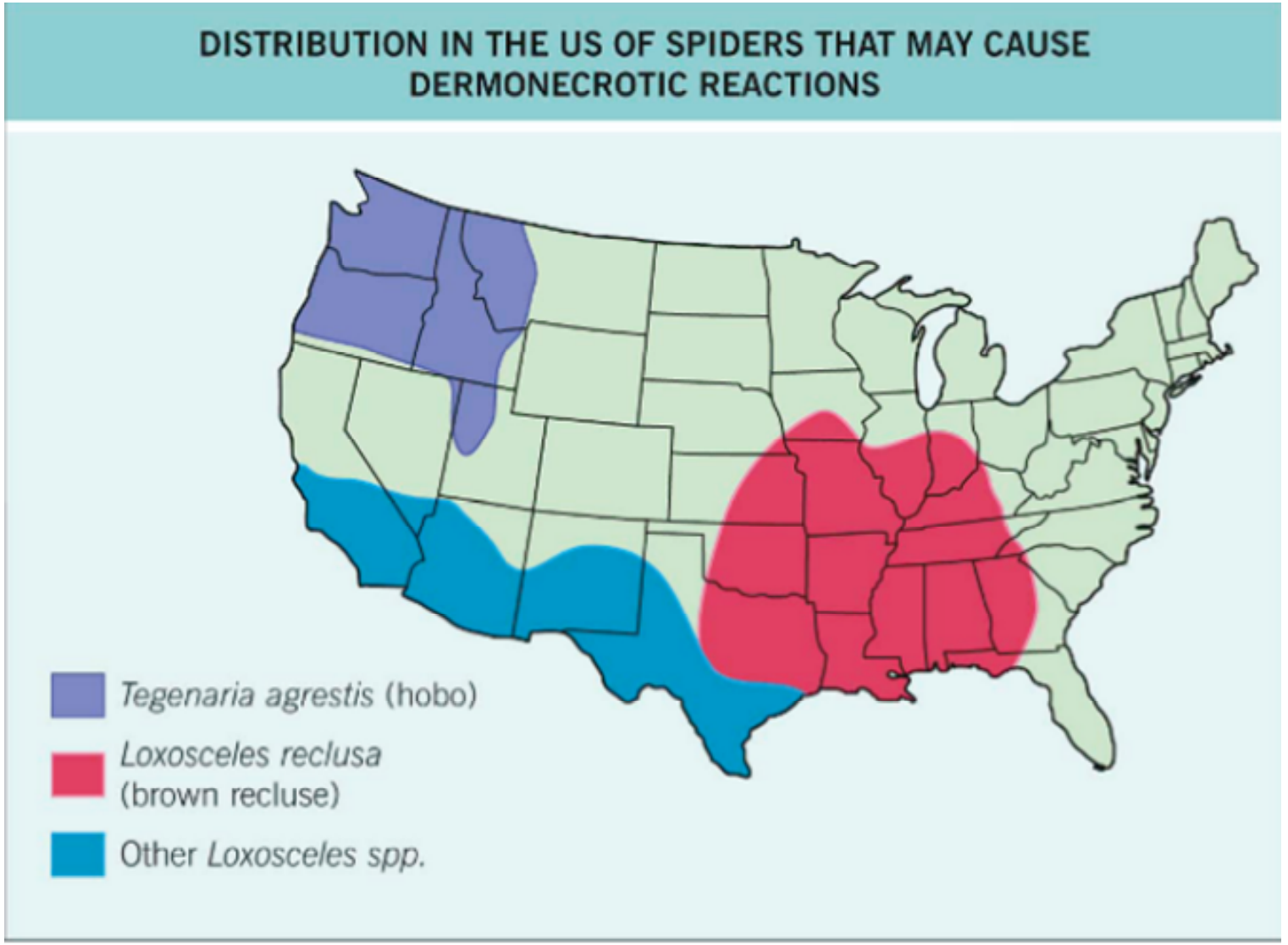


Choose the best answer:

A. She has systemic loxoscelism
B. She is having a hypersensitivity reaction to a wolf spider bite
C. Anemia is not likely associated with the spider bite
D. She should be sent for surgical consultation immediately

Brown Recluse Spider

Brown Recluse Spider



Best Pest Control

Lake of the Ozarks' Most Trusted Pest Control Company

5 Spiders Found at Lake of the Ozarks

October 08, 2015

At Best Pest Control, we've seen all kinds of spiders around the Lake of the Ozarks. Spiders have a knack for slipping into a home and staying hidden. There are several species of spider around the Lake, while most are harmless, some are dangerous and should only be left to pest control experts at Lake of the Ozarks. Let's take a look at some of the spiders found around the Lake area and learn more about them!

Photo Courtesy of Missouri Conservation: http://on.mo.gov/1LfZC90

Lakebestpestcontrol.com

Best Pest Control

When hatched, the new spiders will send silk into the air known as "ballooning" and float away to a new part of the garden.

Photo Courtesy of Missouri Conservation: on.mo.gov/1L4lUpC

3.Wolf Spider

Size: *up to 1 inch not including the legs*

Another spider that doesn't spin a web to catch it's prey! Wolf Spiders run down insects and other spiders at night, often darting through the grass or dirt. The bite of a Wolf Spider hurts, but is otherwise harmless. An interesting fact about wolf spider females is that they carry their young on their back. Once hatched, they stay with mom for weeks until the spiderlings are ready to go off on their own.

Photo Courtesy of Missouri Conservation: on.mo.gov/1RsjRBh

4. Brown Recluse

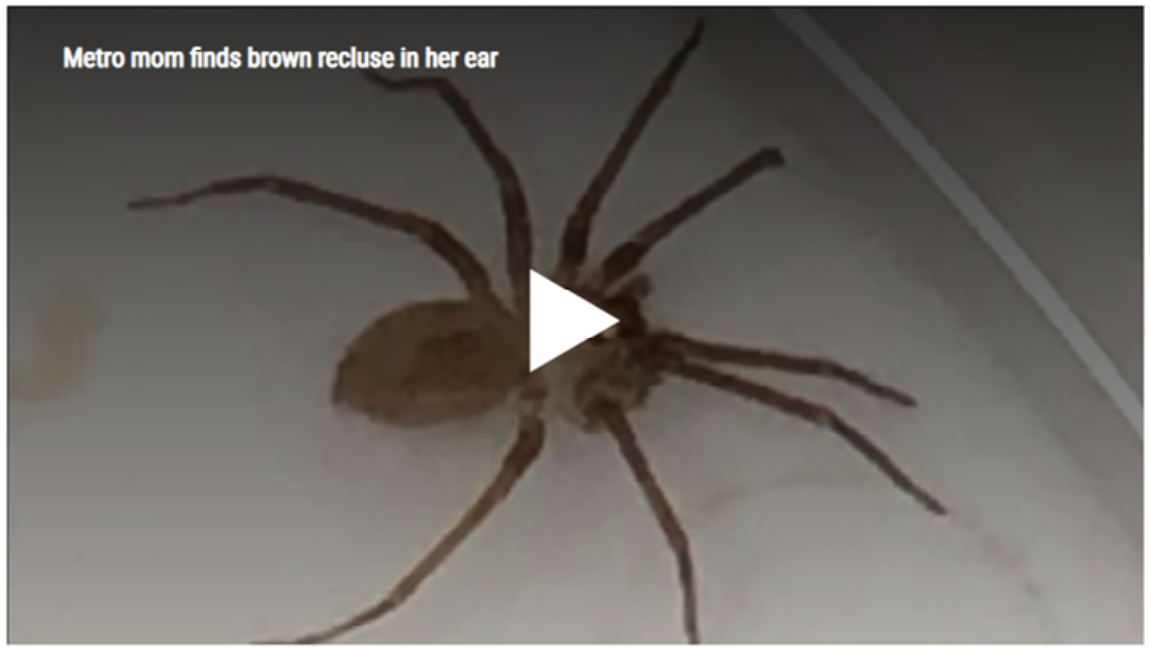
Size: *1/4 inch not including legs*

Finally, a spider worth staying away from! The Brown Recluse is commonly found in homes across Missouri, and they love to hide in storage, rarely used drawers, and basements/attics. They tend to avoid human contact, (hence the recluse title) but due to how often we are cohabitants, bites do happen. They are almost never fatal but the venom is dangerous to humans and animals. If you are bitten by a Brown Recluse, seek medical attention immediately.

5. Black Widow

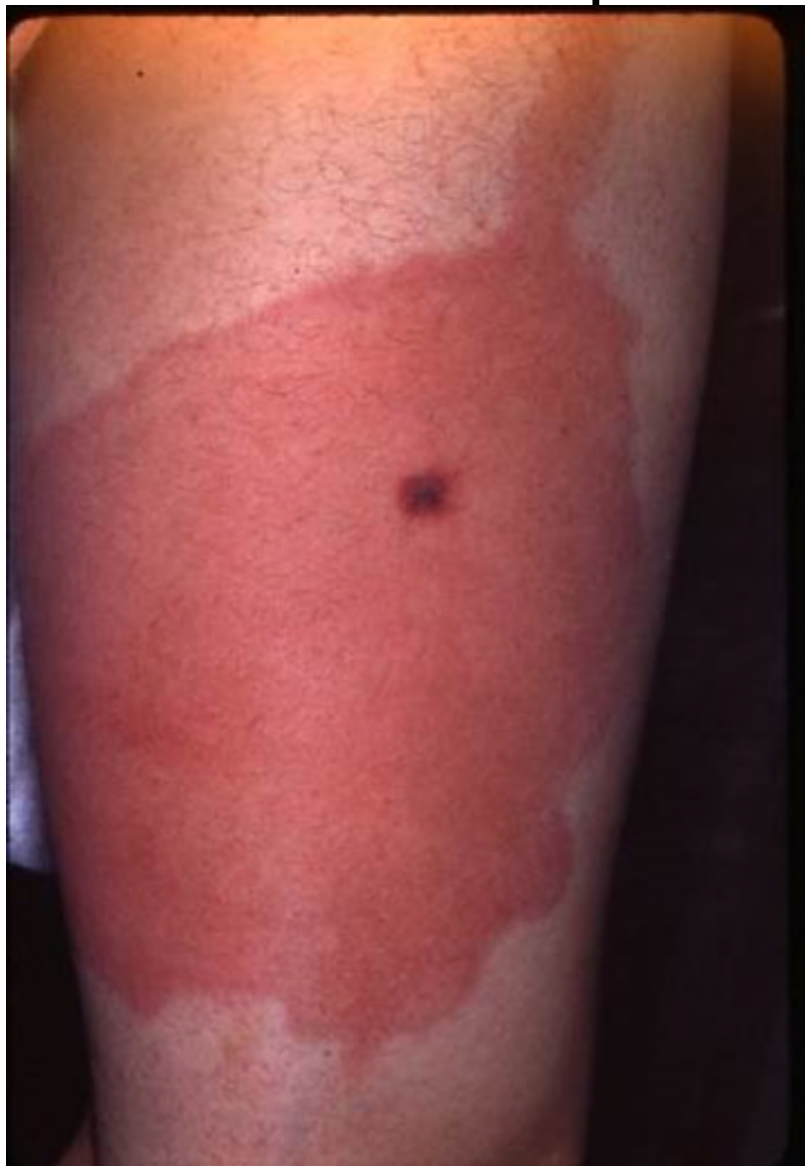
‘Water’ in Northland woman’s ear turns out to be brown recluse spider

