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TROPICAL DISEASE FOUNDATION

Clueless: Fungal and Viral Skin Infections

Objectives of lecture in Clueless

BE CLUEFUL:

RECOGNITION

MANAGEMENT

Superficial fungal infections

1. Dermatophytes ("Tinea")
 - a. *Trichophyton sp.* (hair, skin and nails)
 - b. *Microsporum sp.* (hair and nails)
 - c. *Epidermophyton sp.* (skin)
2. Yeasts
 - a. *Pityrosporum ovale* (skin)
 - b. *Candida sp.* (skin and mucus membranes)

Fungal Infections

First Clue: Are there predisposing factors?

- *Trauma to the skin or constant rubbing*
- *Increased moisture (sweating) and warmth, poor hygiene*
- *Use of prolonged antibiotics, steroids*
- *Immunocompromised state*

Dermatophytes: Recognition

TINEA CORPORIS (Ringworm of the body): may appear on any part of the glabrous skin

- ***Red, scaly papules that spread peripherally: activity is in the BORDER (SLOW GROWING)***
- ***Papules coalesce and lesion becomes annular***
- ***Itchy if very inflammatory especially in the groin area***

Recognition: CLUES

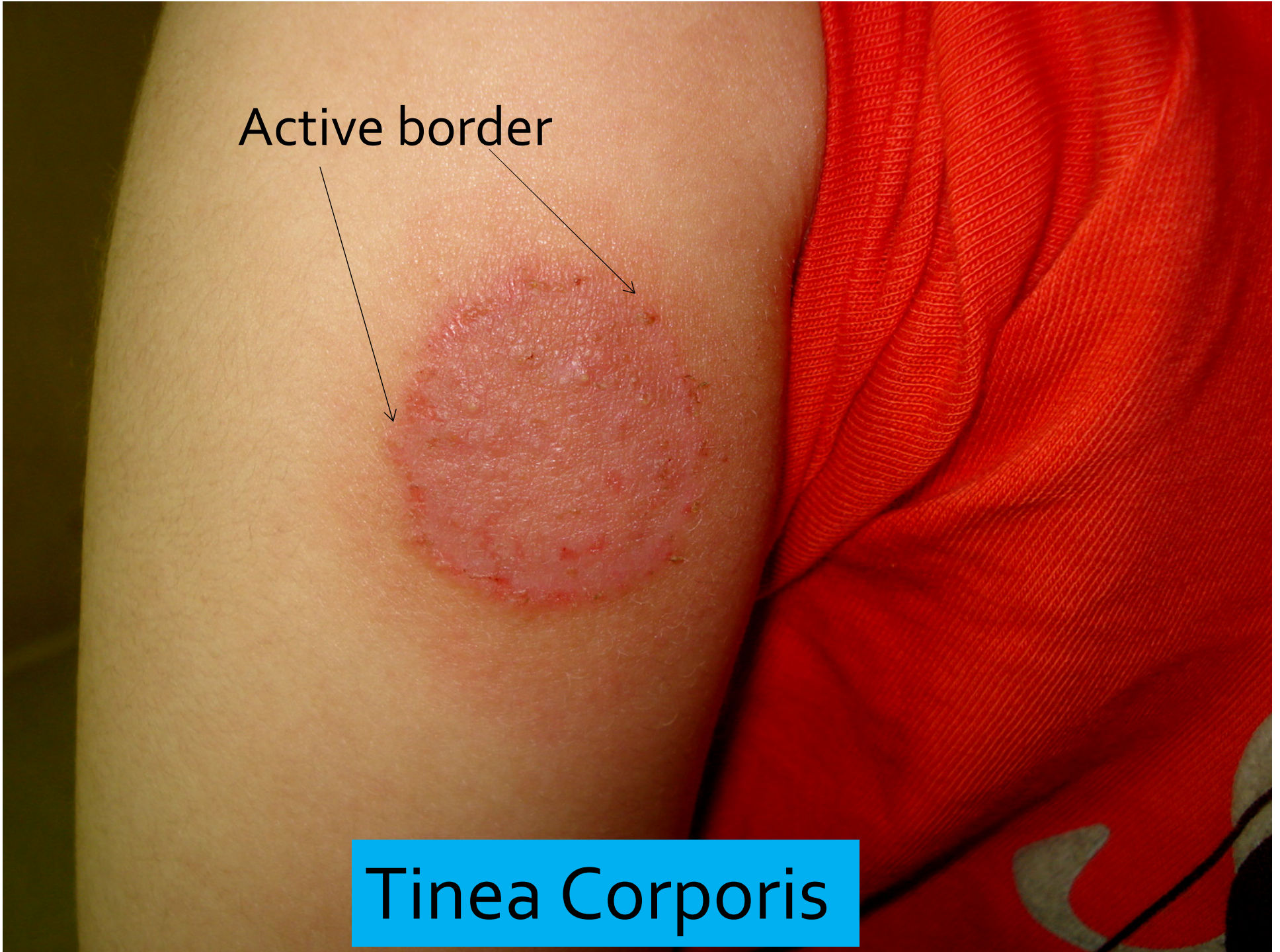
LOOK FOR AN ADVANCING
BORDER:

*sharp contrast between
normal and affected skin*

SLOW GROWING

Active border

Tinea Corporis



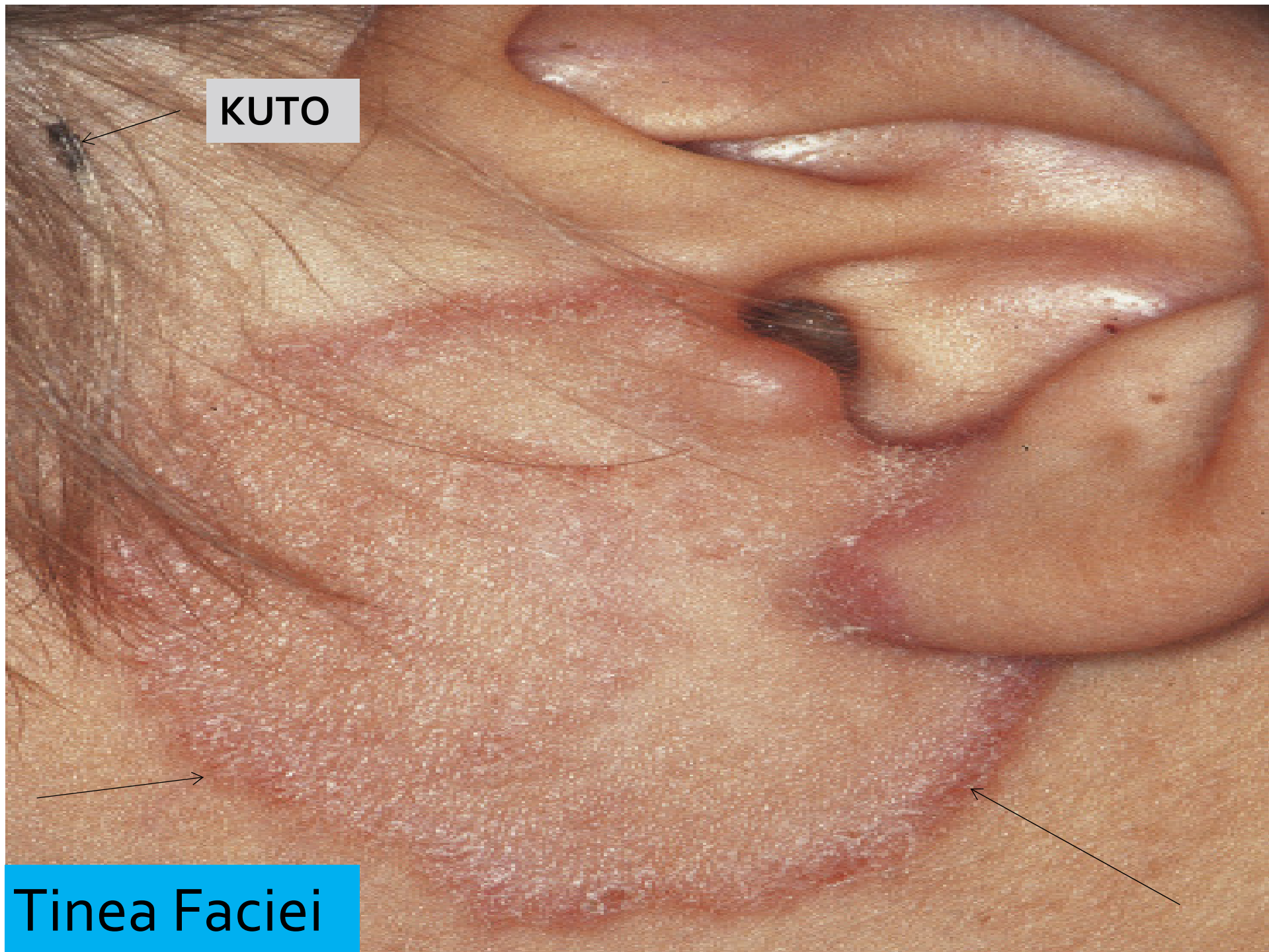


A clinical photograph of a person's back showing a large, circular, red, and scaly rash. The rash has a well-defined, raised, and inflamed outer edge, which is the active border. The center of the rash is less inflamed and appears to be healing. Two arrows point from the text 'Active border' to the inflamed outer edge of the rash.