POSTED 11:10 PM, AUGUST 22, 2019, BY JONATHAN MCCALL, *UPDATED AT 06:37AM, AUGUST 23, 2019*



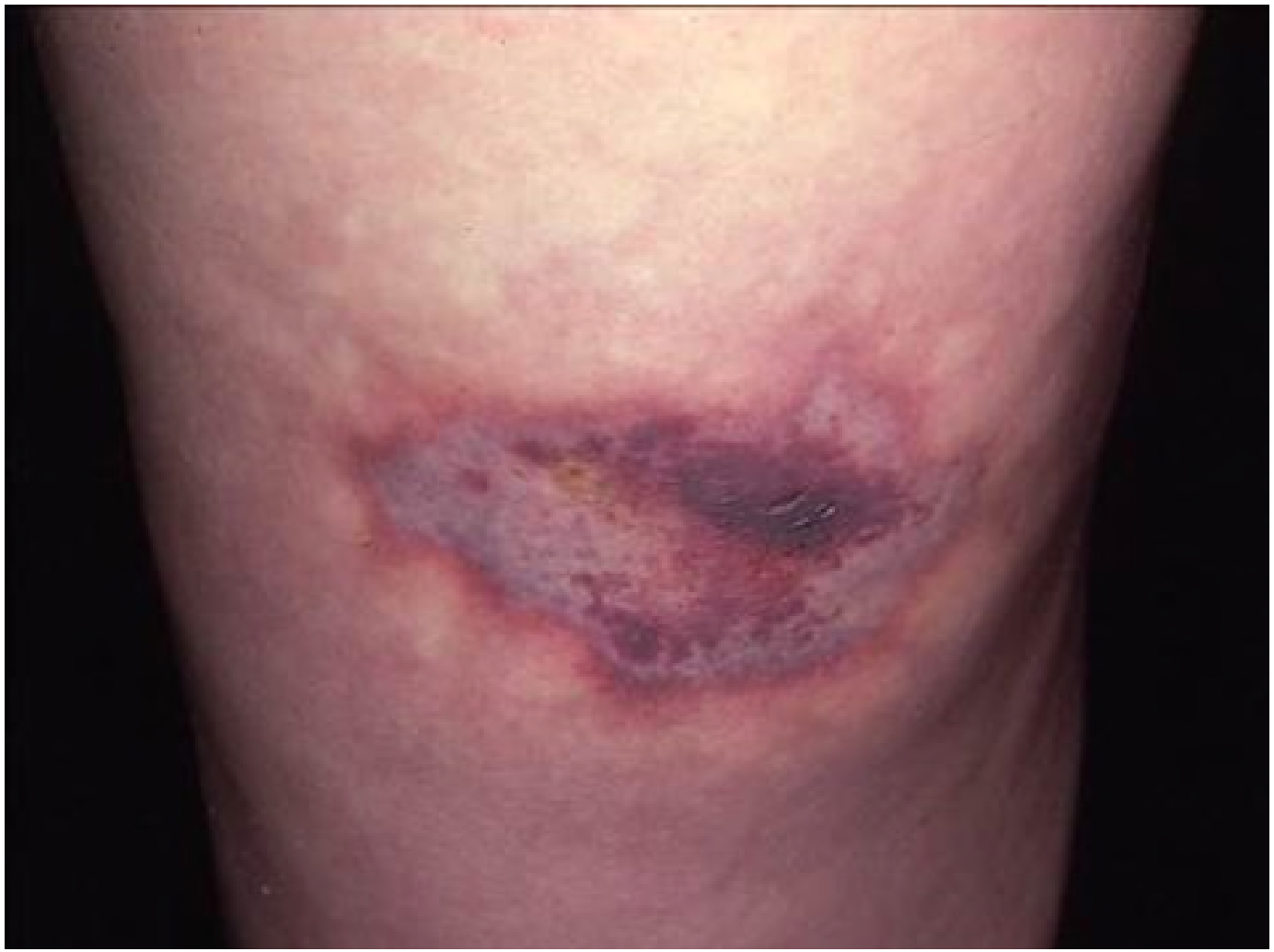
KANSAS CITY, Mo. -- A not so itsy, bitsy spider not found on a waterspout. Instead, doctors removed a brown recluse spider from the ear of Susie Torres.

Brown Recluse Spider Bite



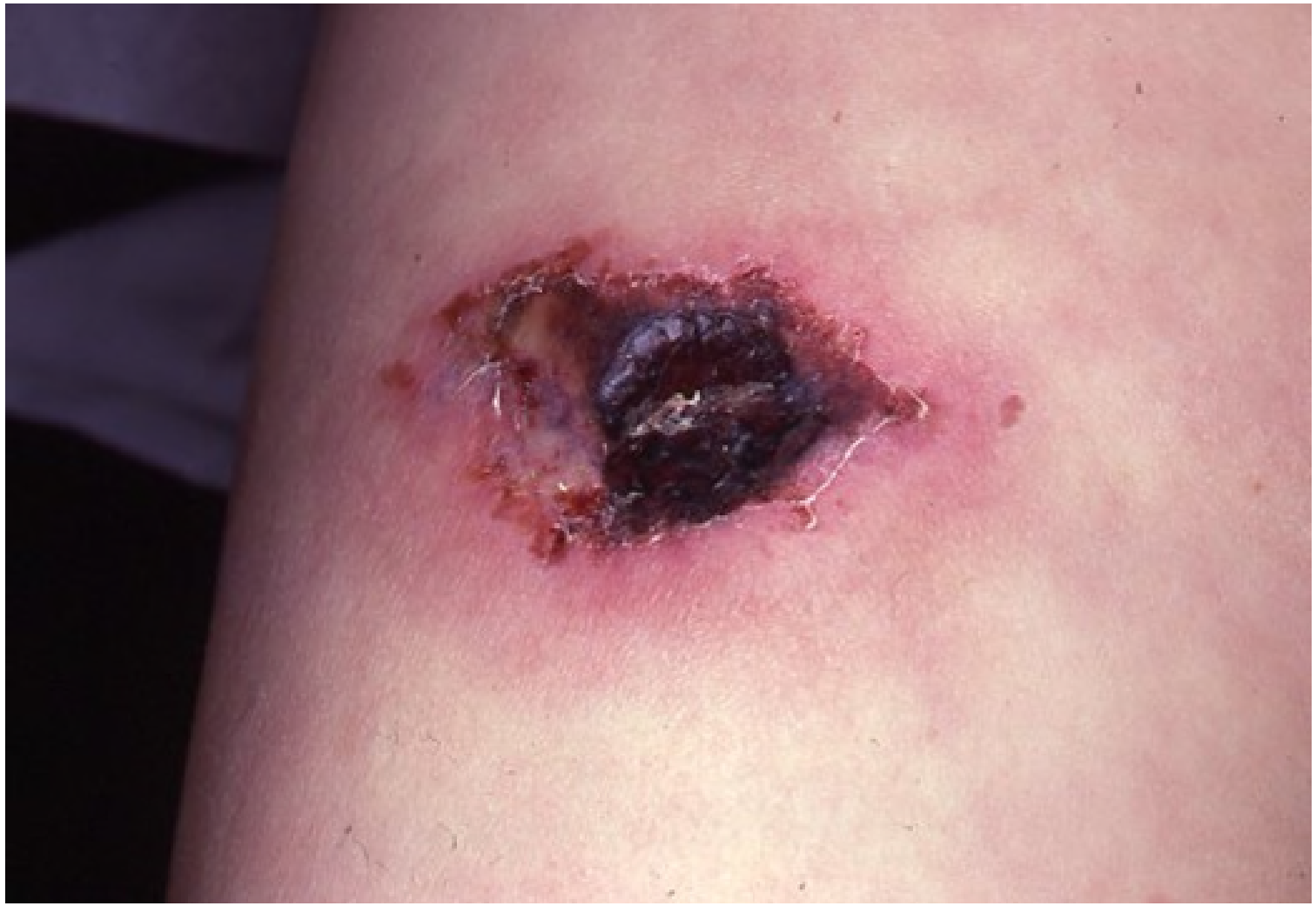
Painless bite, then a purple papule with surrounding erythema 6-12 hours later.

Brown Recluse Spider Bite



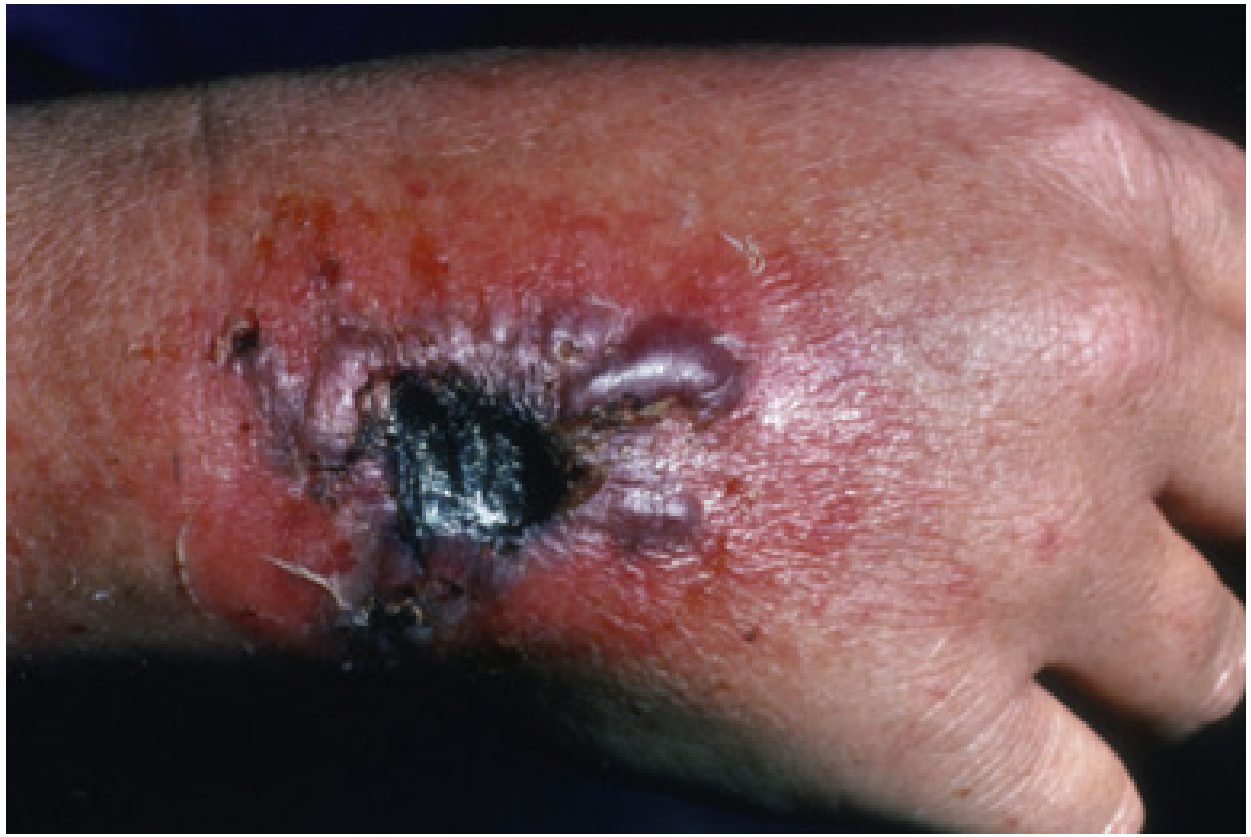
Grey-purple discoloration by 48-72 hrs. portends…

Brown Recluse Spider Bite

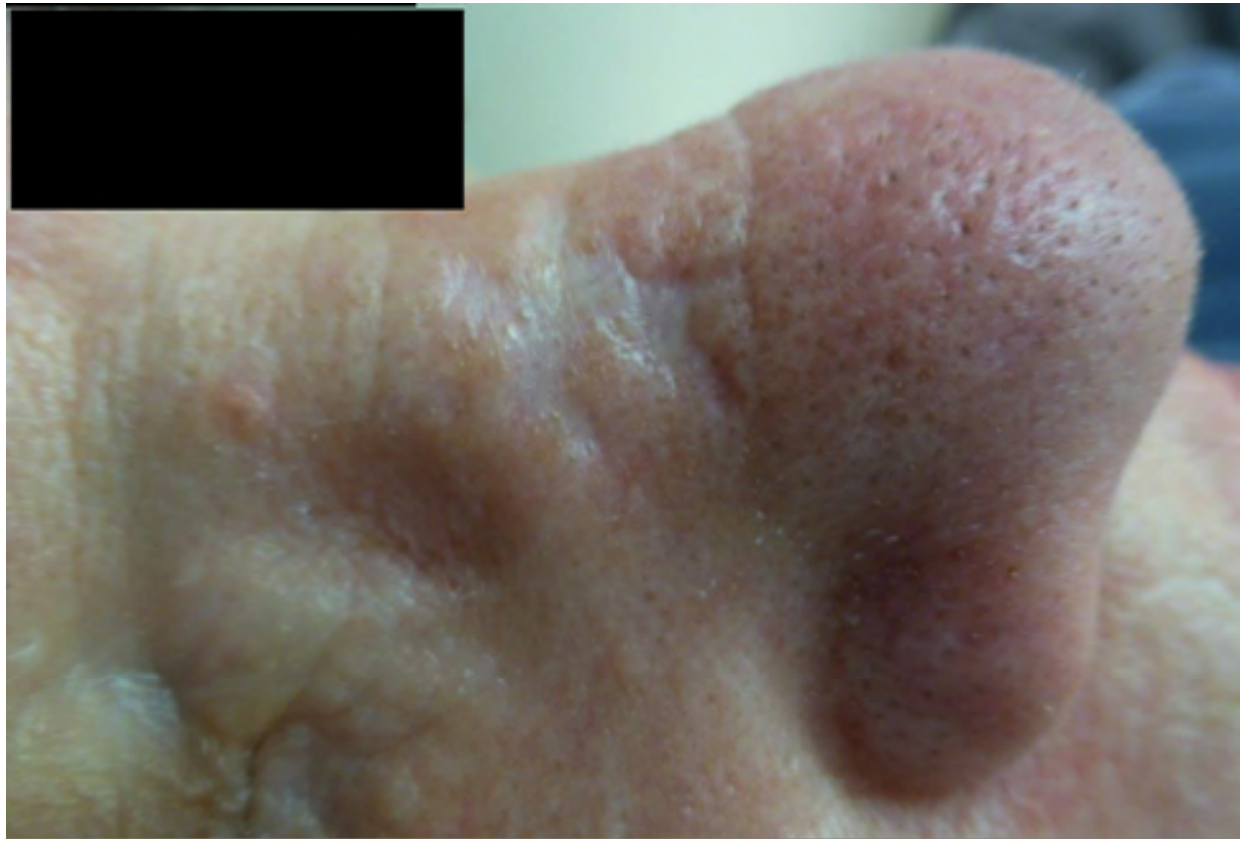


Ulceration Usually ~ day 7 post-bite.

Brown Recluse Spider Bite



Scar From Brown Recluse Spider



Brown Recluse Spider Bite

- Loxosceles reclusa
- Fiddleback spider
- Closets, attics, under sheets, folded clothing
- Sphingomyelinase D
  - Aggregates platelets, generates leukocyte chemoattractants, causes erythrocyte lysis
- Full thickness skin necrosis (ulceration) is the most common serious reaction

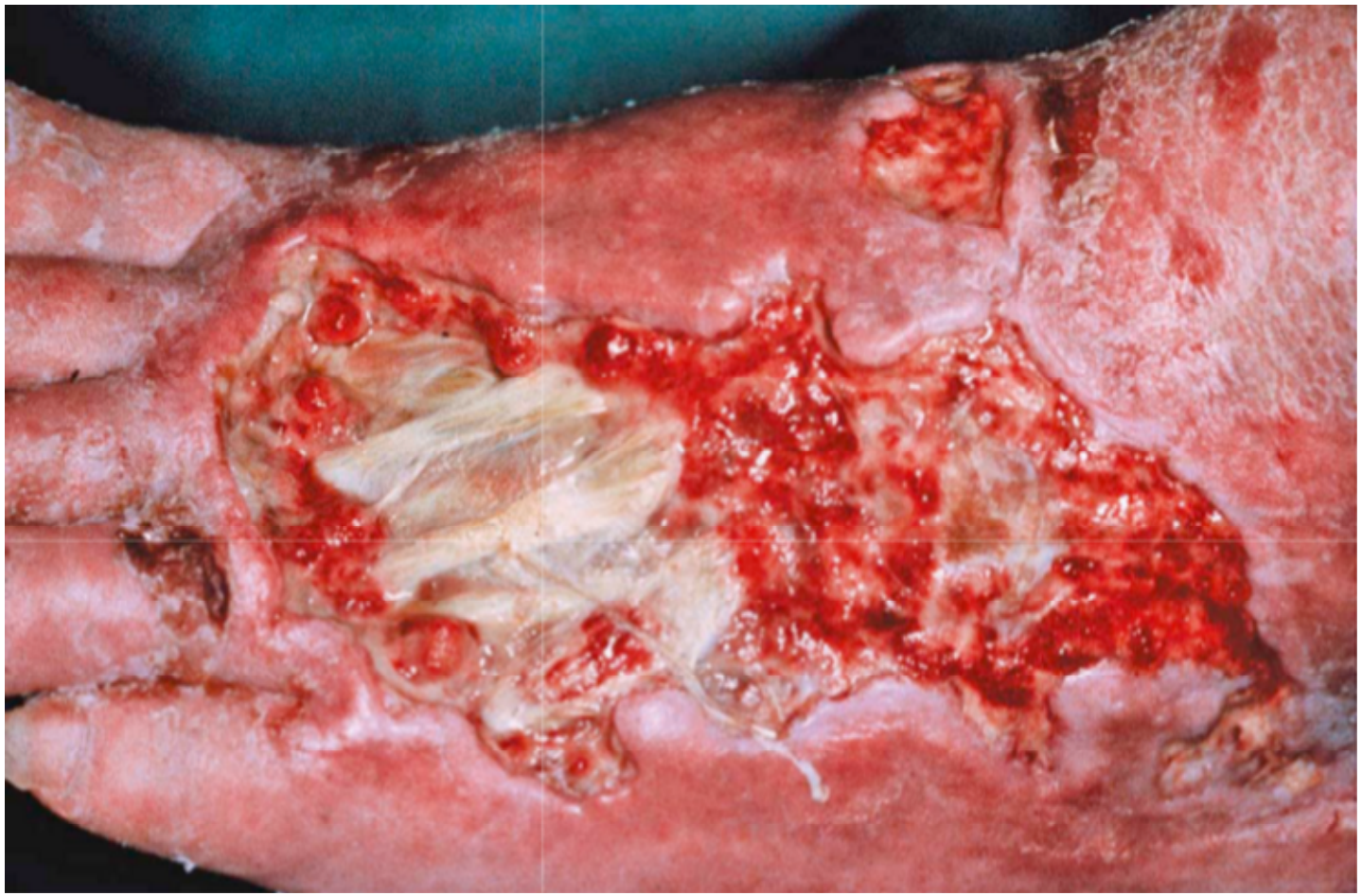
Brown Recluse Spider Bite

- Rarely causes a systemic reaction
  - Morbilliform rash, fever, chills, malaise
  - Arthralgias, headache, nausea and vomiting
  - Acute DIC
  - Hemolytic anemia → hemoglobinuria → renal failure
  - Usually appears in first 48 hours after bite
- Necrotic bites are frequently secondarily infected
- The majority of bites are clinically inconsequential

Brown Recluse Spider Bite

- Treatment is mostly supportive
- Rest, ice, elevation
- Aspirin
- Tetanus prophylaxis
- Antibiotics for infected wounds
- Corticosteroid for systemic reaction
- No immediate surgical intervention

Necrotic Loxoscelism?



NOT RECLUSE

Numerous conditions have been mistaken for a necrotic recluse spider bite (table 2). The most common disorders in the differential diagnosis are presented in this section (table 3).

The following mnemonic (NOT RECLUSE) may assist in differentiating brown recluse spider bites from other skin lesions [34]:

- N – Numerous (recluse bites are typically a single focal lesion)
- O – Occurrence (recluse bites typically occur in secluded locations in the home such as attic space, garage, or closet rather than outside)
- T – Timing (lesions appearing from November to March are much less likely to be caused by recluse spider bites)
- R – Red center (recluse bites typically have a pale center)
- E – Elevated (recluse bites are flat or sunken)
- C – Chronic (lesions presenting longer than several weeks are unlikely to be recluse spider bites)
- L – Large (lesions >10 cm are uncommon after a recluse spider bite)
- U – Ulcerates too early (<7 days) suggests infection or pyoderma gangrenosum rather than a recluse spider bite
- S – Swollen (except for bites to the face or feet, significant swelling is not typical for recluse spider bites)
- E – Exudative (other than bites on eyelids or toes, recluse spider bites are not moist or exudative; frank pus suggests infection)

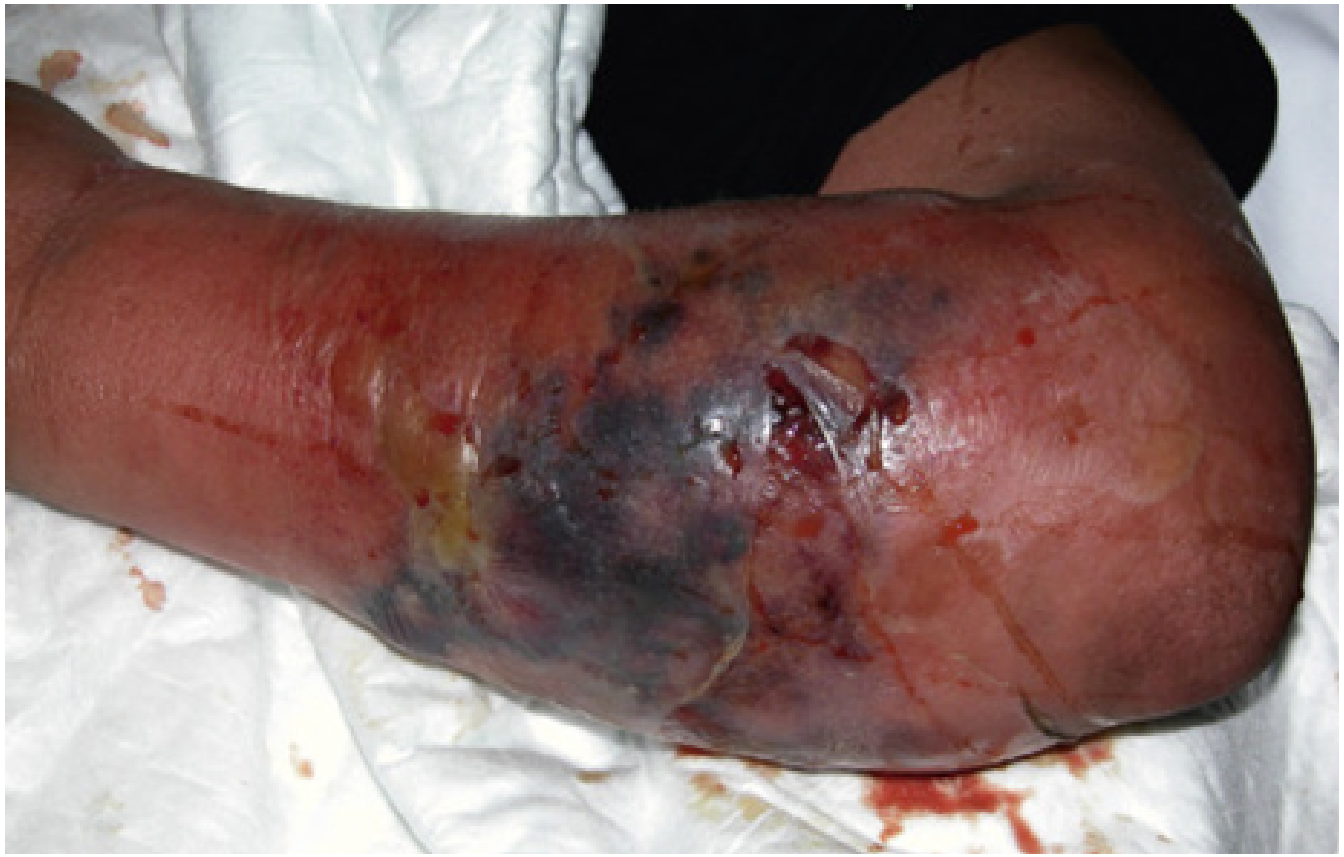
PubMed
NOT RECLUSE-A Mnemonic Device to Avoid False Diagnoses of Brown Recluse Spider Bites.
Stoecker WV, Vetter RS, Dyer JA
JAMA Dermatol. 2017 Feb;

SpiderTek, Rolla, Missouri2Department of Dermatology, University of Missouri Health Sciences Center, Columbia.
28199453

Case

- After a recent fishing trip
- Red, hot, swollen arm/hand
- By 36 hours greyish/black
- Large
- Initially extremely painful
- Then, anesthetic

Case



Necrotizing Fasciitis

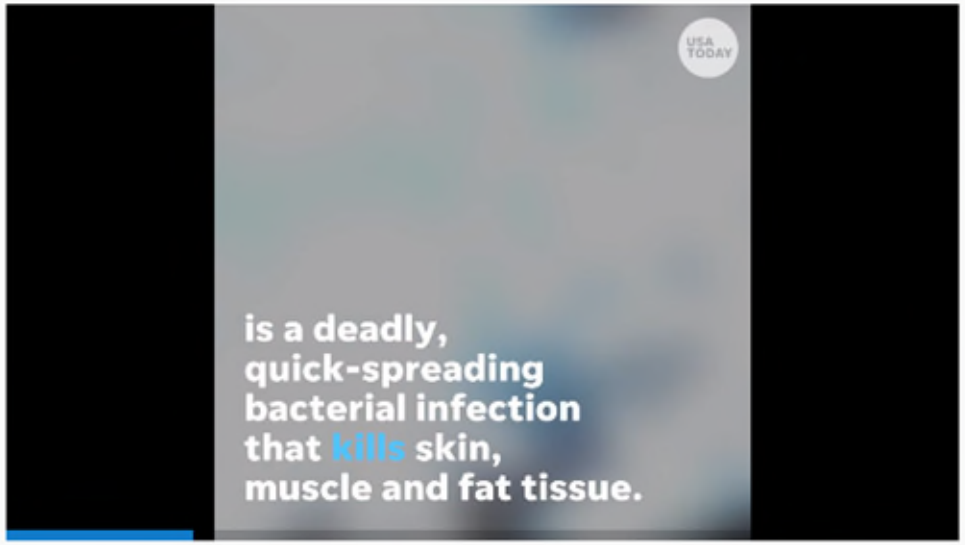
- Risk factors
  - Diabetes mellitus
  - Coronary artery disease
  - Peripheral vascular disease
  - Immunosuppression
- Trauma, (no trauma), iv drug use, surgery, varicella, decubitus ulcers
- Group A Strep., polymicrobial
- 20-60% mortality
- Debridement, IV antibiotics

“Black blisters …”

“…prick from fishing hook…”

Minor cut leads to flesh-eating infection on Florida man's hand. Black blisters were sign something was very wrong

Ashley May, USA TODAY Published 8:49 a.m. ET April 26, 2019 | Updated 1:44 p.m. ET April 28, 2019



Learn the signs and treatment of the rare disease "necrotizing fasciitis." USA TODAY

CONNECT TWEET LINKEDIN COMMENT EMAIL MORE

A Florida man said he is lucky to be alive after a minor prick from a fishing hook led to a life-threatening, flesh-eating bacterial infection.