Active border

Tinea Corporis

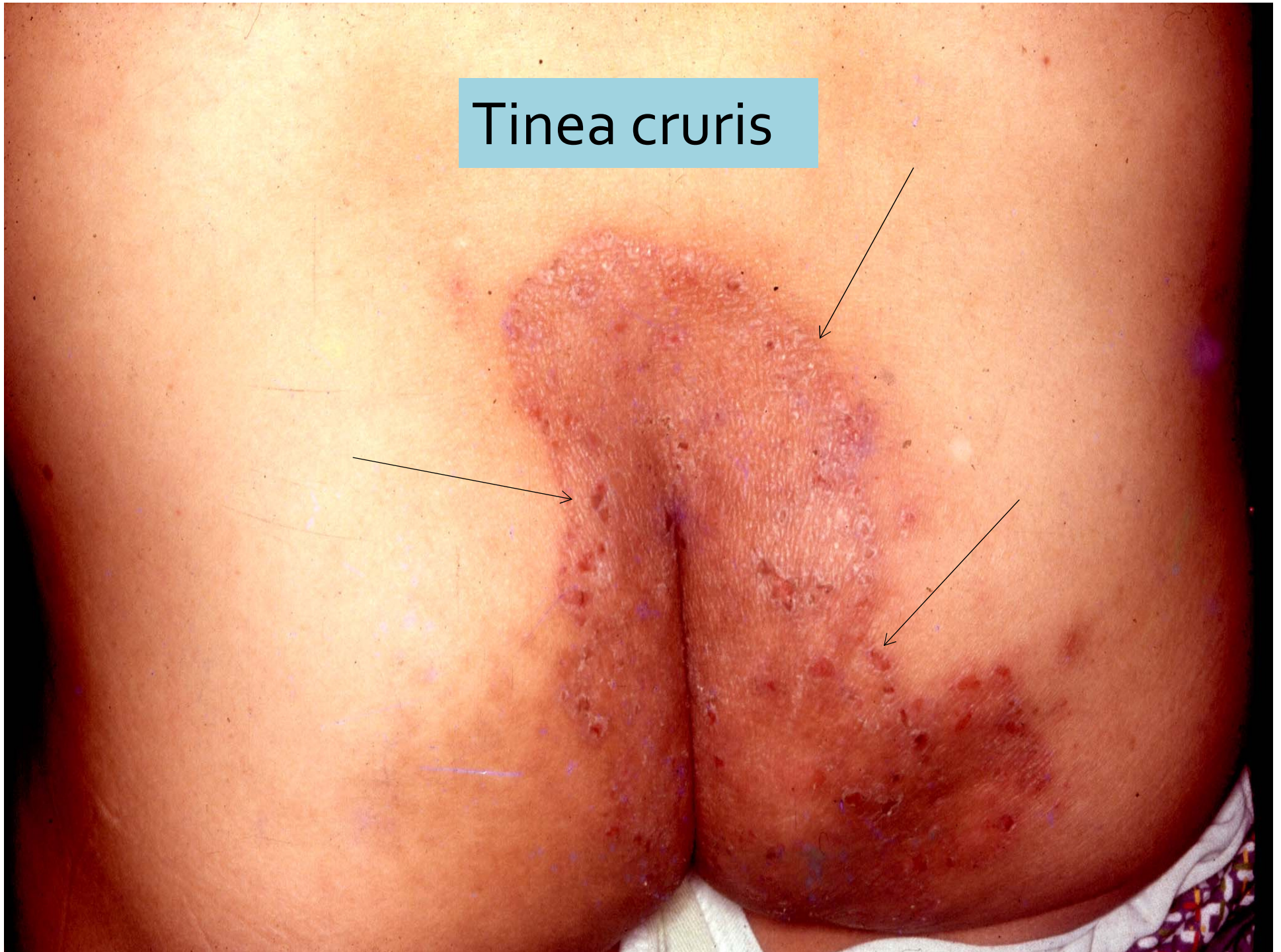






Tinea Faciei

Tinea cruris



Please Note:

Not all rings are

Ringworm



Urticaria: multiple coalescing evanescent lesions



Atopic Dermatitis



Nummular eczema: very pruritic weeping lesion



Pityriasis rosea



TINEA FACIEI



IMPETIGO CONTAGIOSA

Honey colored crusts

Dermatophytes: Recognition

TINEA CAPITIS

Clue: prepubertal child with a scaly scalp (low sebum – low antifungal properties)

***: patchy hair loss with scales
: or inflammatory papules and pustules (may be severe with cervical lymphadenopathy)***

Seborrheic dermatitis like
Tinea capitis

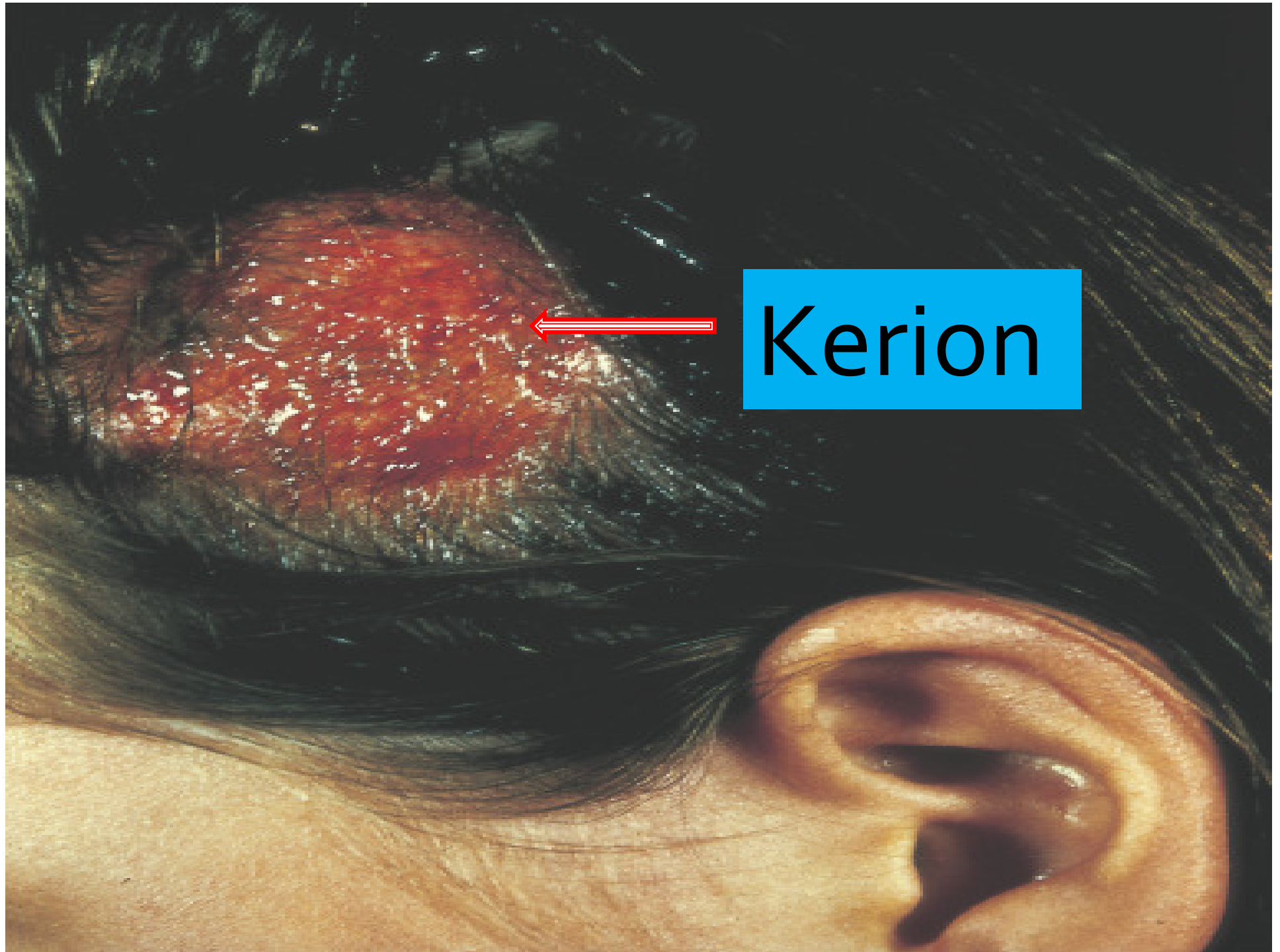




“Black dot” tinea capitis



Inflammatory tinea capitis



Scarring alopecia



A close-up photograph of a person's scalp showing scarring patchy alopecia. The hair is dark brown and appears thinning in several areas, revealing a reddish, inflamed, and scaly scalp underneath. A hand is visible on the left side of the frame, gently holding the hair. In the background, a book with the title 'MORPHOLOGY OF SKIN' is partially visible. A blue text box with the words 'Scarring patchy alopecia' is overlaid on the image.