ABC Action News
@abcactionnews

Follow

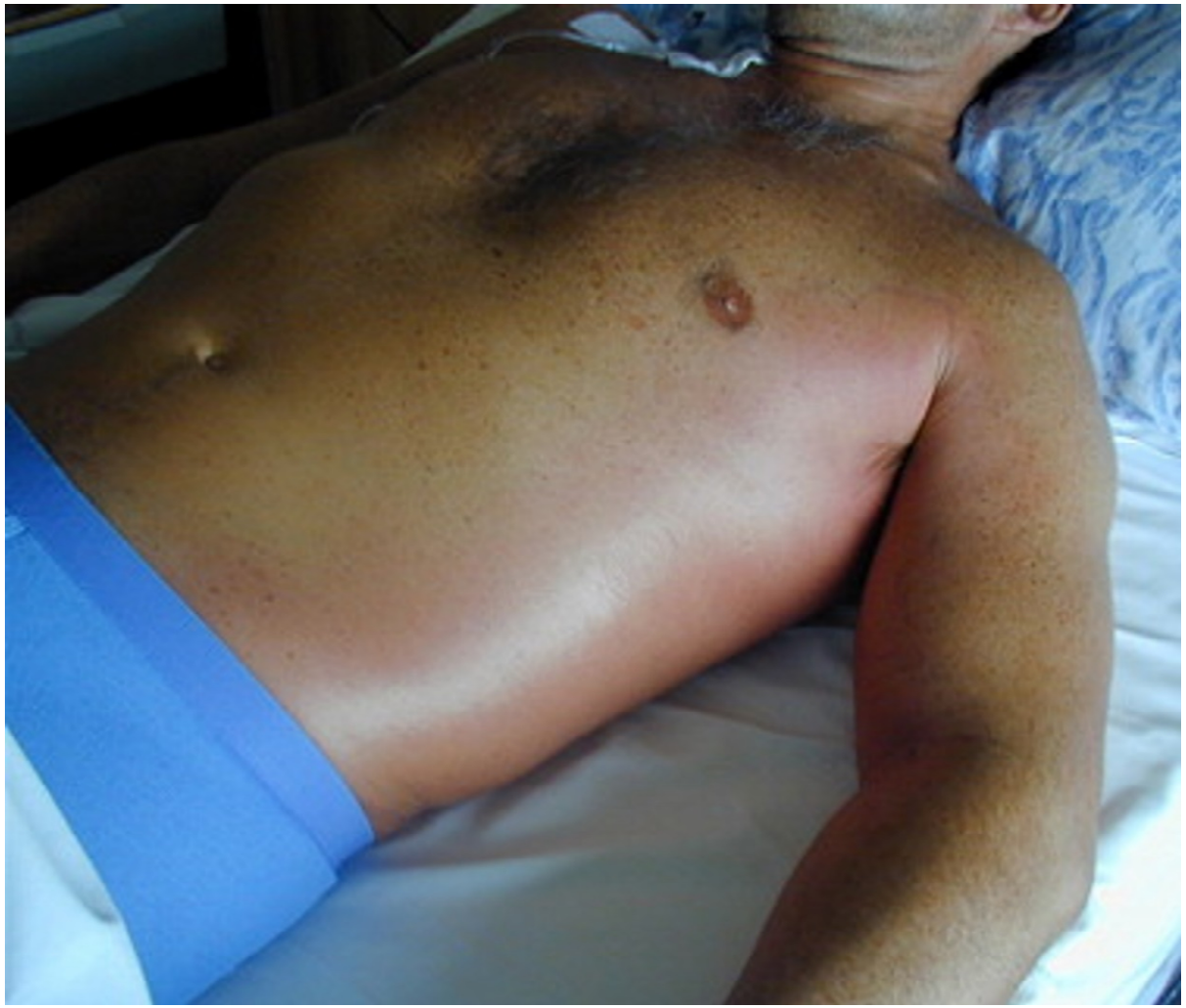
Flesh-eating bacteria infects Florida man fishing off coast of Palm Harbor in Gulf of Mexico; @NicoleSGrigg shares his story >> bit.ly/2VilZXP

11:32 AM - 24 Apr 2019

4 Retweets **5** Likes

1 4 5

Necrotizing Fasciitis

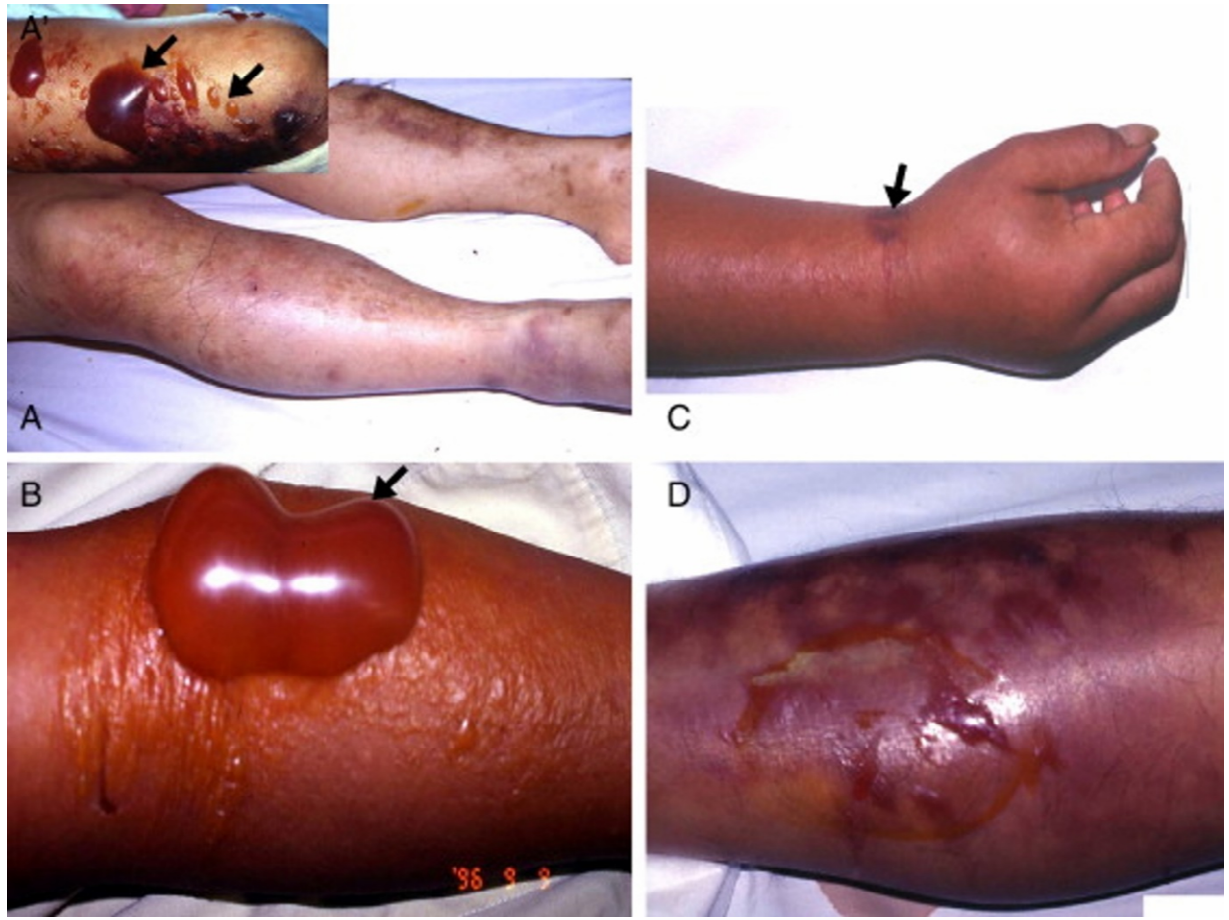


Red, swollen
Hot, painful
Tender
Then anesthetic

Does not respond to po antibiotics

Grey, black, blistering by 36 hours

Sick/Toxic



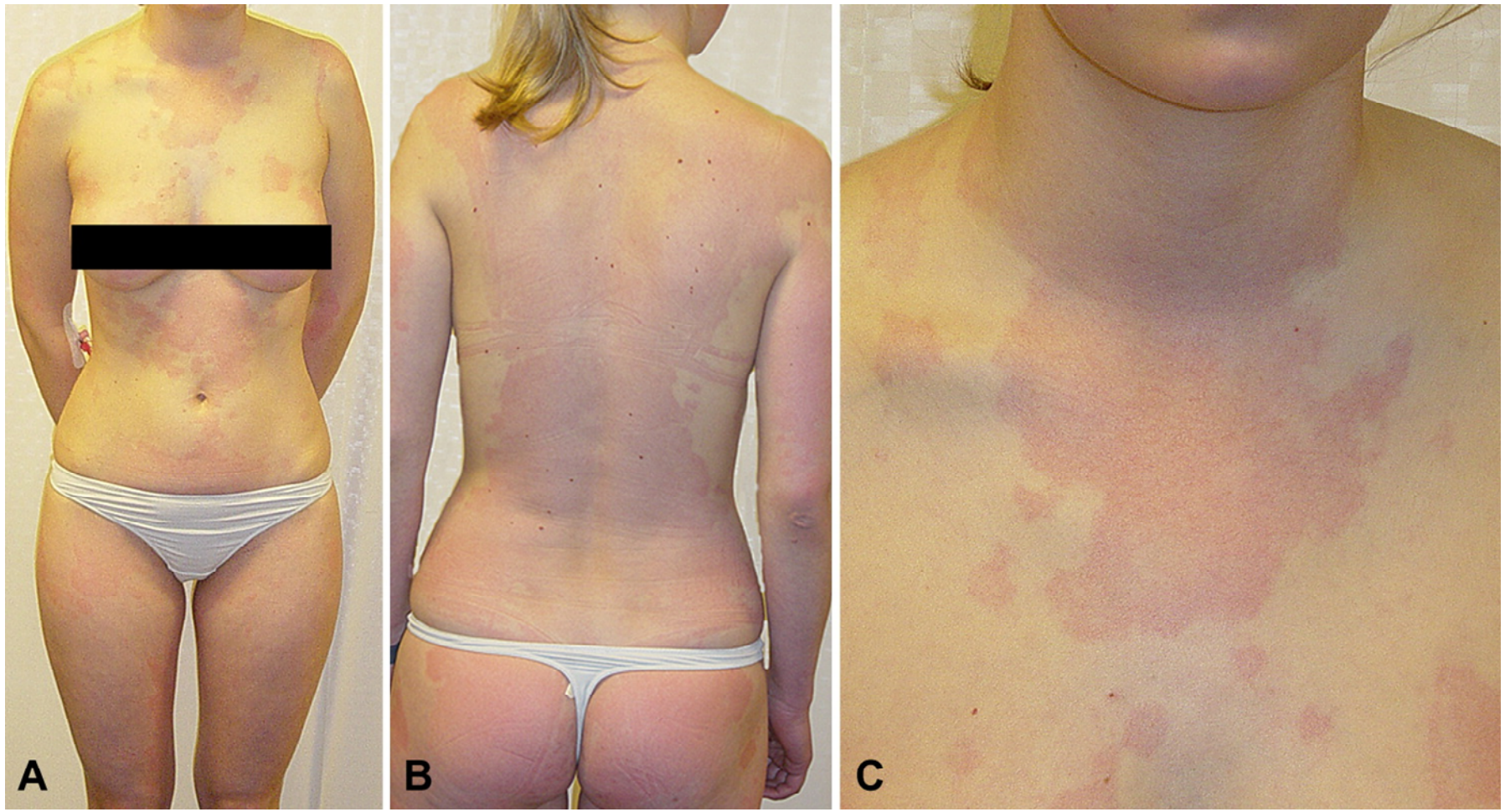
Not a spider bite

Necrotizing soft tissue infections

Skin lesions of 4 patients with liver cirrhosis and necrotizing fasciitis. - (A) Compartment syndrome of the right lower leg was the initial presentation of Aeromonas hydrophila necrotizing fasciitis. Multiple bullae (arrows) developed within 12 hours (A'). (B) Necrotizing fasciitis caused by Klebsiella pneumoniae in the right forearm, with huge bulla (arrow). (C) The patient was cut by a fishing net (arrow) and developed Vibrio vulnificus necrotizing fasciitis in the left forearm. (D) Streptococcus pyogenes necrotizing fasciitis involving the left lower leg.

From Lee CC et al: Necrotizing fasciitis in patients with liver cirrhosis: predominance of monomicrobial Gram-negative bacillary infections. Diagn Micr Infec Dis. 62(2):219-25, 2008, Figure 1.

Case



Case

This patient ate at the restaurant with 2 unrelated colleagues. They all ate the same meal and within 30 minutes they each developed flushing and generalized pruritus. They also complained of a tingling sensation of the lips and throat, headache, and nausea. They have no known food allergies.

Case

Windrose
MARKER 26
LAKESIDE DINING

Appetizers

Soup du Jour House made seasonal soup 8

Portabella Raviolis Ricotta cheese, red pepper coulis, brown butter, local greens 11

Coriander Crusted Tuna Radish, frisee, micro cilantro, blood orange, soy vinaigrette 16

Mussels Marinieres Garlic, lemon, duck fat, white wine, parsley, baguette 16

Scallops Saint - Jacques Onion gravy, champagne, tarragon 15

Maryland Crab Cakes Cajun remoulade, jalapeno jelly 15

Shrimp & Grits Candied tomato, chorizo, Creole sauce, grit cake 13

Salads

Mushroom & Bacon Salad Roasted Shiitake, goat cheese, dried cranberries, local greens, bacon & apple vinaigrette 12

Grilled Romaine Salad Tomato, parmesan, anchovy, hearts of Romaine, Caesar dressing 10

Duck Confit Salad Cured egg yolk, red onion, pear, local greens, blood orange & soy vinaigrette 9

Waldorf Salad Grape, apple, celery, candied pecan, iceberg wedge, champagne vinaigrette 11

Main

14oz Ribeye Mashed potatoes, seasonal vegetables, demi glace 38

8oz Filet Mignon Mashed potatoes, seasonal vegetables, demi glace 38

Duck a L'Orange Carrot, fingerling potatoes, blood orange 30

Roasted Lamb Polenta cake, pearl onion, demi glace, herb salad 42

Chicken Au Vin Mashed potatoes, Shiitake mushroom, carrot, red wine, brandy 26

Question: Which Is The Most Likely Culprit?

A. Portabella mushroom
B. Tuna
C. Chicken
D. Grits

Scombroid Poisoning

- Tuna,
  - Mahi mahi, bonito, mackerel…
- Bacterial histidine decarboxylase turns fish histidine into histamine
- Elevated histamine in fish and patient
  - Allergy testing is negative, tryptase is negative
- Fish histamine levels > 50mg / 100g fish are potentially toxic
- Cooking does not prevent the reaction

Scombroid Poisoning

- “Sharp”, “metallic”, “peppery” taste to fish
- Onset 2 minutes to 2 hours after eating
- Flushing, urticaria, generalized pruritus
- Headache, dizziness
- Burning/tingling mouth, lips
- Nausea, abdominal pain, diarrhea
- Respiratory distress in severe cases
- Lasts 8-12 hours
- Treat with antihistamines

Differential Diagnosis of Scombroid Poisoning

Scombroid fish poisoning	Fish allergy	Bacterial food poisoning
Nonimmunologic	Type I allergy	Nonimmunologic
Any age	Peak incidence in adulthood	Any age
Predominantly erythema	Wheal and flare reaction	Predominantly gi symptoms
Type I allergy tests negative	Type I allergy tests positive	Type I allergy tests negative
Bacterial fish contamination	No bacterial contamination	Bacterial fish contamination
Dark-fleshed fish	Mostly codfish (parvalbumin)	Any fish
Histamine levels in fish elevated	Histamine levels in fish normal	Histamine levels in fish normal

Whole Foods Market Recalls Tuna Due to Scombroid Food Poisoning

POSTED BY FOOD POISONING ATTORNEY ON APRIL 05, 2010

Whole Foods Market announced the recall of its Whole Catch Yellow fin Tuna Steaks (frozen) with a best by date of Dec 5th, 2010 because of possible elevated levels of histamine that may result in symptoms that generally appear within minutes to an hour after eating the affected fish.

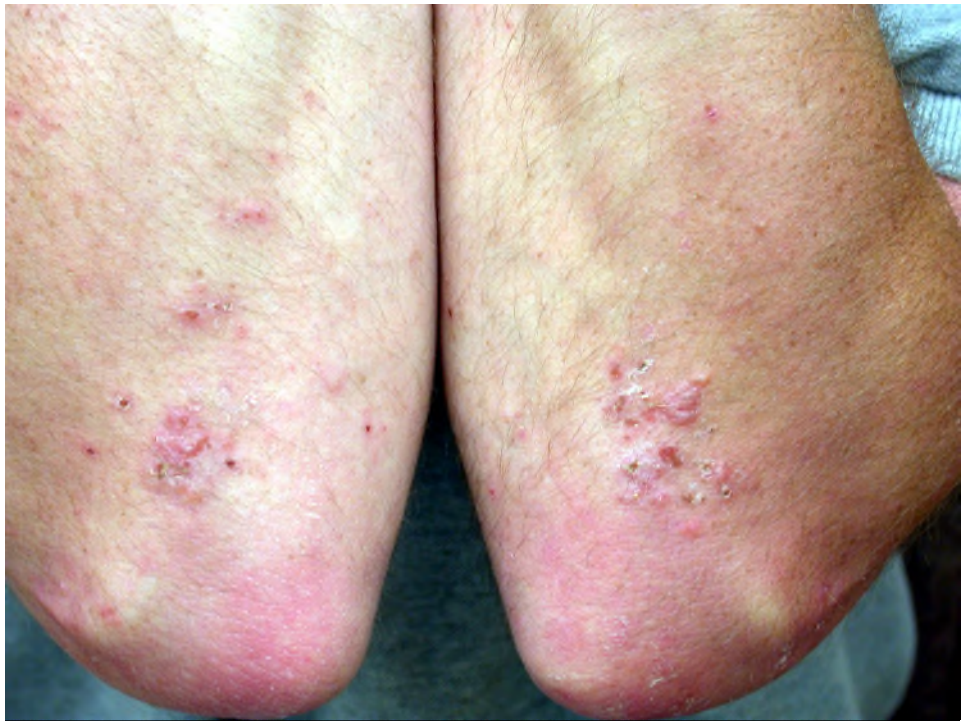
The product, sold in twelve ounce bags with Best by Date: exp 05 DEC 2010 with Lot Code: 4853309157A and displays the following UPC code: 0-99482-42078-9 Whole Catch Yellow fin Tuna Steaks (Frozen) 12 oz.

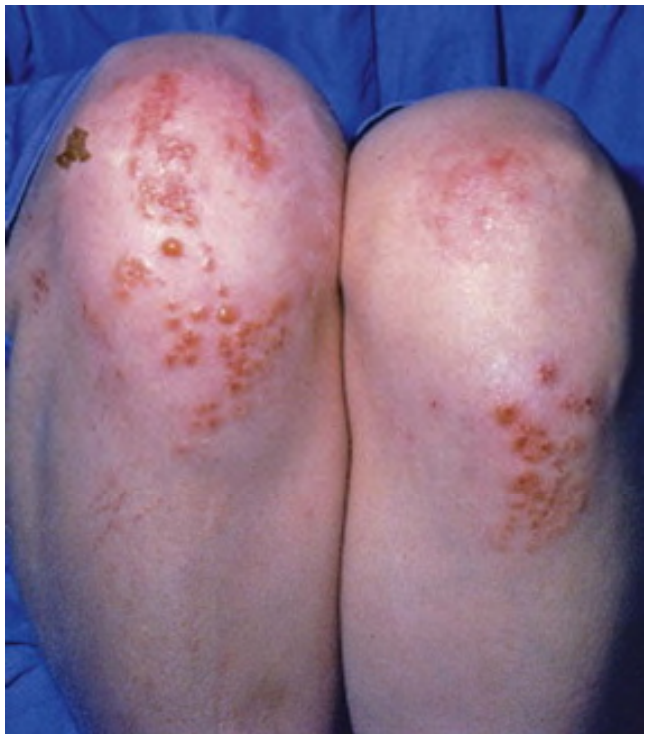
High levels of histamine can produce an allergic reaction called scombroid poisoning when the fish is consumed. The following are the most common symptoms of scombroid poisoning: tingling or burning sensation in the mouth, facial swelling, rash, hives and itchy skin, nausea, vomiting or diarrhea. Scombroid food poisoning is a foodborne illness that results from eating spoiled (decayed) fish.

There have been two reported incidents by consumers. Product was distributed to 28 states plus the District of Columbia including Texas, Oklahoma, Louisiana, Illinois, Indiana, Kansas, Ohio, Wisconsin, Minnesota, Missouri, Michigan, Maryland, Virginia, Pennsylvania, Florida, Alabama, Georgia, Kentucky, South Carolina, Tennessee, North Carolina, Connecticut, Nebraska, New Jersey, New York, Maryland, Rhode Island, Maine and Washington, D.C.

RELATED POSTS

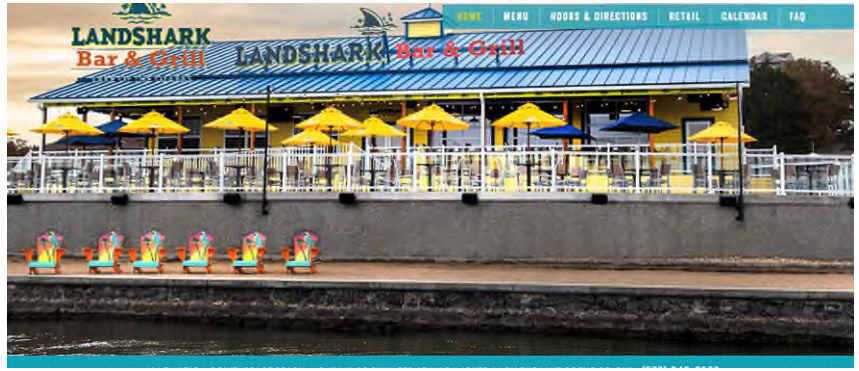
Case





Case

A few hours after eating at the other resort restaurant, this patient noted some mild abdominal discomfort, bloating and flatulence. He later developed intensely pruritic papules and vesicles on the elbows, knees and low back.



SANDWICHES

Served with lattice chips. Substitute French fries, House or Caesar side salad for an additional cost.

FISH SANDWICH

Fresh catch grilled or blackened. Served on a toasted bun with lettuce, tomato and jalapeño tartar sauce

ROASTED TURKEY CLUB

A triple decker club with roasted turkey, smoked bacon, lettuce, tomato, Swiss cheese and signature mayonnaise on country white toast

JERK CHICKEN WRAP

Crisp chicken tenders tossed in jerk sauce, smoked bacon, cheddar & Monterey Jack cheeses, salsa, red onions, shredded lettuce and ranch dressing rolled in a tomato basil tortilla

SHRIMP PO' BOY

New Orleans style breaded shrimp with lettuce, diced tomatoes and a spicy remoulade sauce

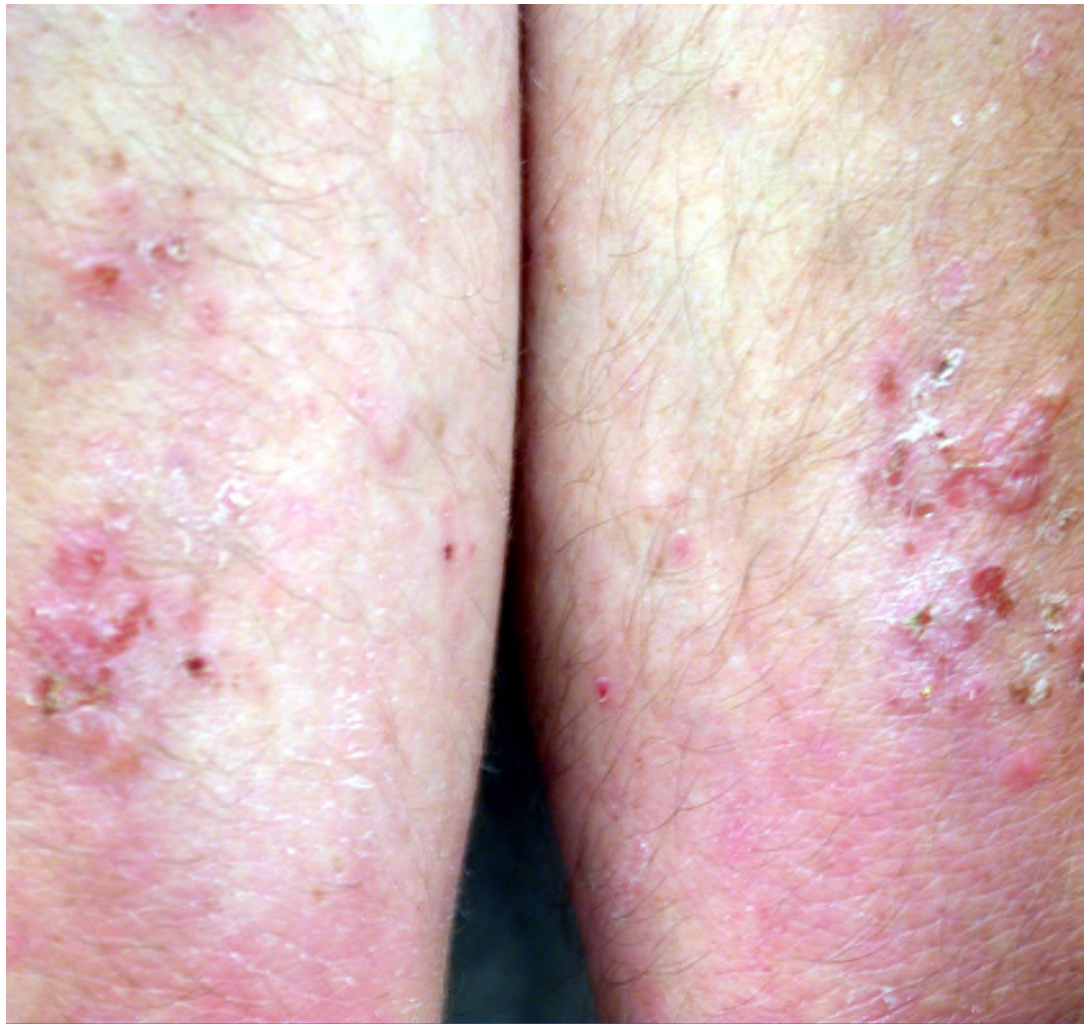
PHILLY CHEESESTEAK

Thin sliced ribeye steak mixed with onions, mushrooms and peppers, topped with spicy queso and provolone cheese on a hoagie roll

Question: Which Is The Likely Culprit?