Dermatophytes: Recognition

TINEA UNGIUM

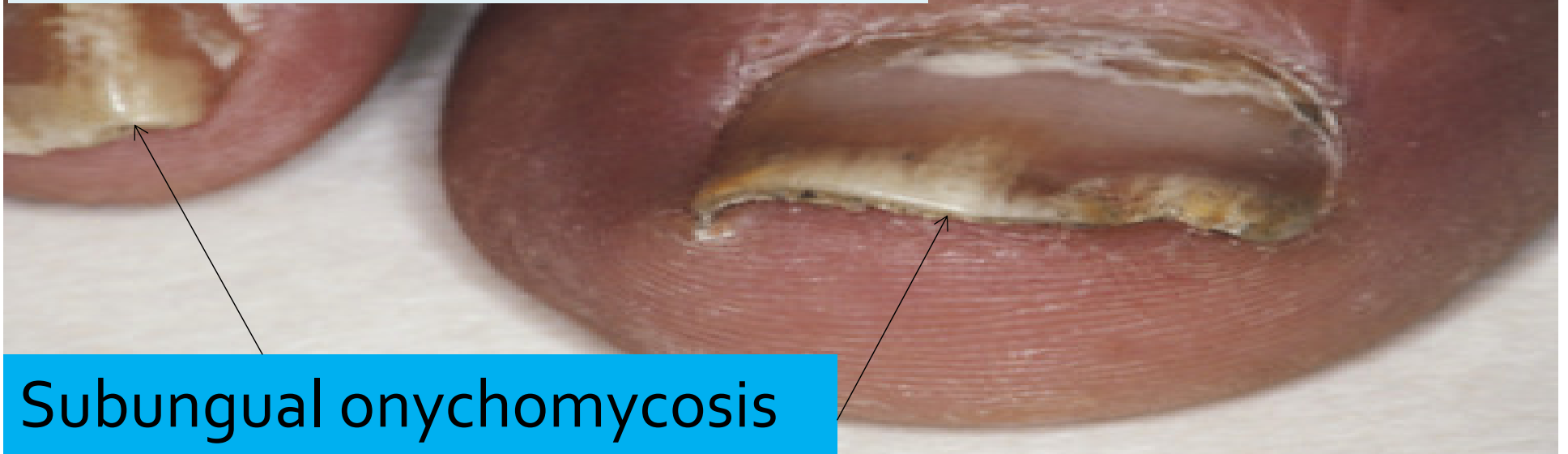
Not common in children

:usually associated with Tinea pedis

*:toenails much more commonly
involved than*

fingernails

Clue: Look for fungal debris!!!!



**50% of nail fungus diagnosis is
wrong!!!!!!!!!!!!!!!!!!!!!!**

***Not all dystrophic nail
changes are caused by
fungus!***

Clue: Look for fungal debris!!!!



Onychomycosis



20 Nail Dystrophy

Nail pitting in Psoriasis



Onycholysis – distal split

Beau's lines/Onychomadesis



Proximal split: after SJS



**Onychomadesis after Hand Foot
and Mouth disease**

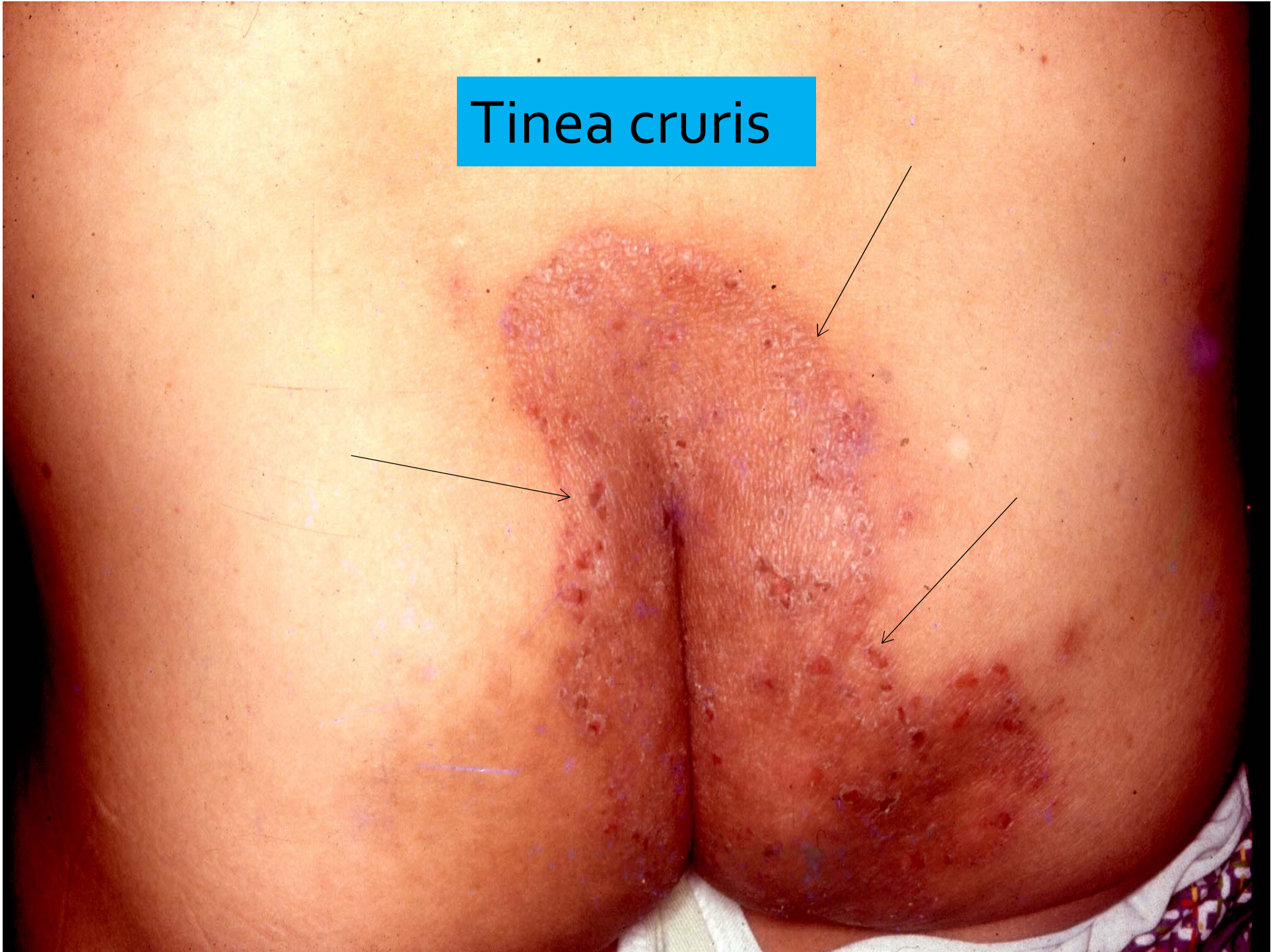
Dermatophytes: Diagnosis

- Clinical picture : often distinctive
- Laboratory (skin scrapings):
 - KOH smear: long, branching septate hyphae
 - Fungal culture



Tinea Faciei

Tinea cruris





Tinea imbricata



Hyphae

This is a microscopic image of a KOH smear. The image shows a dense network of long, thin, branching structures called hyphae. These hyphae are composed of chains of small, round cells. The background is a light purple color, and the hyphae are stained a darker purple. A label 'Hyphae' with three arrows points to different parts of the network. A blue box at the bottom contains the text 'KOH smear'.

KOH smear



Fungal culture

Dermatophytes: Management

- Topical anti-fungals (Azoles, Terbinafine):
2-4 weeks of treatment (usually continue for 1 week after lesions clear up)
- Oral anti-fungals:
 - 1. Not responding to topicals*
 - ★ *2. Hair bearing areas*
 - ★ *3. Nail involvement*

Dermatophytes: Management

- Oral anti-fungals:

1. *Griseofulvin: 15-25 mg/d (max: 1 g/d)*

face/body: 4-6 weeks

scalp: 6-12 weeks

nails: 3-12 months

2. *Terbinafine: 3-6 mg/d*

face/body/scalp: 2-4 weeks

nails: 6-12 weeks

Dermatophytes: Management

- Oral anti-fungals:

3. *Itraconazole: 5 mkd*

face/body/scalp: 2-4 weeks

nails: 6-12 weeks

Note: Ketoconazole has been withdrawn

4. *Fluconazole:*

scalp: 6 mkd x 2-4 weeks

nails: 6 mg/kg/week x 12-26 weeks

Superficial Yeast Infections

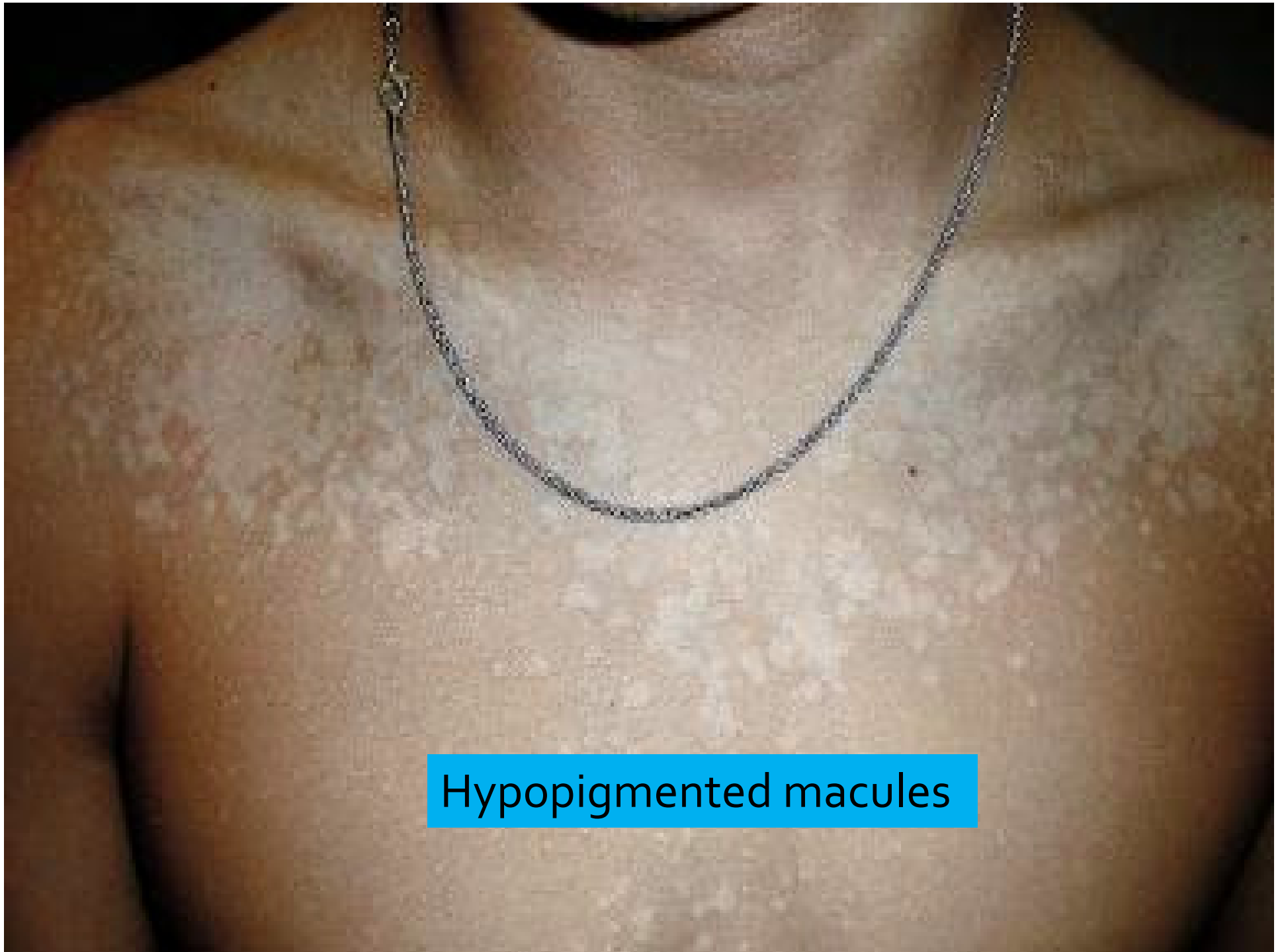
- **Pityriasis versicolor**
- **Candidiasis**

Pityriasis versicolor

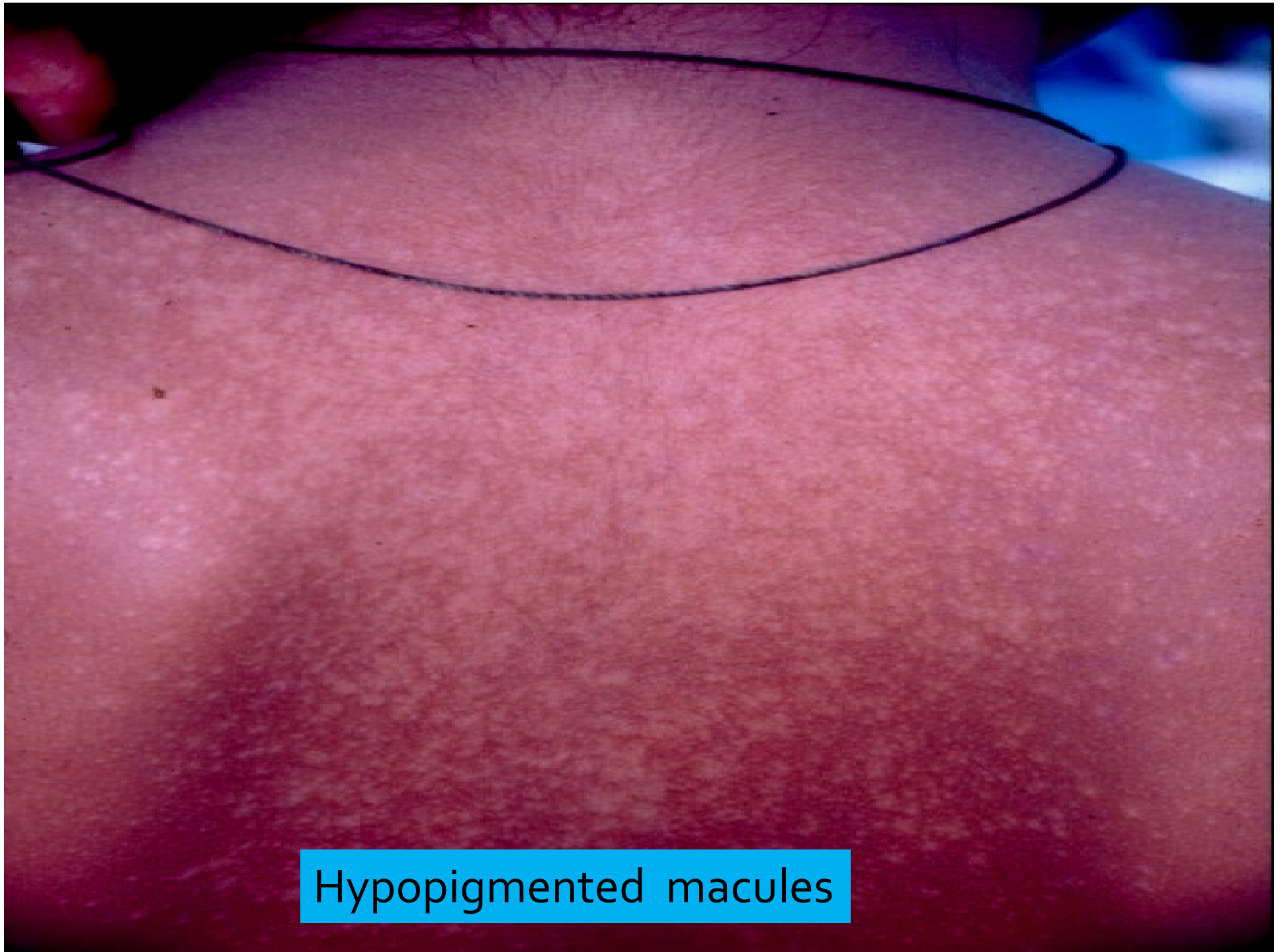
- Etiologic agent: *Malassezia furfur* or *Pityrosporum ovale*
- Factors which make it pathogenic:
 1. high temperature and humidity
 2. hyperhidrosis
 3. increased sebum production
 4. steroid therapy
 5. immunodeficiency
 6. hereditary factors