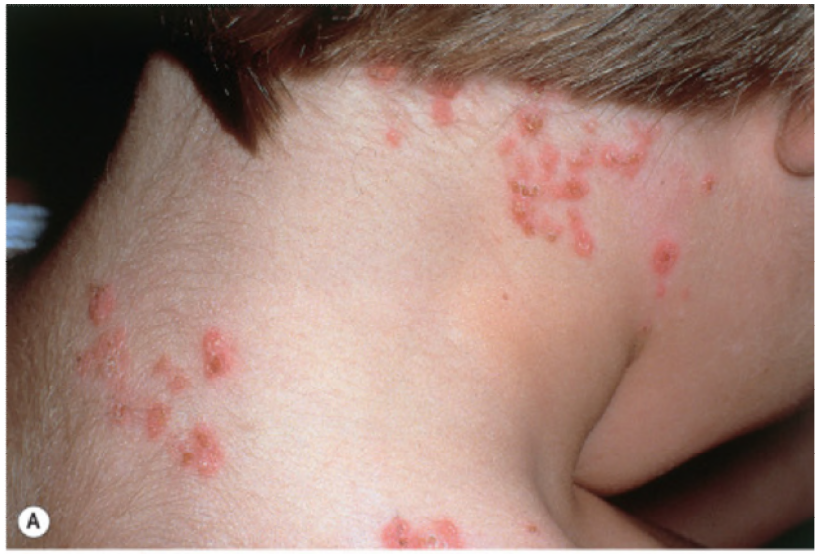
A. Turkey
B. Mayonnaise
C. Shrimp
D. Country white toast

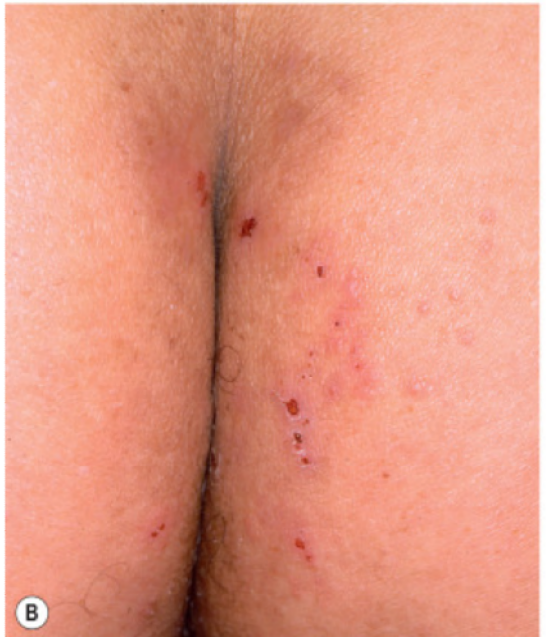
Dermatitis Herpetiformis



- Intensely pruritic vesicles/papules
- Gluten
- Diarrhea rare
- Increased risk of lymphoma
- Thyroid disease
- IgA anti TTG (ppv = 92%)
- Treatment
  - Gluten free diet
  - Dapsone

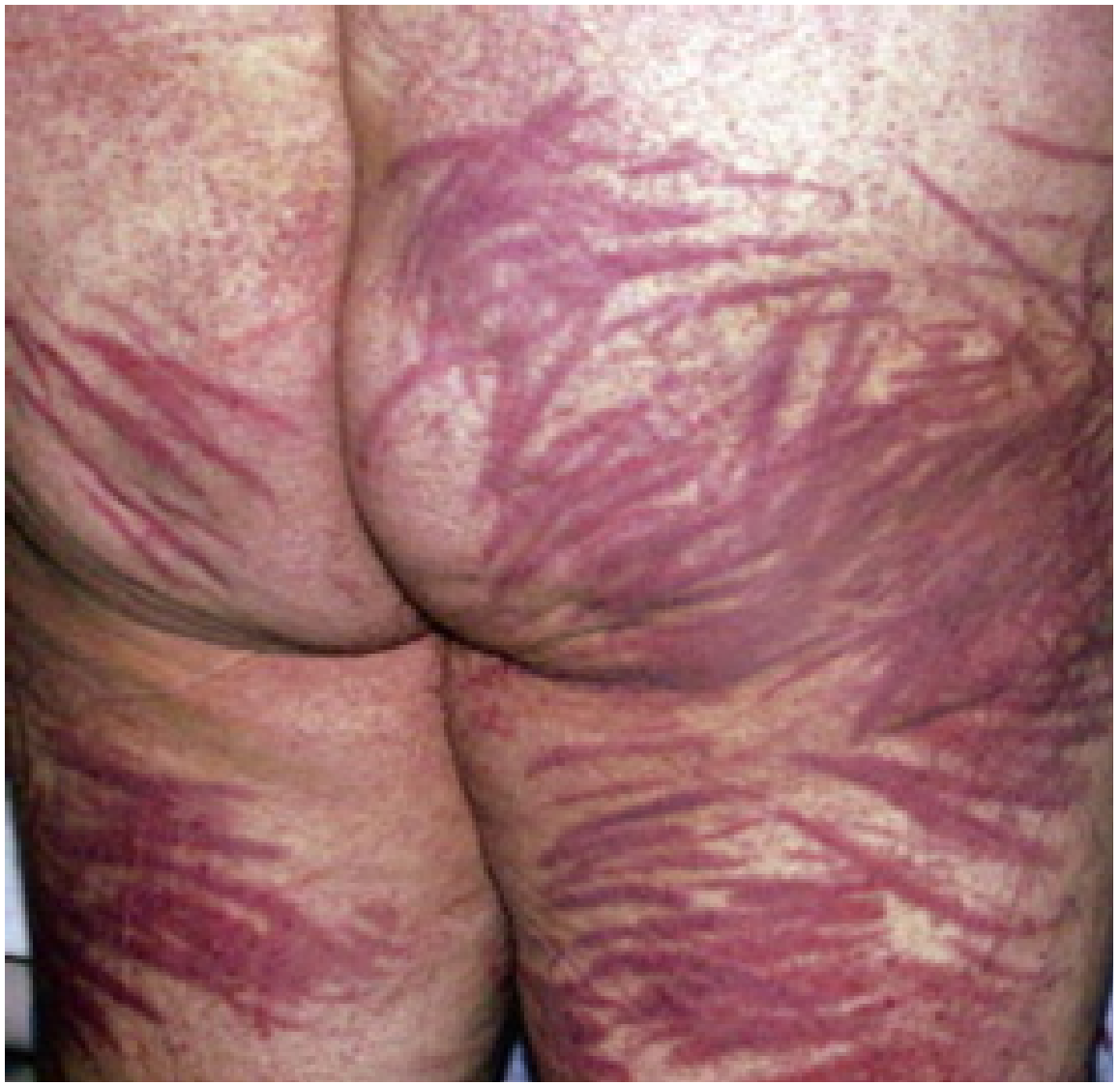
Dermatitis Herpetiformis





Forearms
Knees
Low back
Posterior neck

Case



Case

This patient broke out in a bizarre flagellate rash that occurred about 2 days after he ate at the hotel restaurant. The rash was mildly pruritic but otherwise he was asymptomatic.

Case

Windrose
MARKER 26
LAKESIDE DINING

Appetizers

Soup du Jour House made seasonal soup 8
Portabella Raviolis Ricotta cheese, red pepper coulis, brown butter, local greens 11
Coriander Crusted Tuna Radish, frisee, micro cilantro, blood orange, soy vinaigrette 16
Mussels Marinieres Garlic, lemon, duck fat, white wine, parsley, baguette 16
Scallops Saint - Jacques Onion gravy, champagne, tarragon 15
Maryland Crab Cakes Cajun remoulade, jalapeno jelly 15
Shrimp & Grits Candied tomato, chorizo, Creole sauce, grit cake 13

Salads

Mushroom & Bacon Salad Roasted Shiitake, goat cheese, dried cranberries, local greens, bacon & apple vinaigrette 12
Grilled Romaine Salad Tomato, parmesan, anchovy, hearts of Romaine, Caesar dressing 10
Duck Confit Salad Cured egg yolk, red onion, pear, local greens, blood orange & soy vinaigrette 9
Waldorf Salad Grape, apple, celery, candied pecan, iceberg wedge, champagne vinaigrette 11

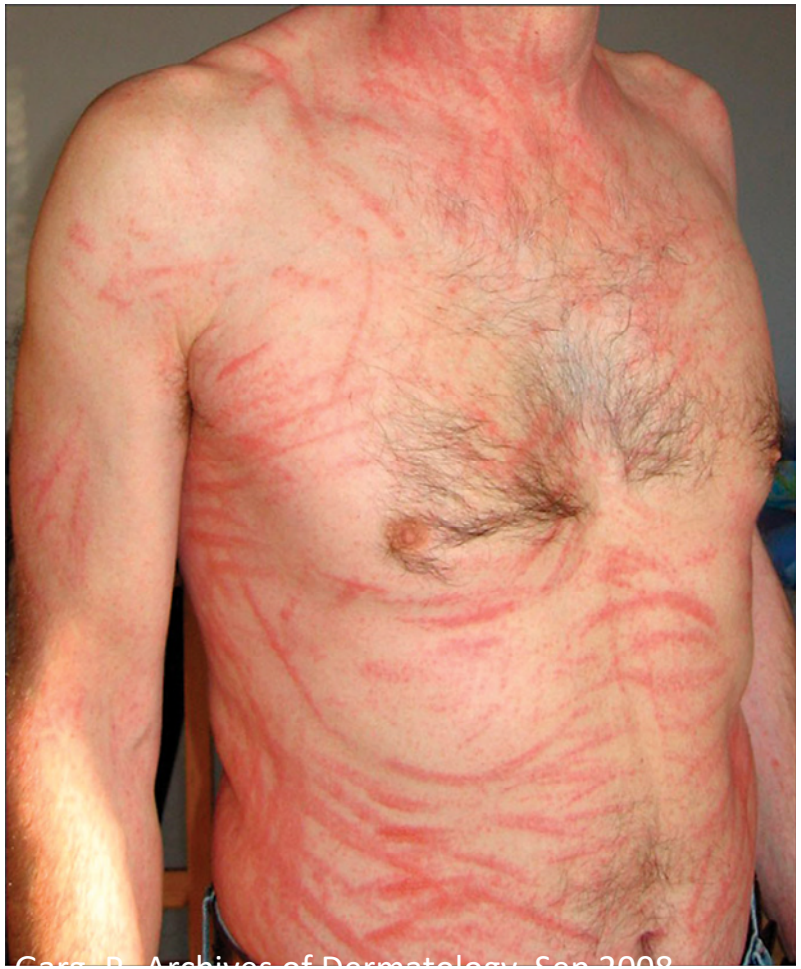
Main

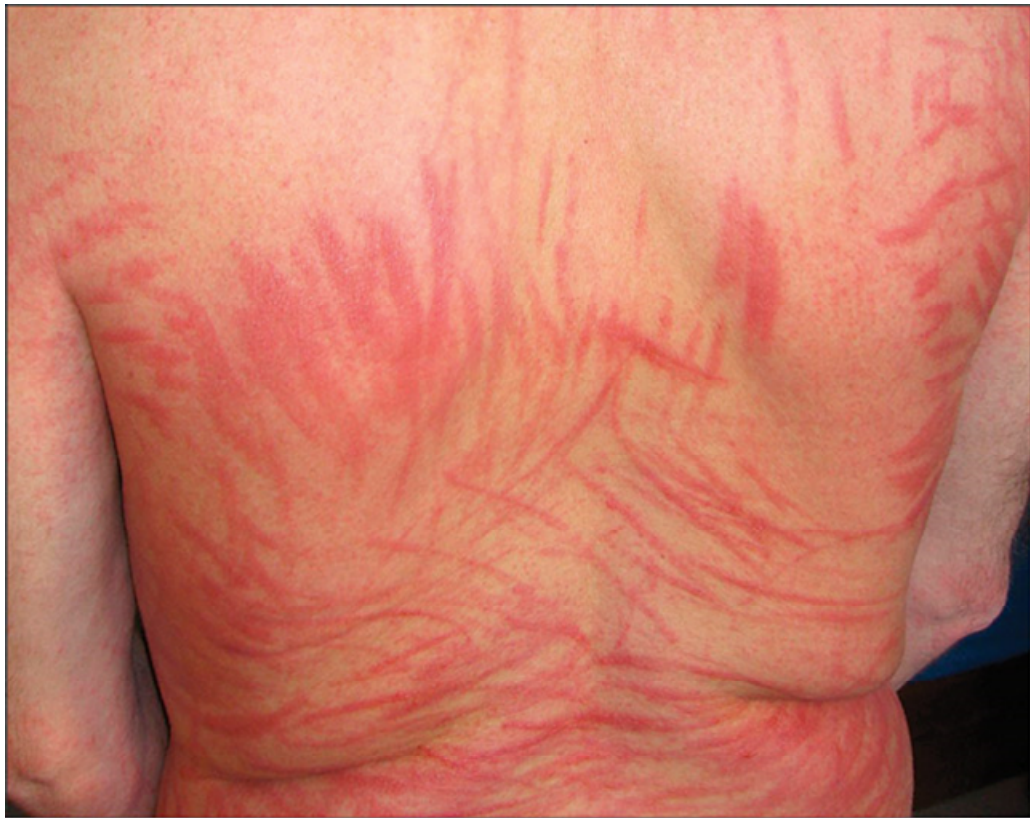
14oz Ribeye Mashed potatoes, seasonal vegetables, demi glace 38
8oz Filet Mignon Mashed potatoes, seasonal vegetables, demi glace 38
Duck a L'Orange Carrot, fingerling potatoes, blood orange 30
Roasted Lamb Polenta cake, pearl onion, demi glace, herb salad 42
Chicken Au Vin Mashed potatoes, Shiitake mushroom, carrot, red wine, brandy 26

Which Ingredient Is The Culprit?