Pityriasis versicolor: Recognition (Multicolored)

- Hypopigmented to faint pink/red to tan/dark brown skin lesions: discrete and coalescent ovoid macules
- **CLUE: (+) Fingernail Sign**
scratching causes fine or branny desquamation (fungal debris)
- Areas of predilection: upper back, chest, arms and face (forehead and temples)

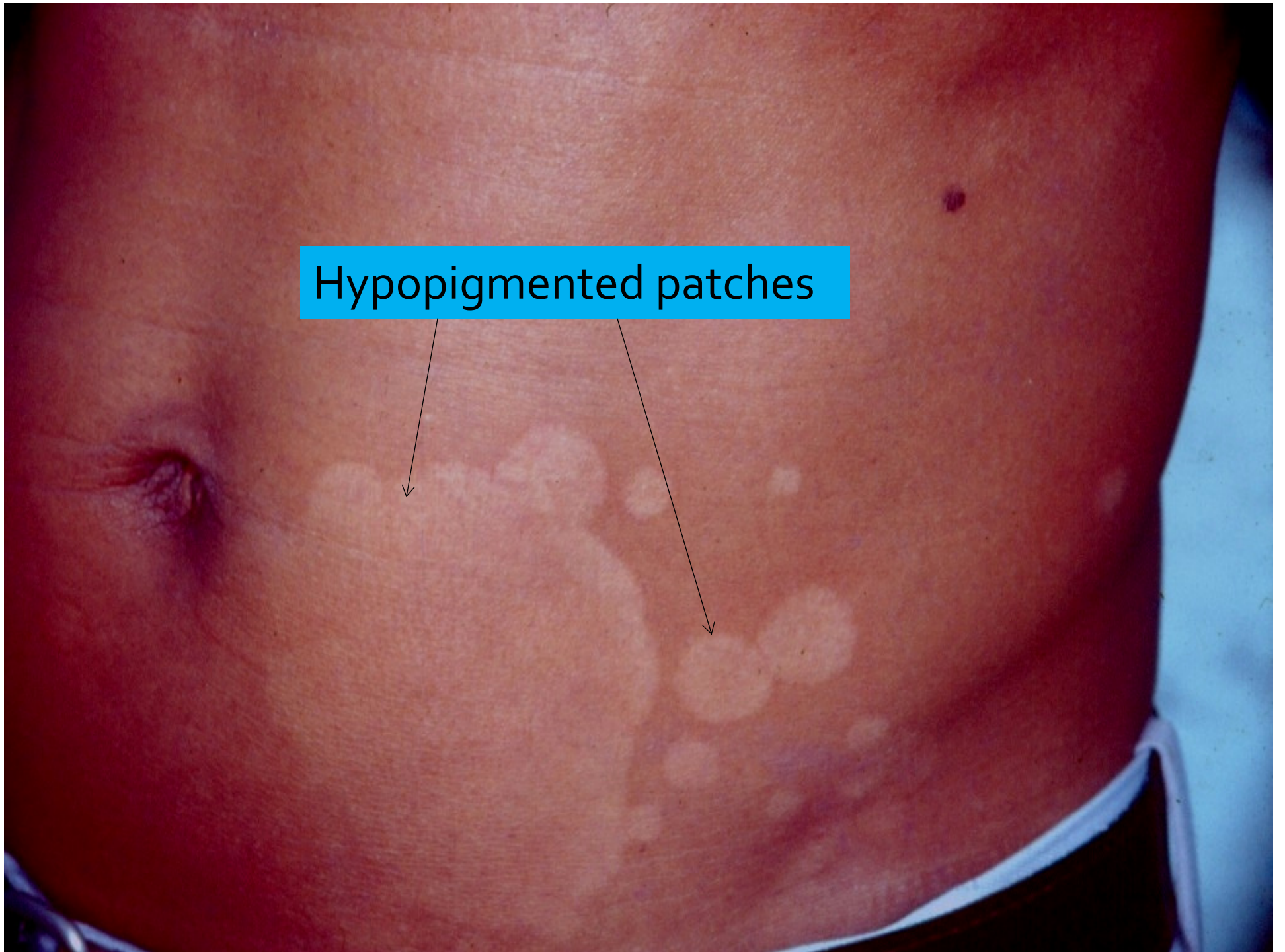


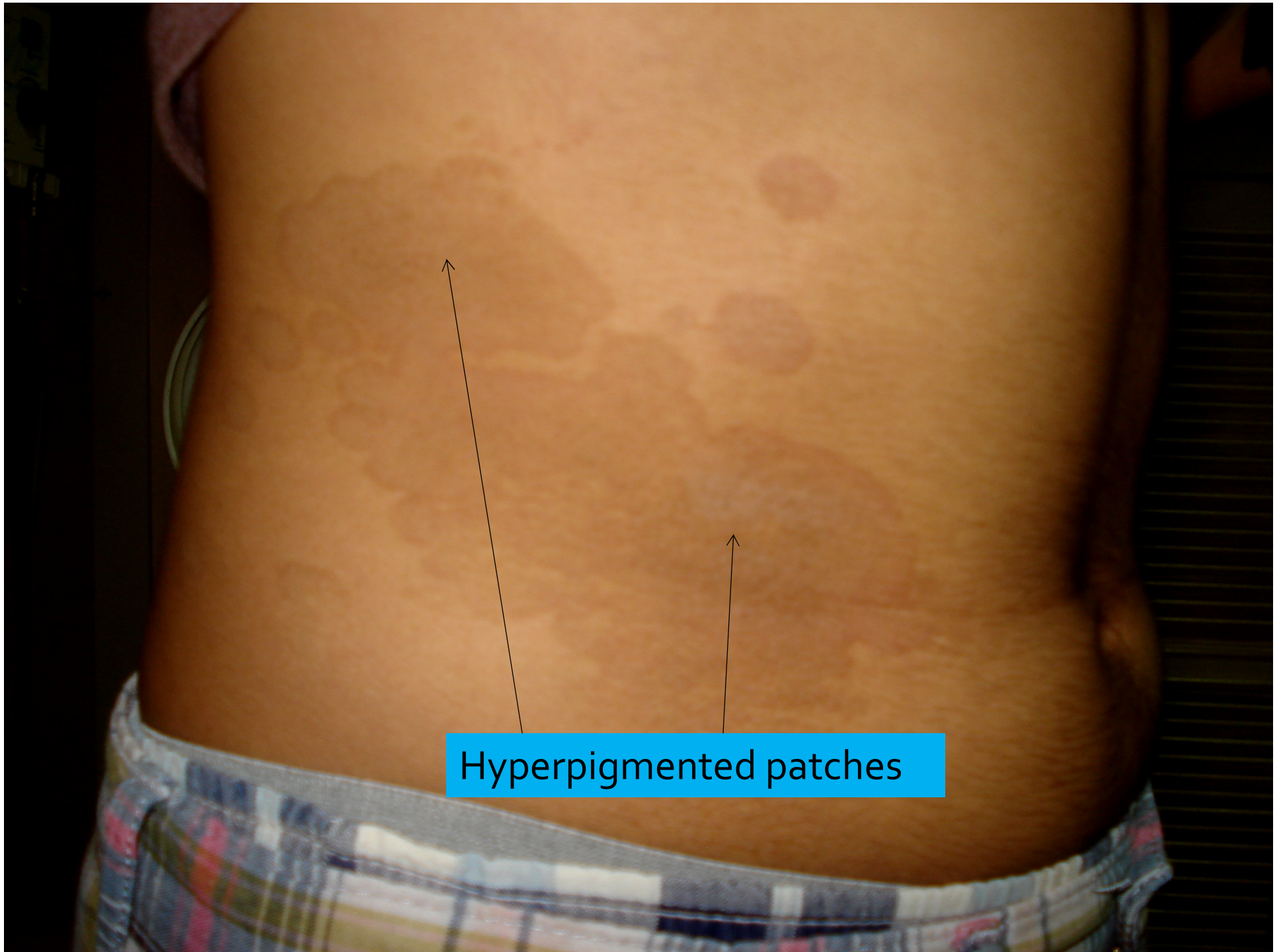
Hypopigmented macules



Hypopigmented macules

Hypopigmented patches





Hyperpigmented patches



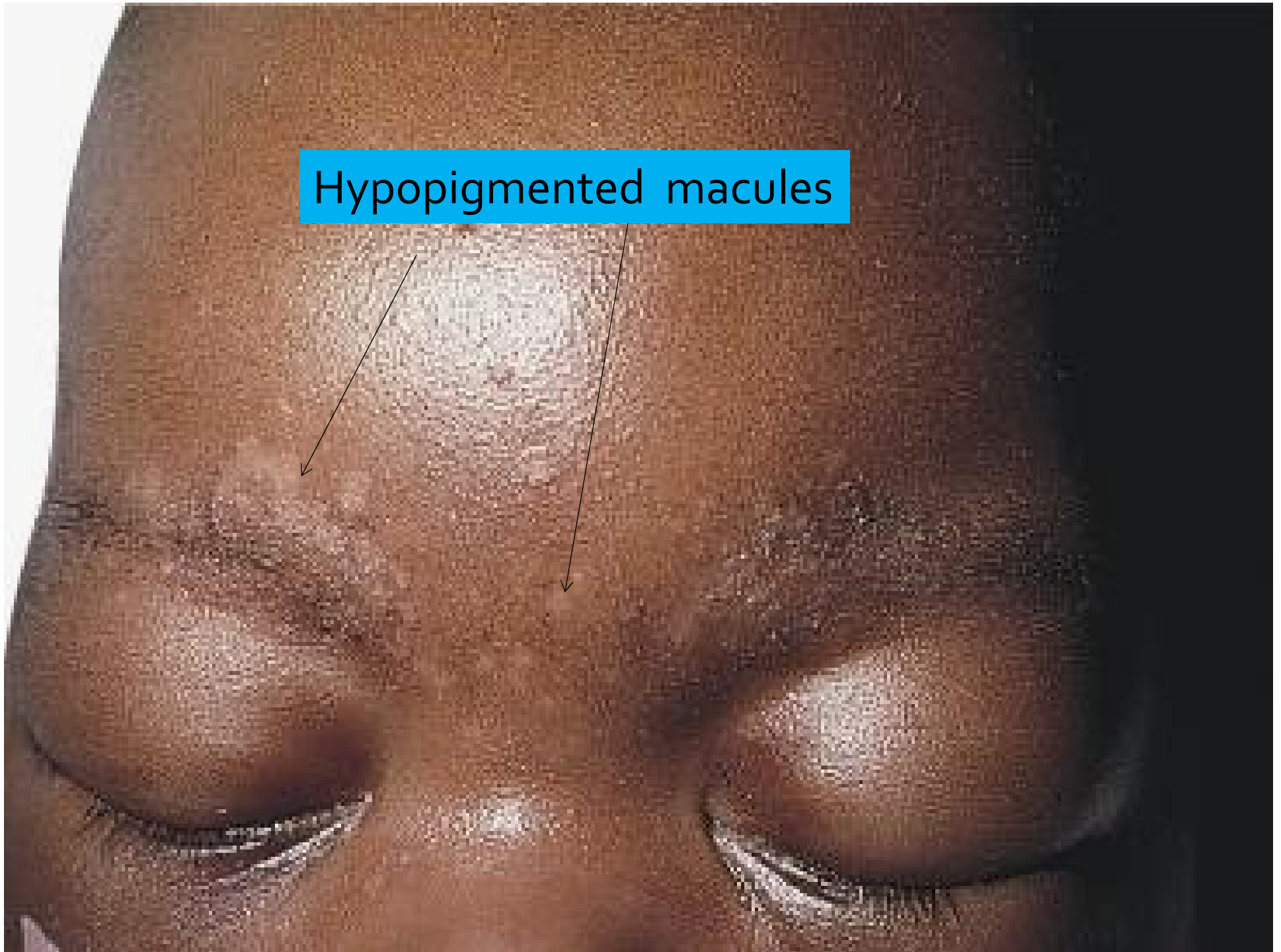
Hyperpigmented macules and patches

This is a close-up photograph of human skin, likely from the back or chest, showing numerous small, dark brown to black spots (macules) and larger, irregularly shaped areas of discoloration (patches). The skin has a warm, reddish-brown tone. Two black arrows originate from a central blue text box and point towards two distinct areas of hyperpigmentation: one pointing towards a cluster of small macules in the upper left, and the other pointing towards a larger, more diffuse patch in the lower right.



Pinkish patches

Hypopigmented macules



KOH Smear