A. Shiitake mushroom
B. Jalapeno jelly
C. Anchovy
D. Chicken

Shiitake Dermatitis (toxicoderma)



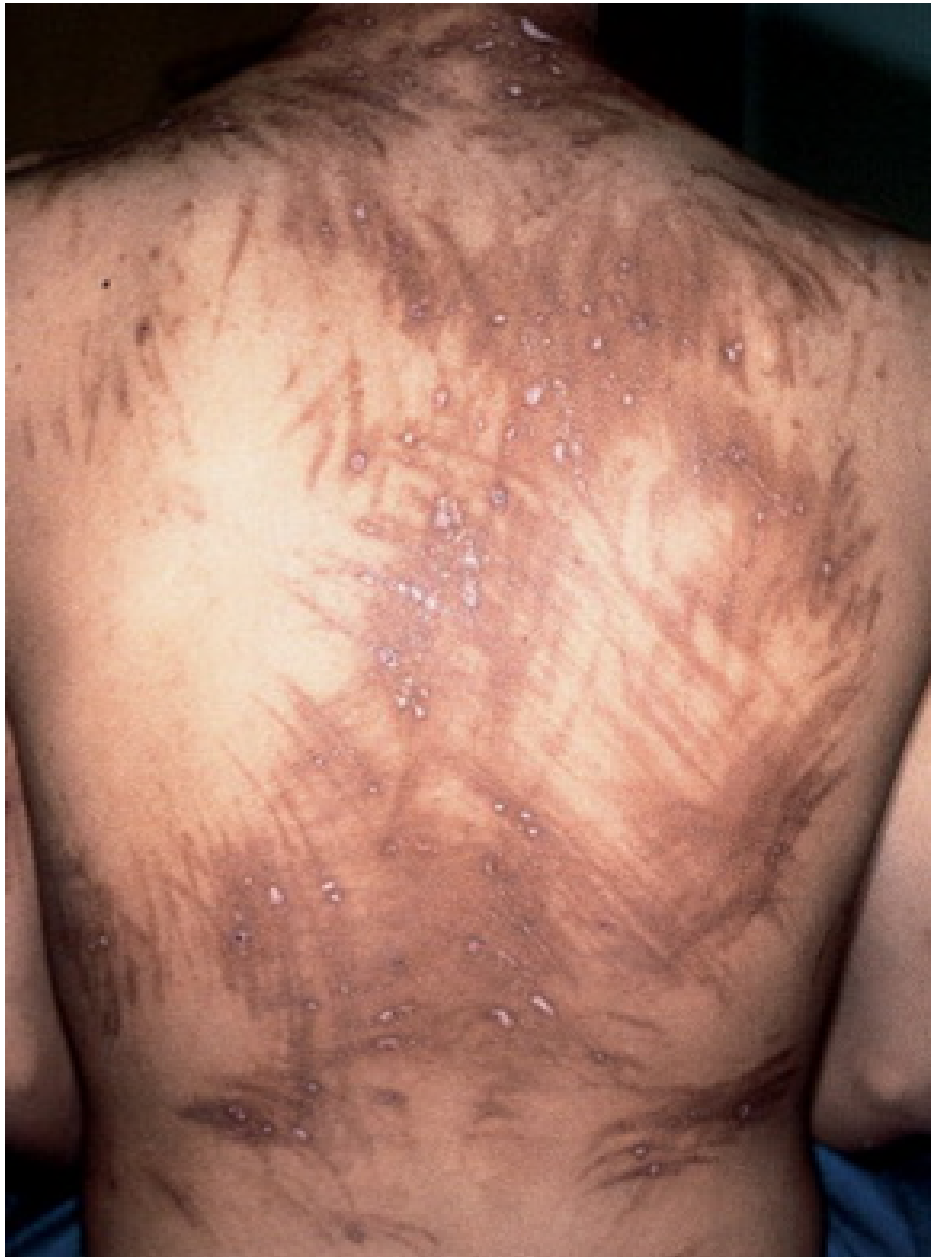


Shiitake Mushrooms

Forest Mushroom

www.ozarkforest.com

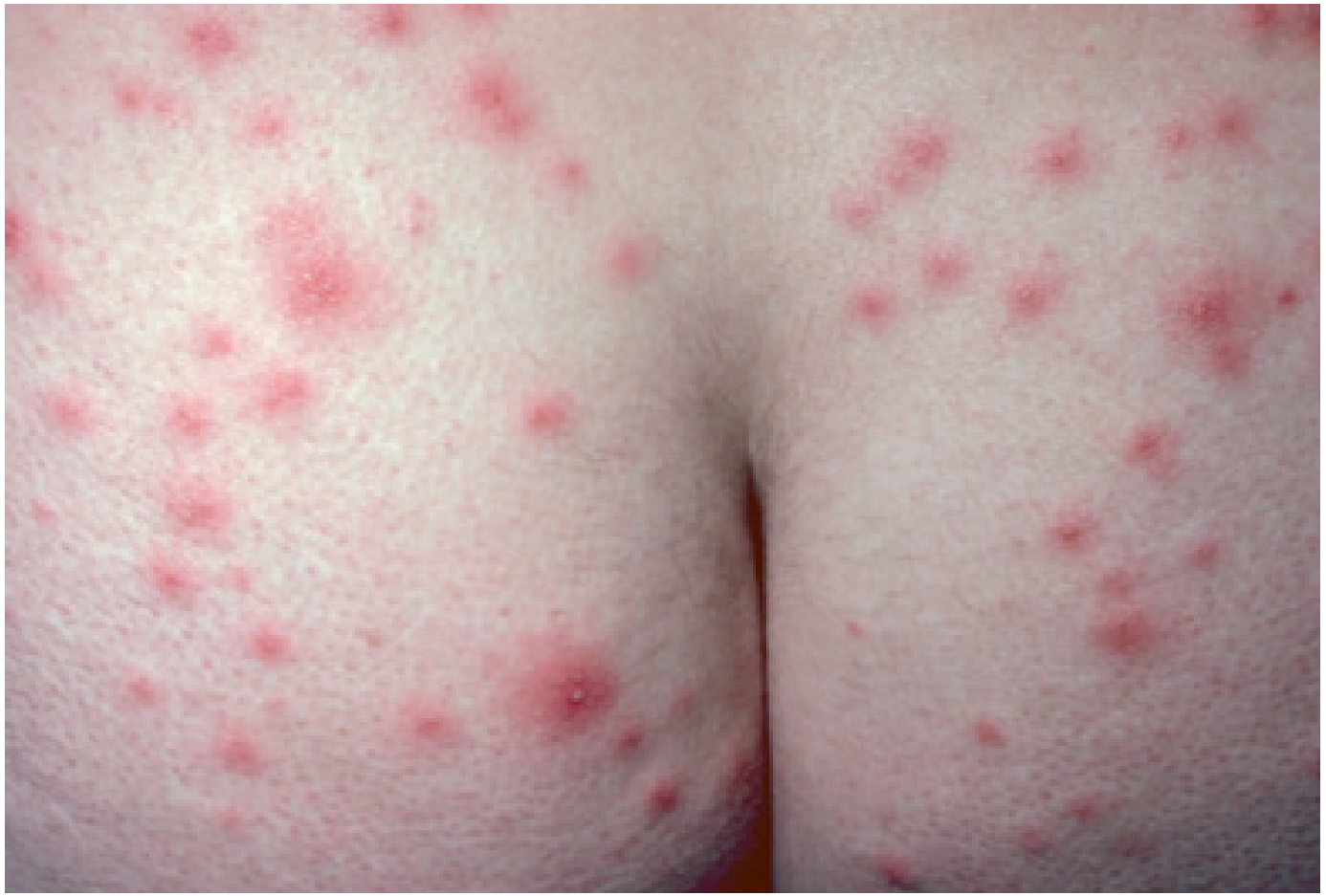
Bleomycin



Shiitake Mushroom Dermatitis

- 1-3 days after eating raw or undercooked mushrooms
- Not an allergy
- Oral challenge might confirm
- Toxic reaction to lentinan (thermolabile and destroyed by cooking)
- Resolution in 1-8 weeks

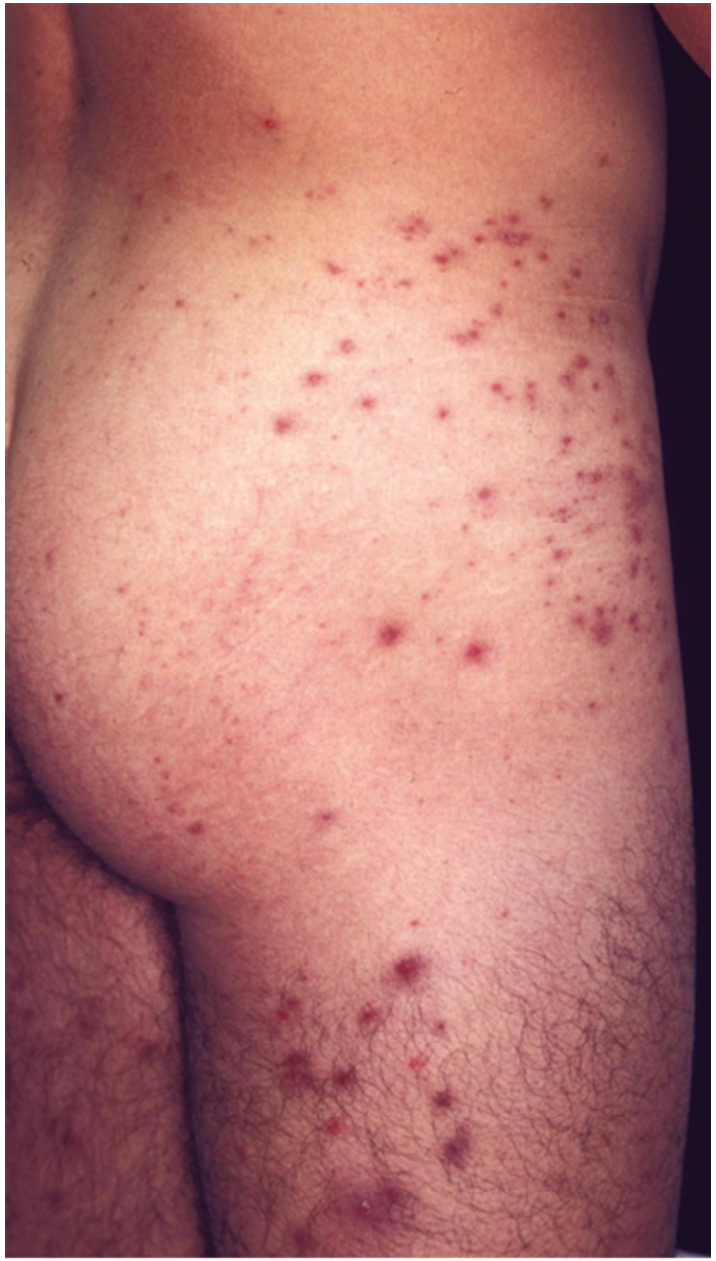
Case



Case

- This patient returned from vacation
- She mostly hung out at the pool all day, now..
- With itchy/tender bumps
- She is otherwise healthy and ros are all negative

Case



Question: What is the most likely cause of this rash?

A. Bad shellfish
B. Infestation in guest room
C. Hot tub
D. Alcohol

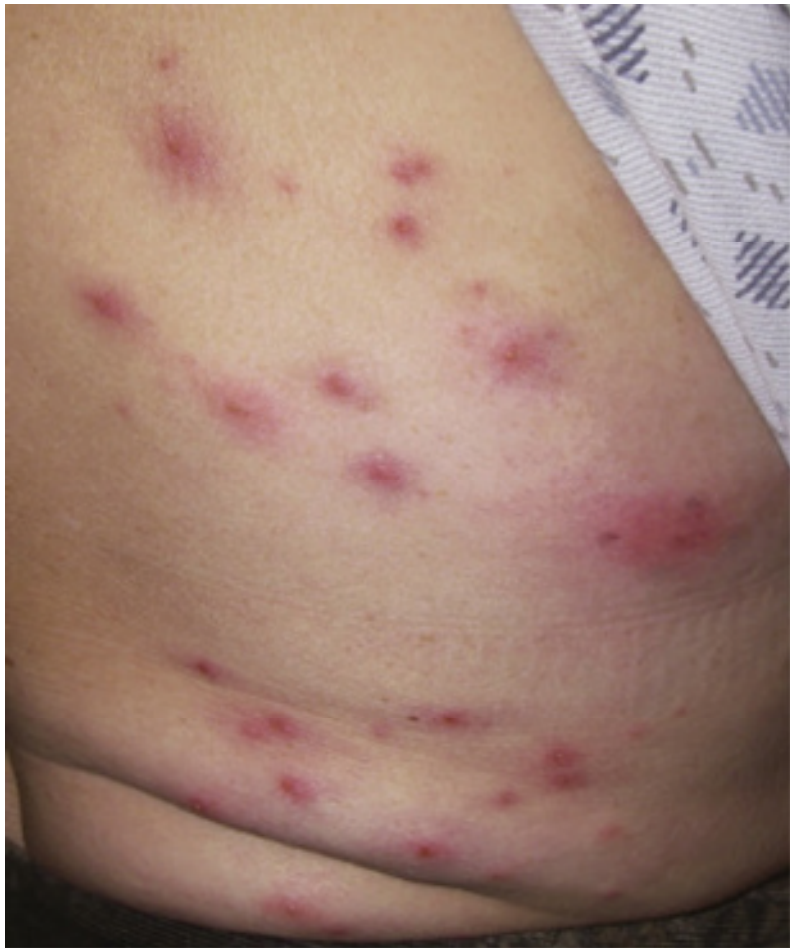
Hot Tub Folliculitis

- 1-4 days after hot tub
- Pseudomonas aeruginosa
- Pink papules/pustules
- Topical/Po antibiotics
- Rarely severe: abscess, bacteremia
  - More severe in immunocompromised

Case

After swimming in the lake every day on vacation, your patient developed a red itchy rash. She is otherwise healthy and ros are all negative. She did not improve with cephalexin.