Pityriasis versicolor: Management

- *Zinc pyrithione shampoo 10 mins daily for 1-2 weeks (other antidandruff shampoos)*
- *2% Ketoconazole shampoo 5 mins daily for 3 days (other antifungal shampoos)*
- *Ketoconazole cream*
- *In young adults: Oral azoles (Itraconazole, Fluconazole) may be used for extensive lesions resistant to topicals or for frequent relapsers*
- Note: Oral ketoconazole tabs withdrawn from market because of liver toxicity

Remember:

Not all hypopigmented lesions are "an-an" or pityriasis versicolor

Clue: Hypopigmentation blends into the skin



AD/Pityriasis alba

Clue: Hypopigmentation blends into the skin



AD/Pityriasis alba

Yeasts: Candida

- *Limited to skin and mucous membranes when barrier function is disrupted or compromised*
- *At risk: macerated, damaged, inflamed skin*
- *KOH smear: pseudohyphae with ovoid yeast cells*

Oral Thrush: Recognition

"Thrush": Acute Pseudomembranous Candidiasis

***Clue: white to gray, "cheesy" looking colonies (pseudomembranes)
: gentle removal reveals a raw red base***



THRUSH



THRUSH

Diaper Candidiasis: Recognition

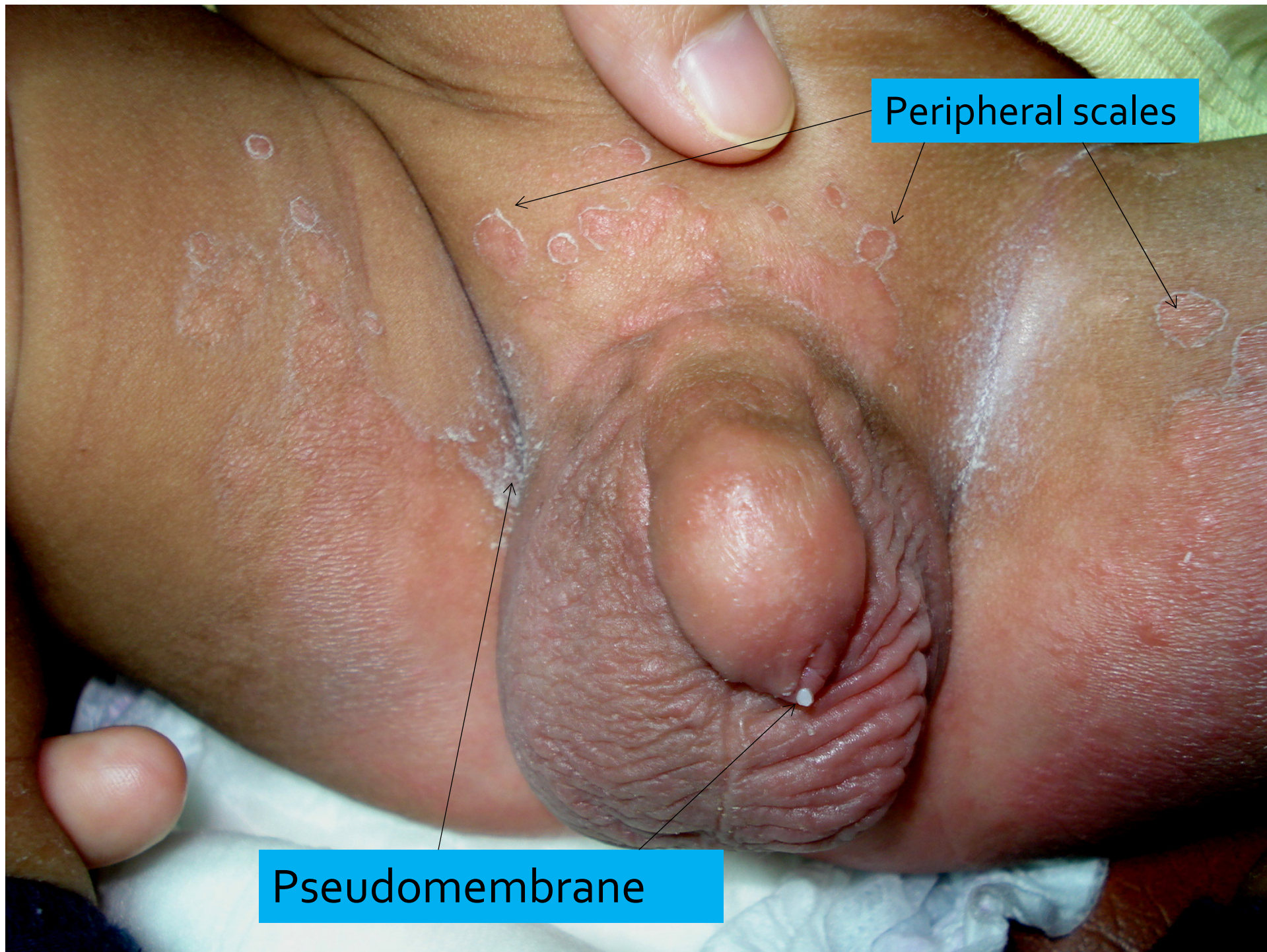
Clues:

*Well demarcated erythema
with peripheral scale*

Satellite papules/pustules

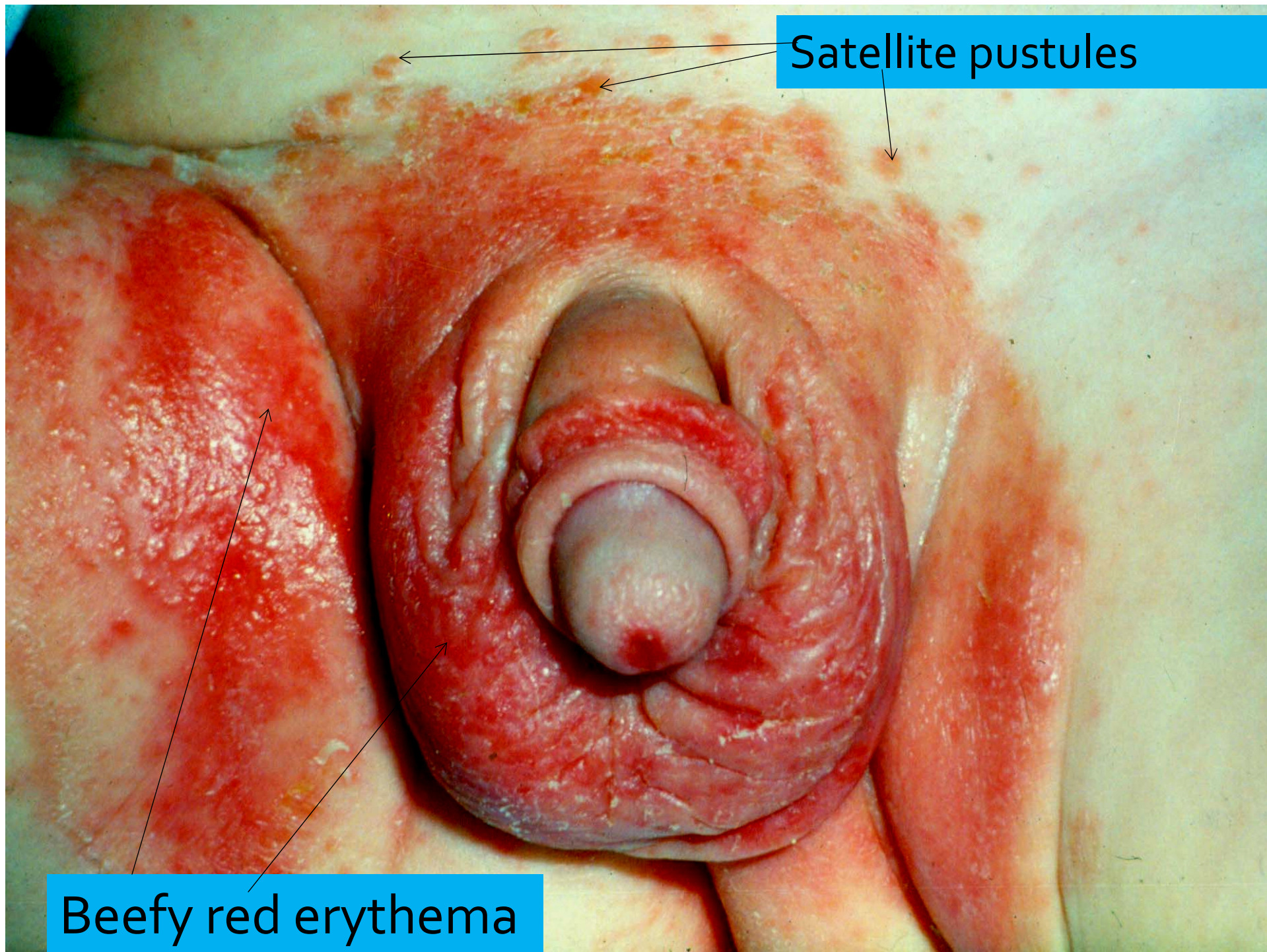
Inguinal creases are involved

"Beefy red" erythema



Peripheral scales

Pseudomembrane



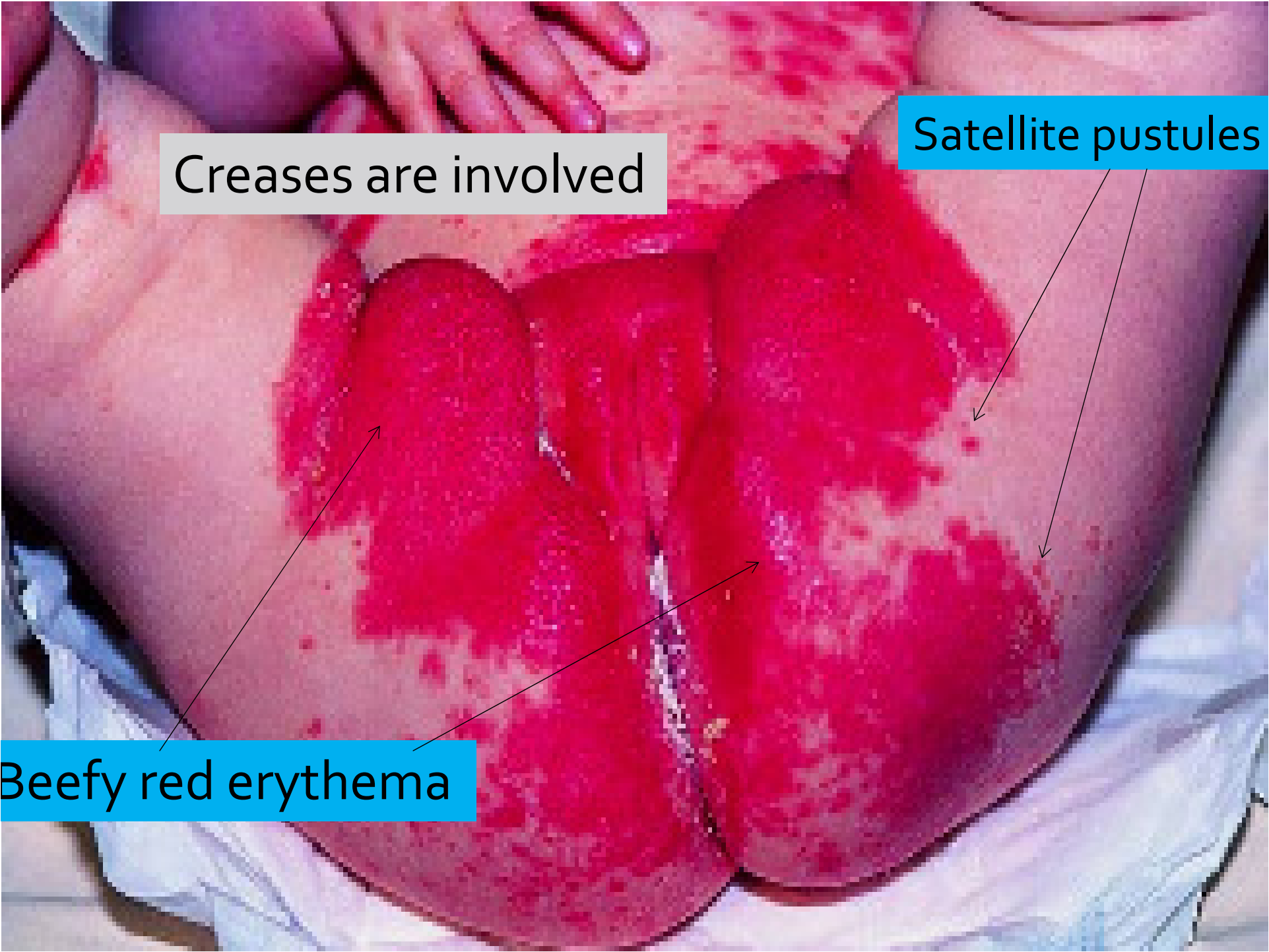
Satellite pustules

Beefy red erythema

Irritant contact diaper dermatitis



Sparing of creases



Creases are involved

Satellite pustules

Beefy red erythema

Diaper Candidiasis: Management

- *Topical anti-candidal agent
(nystatin or an azole preparation) +/-
topical steroid*
- *Once cleared, continue for three more
days*
- *Oral mycostatin or fluconazole*