Gram Negative Folliculitis

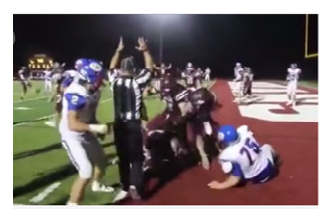


News

E. coli test results high at Bagnell Dam Access but low at Lake of the Ozarks public beach

By: Ashley Strohmier
Posted: May 20, 2019 08:25 PM CDT
Updated: May 21, 2019 04:15 PM CDT

Department of Natural Resources issues swimming advisory



ost Popular

Osage's Jack Dulle scores a touchdown against California 9/13/19

Suzette Martinez Standring: Pure reassurance

By JOYCE MILLER jmiller@lakesunonline.com
Posted Jun 13, 2019 at 2:58 PM

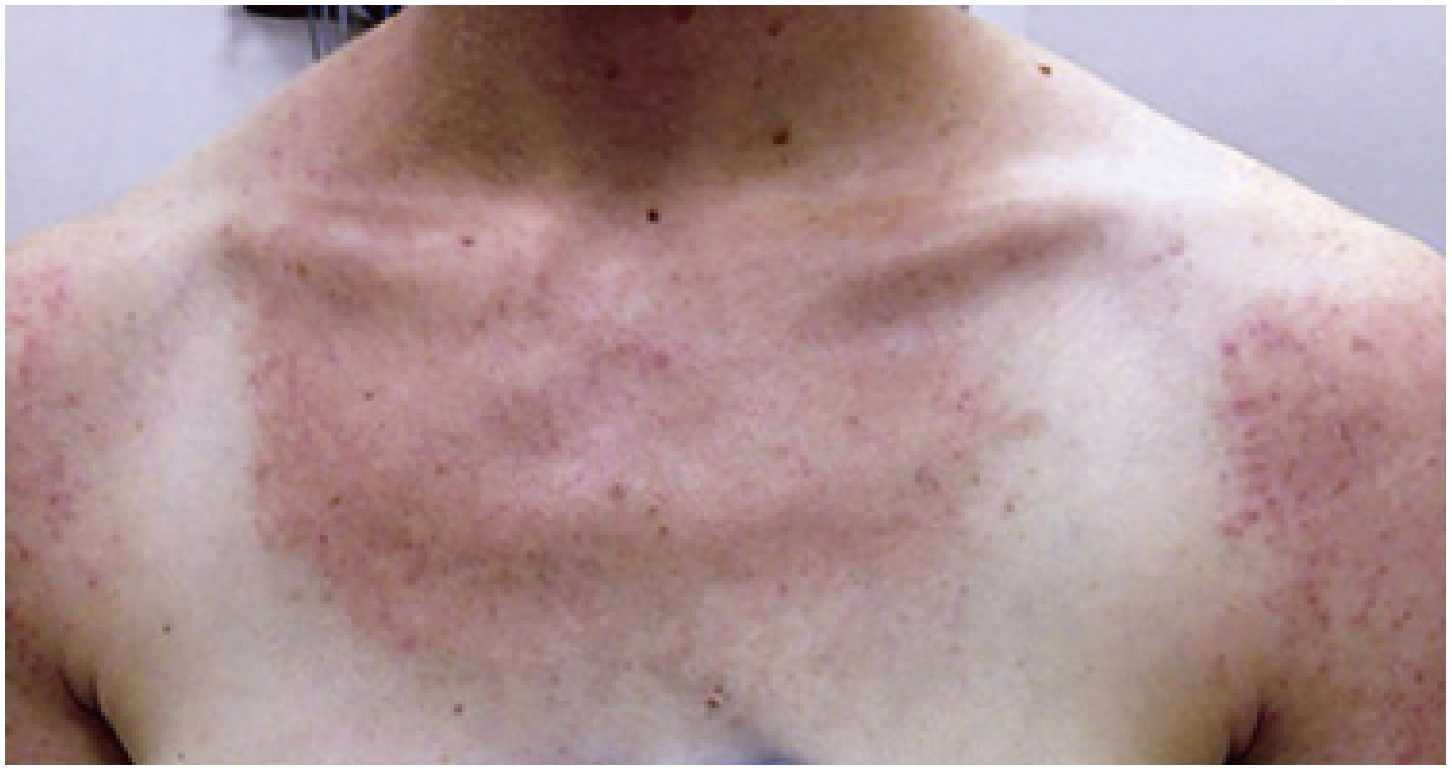
Gram Negative Folliculitis

- History of acne treatment with po antibiotics
- Long courses of po gram positive treatment
- Water
- E. coli, Klebsiella, Enterobacter…
- Gentamicin topical, benzoyl peroxide
- Po gram negative coverage if necessary

Case

- Rash after swimming in the lake
- Itchy
- Not follicular
- Culture negative

Swimmer’s Itch

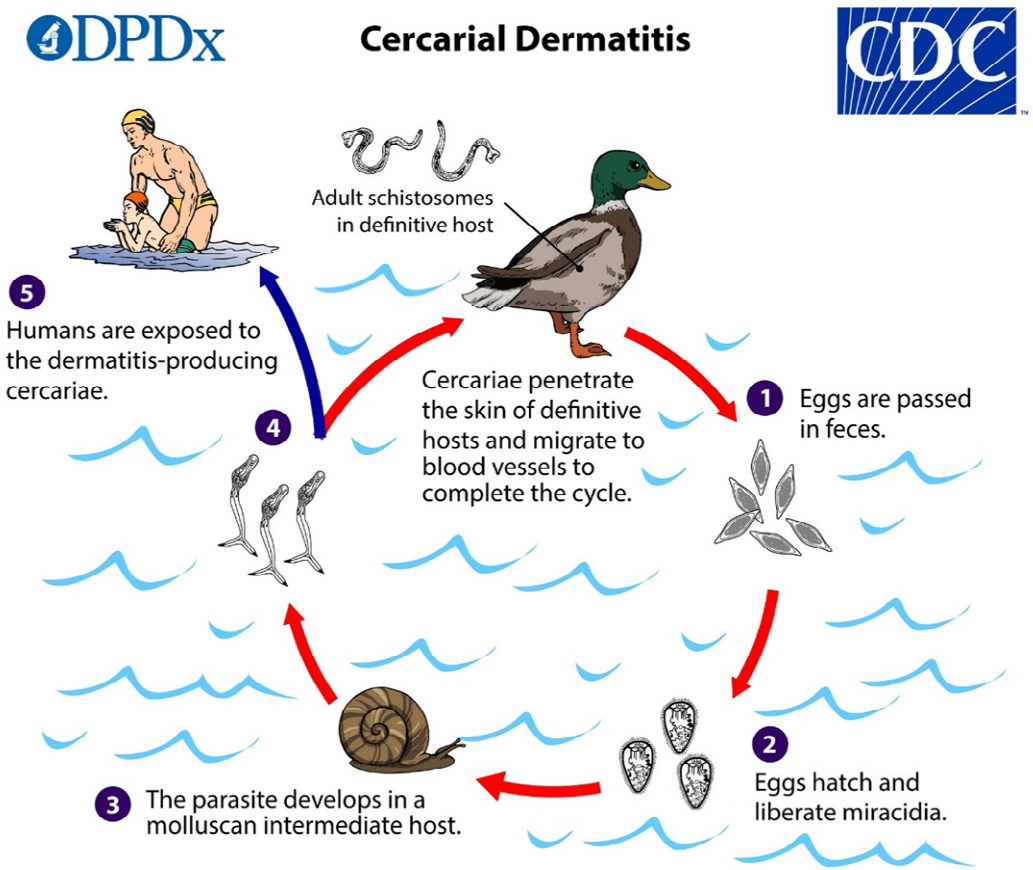


Cercarial dermatitis
Occurs in uncovered areas around swimwear

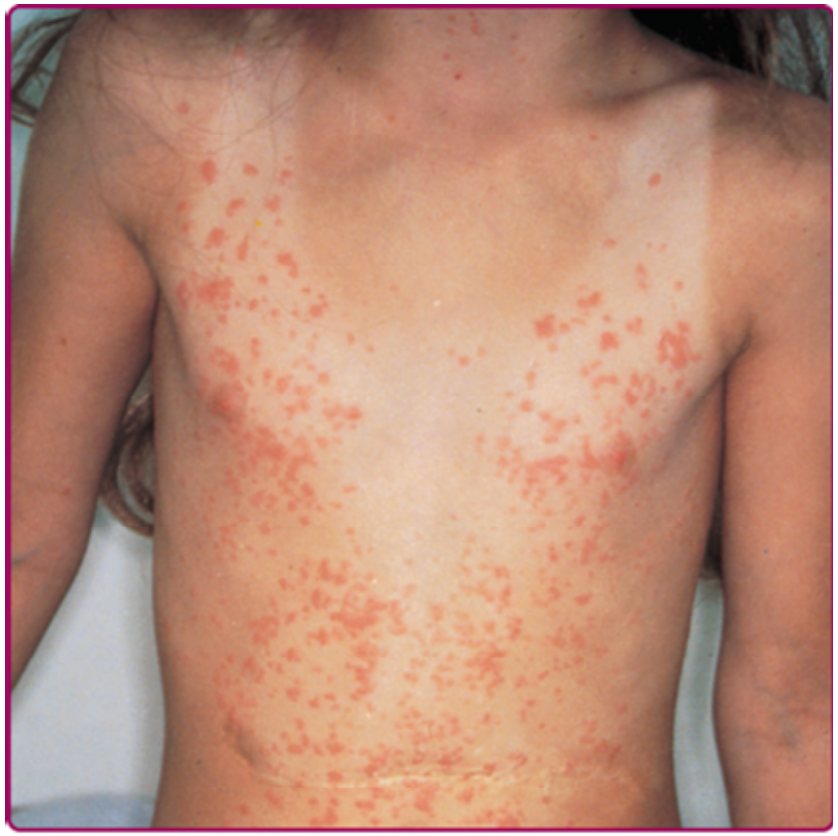
Fresh water
Schistosomes in birds, mammals drop into Snails which release cercaria which..

Penetrate the skin of humans but
Do not develop further

Swimmer's Itch



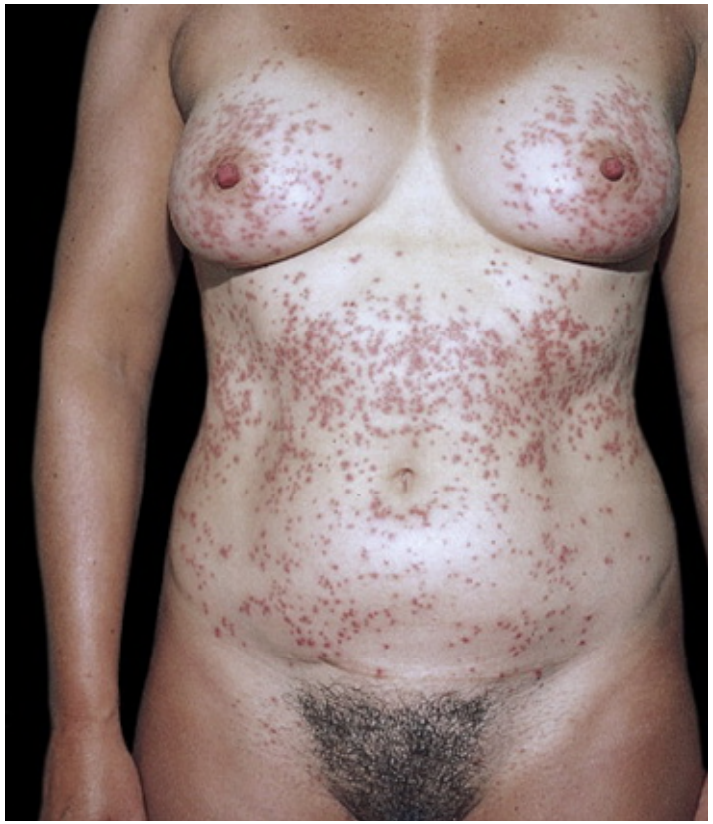
Seabathers Eruption



Larvae of thimble jellyfish

Occurs under swimwear

Seabathers eruption



Habif text

The scoop has been right there under our noses on the conservation department's website, home of an entire field guide devoted to "Freshwater Jellyfish," aka Craspedacusta sowerbyii.

According to the U.S. Geological Survey, freshwater jellyfish have been reported in 44 states - in the Lake of the Ozarks and along the Missouri River in the Show-Me state, and in the Little Arkansas and lower and upper portions of the Kansas River in the Sunflower State.