*Note: Keep area dry. Use barrier creams
e.g. zinc oxide paste*

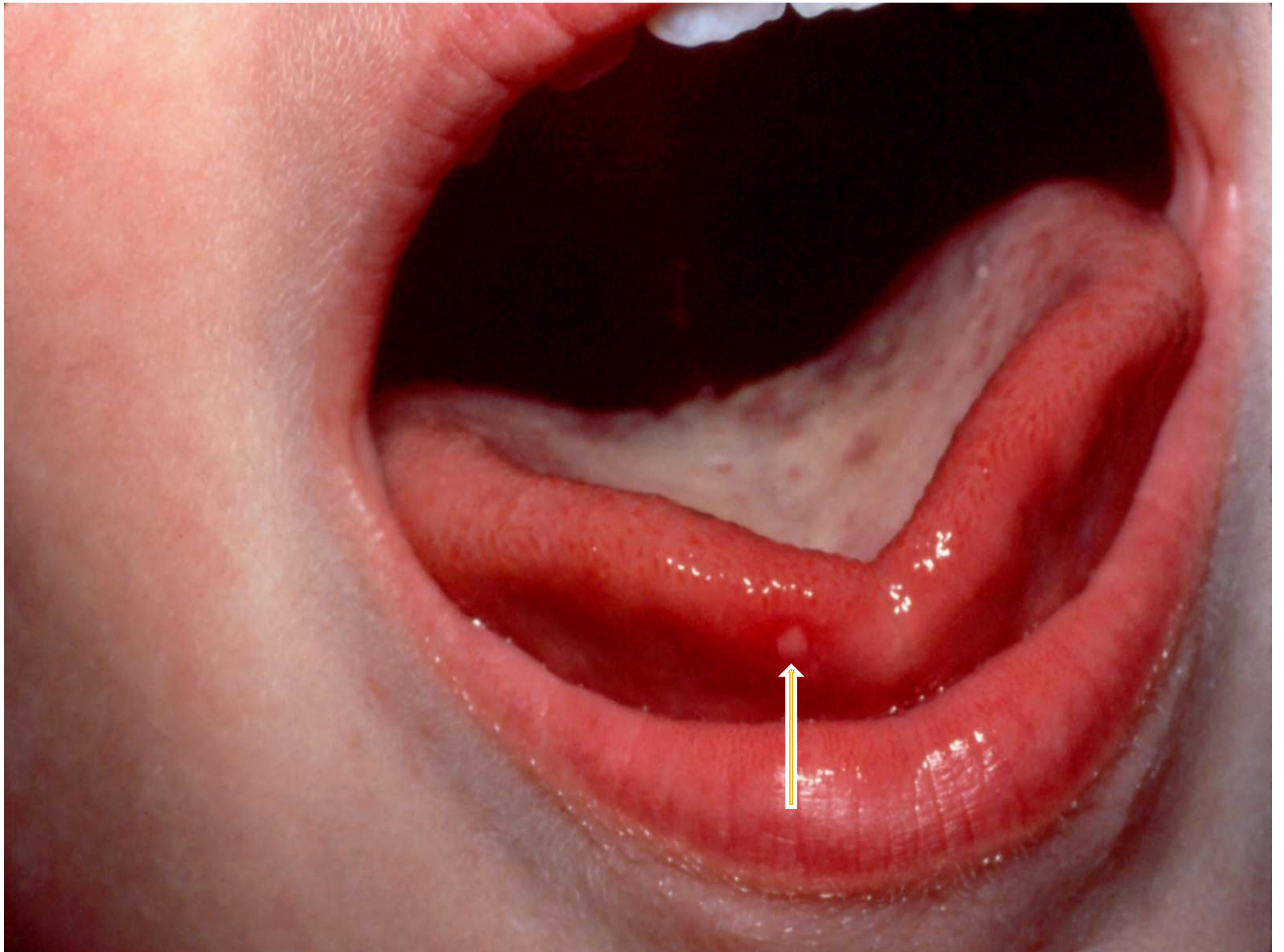
Common Viral Infections

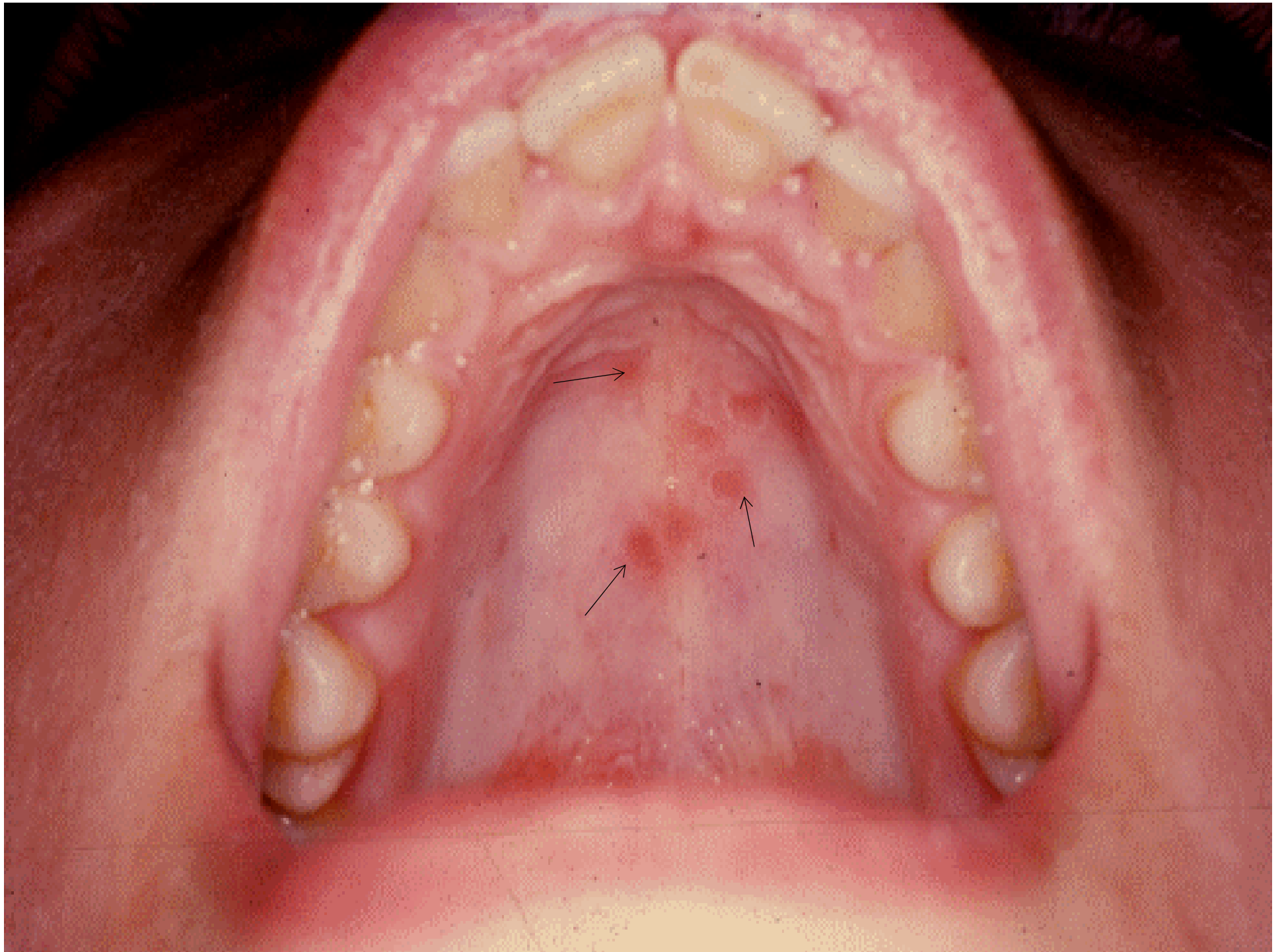
- *Hand Foot and Mouth Disease*
- *Molluscum Contagiosum*
- *Verruca Vulgaris*

Coxsackie A 16 Virus

Recognition: Hand, Foot and Mouth

- *Areas involved: mouth, hands and feet, buttocks (may also be seen on face and extremities)*
- *Rash usually lasts for 2-7 days*
- *(+/-) fever, sore mouth, anorexia, malaise, abdominal pain*









**Shallow grayish ulcer
on erythematous base**

Hand Foot and Mouth Disease

Clues:

Areas involved: mouth, hands and feet, buttocks; may also be seen on face and extremities (elbows, knees)

Rash usually lasts for 2-7 days

(+/-) fever, sore mouth, anorexia, malaise, abdominal pain

Management: Symptomatic



What is this?????????



MOLLUSCUM CONTAGIOSUM!!!!!!!!!!

CLUE:Flesh colored umbilicated papules




Flesh colored papules

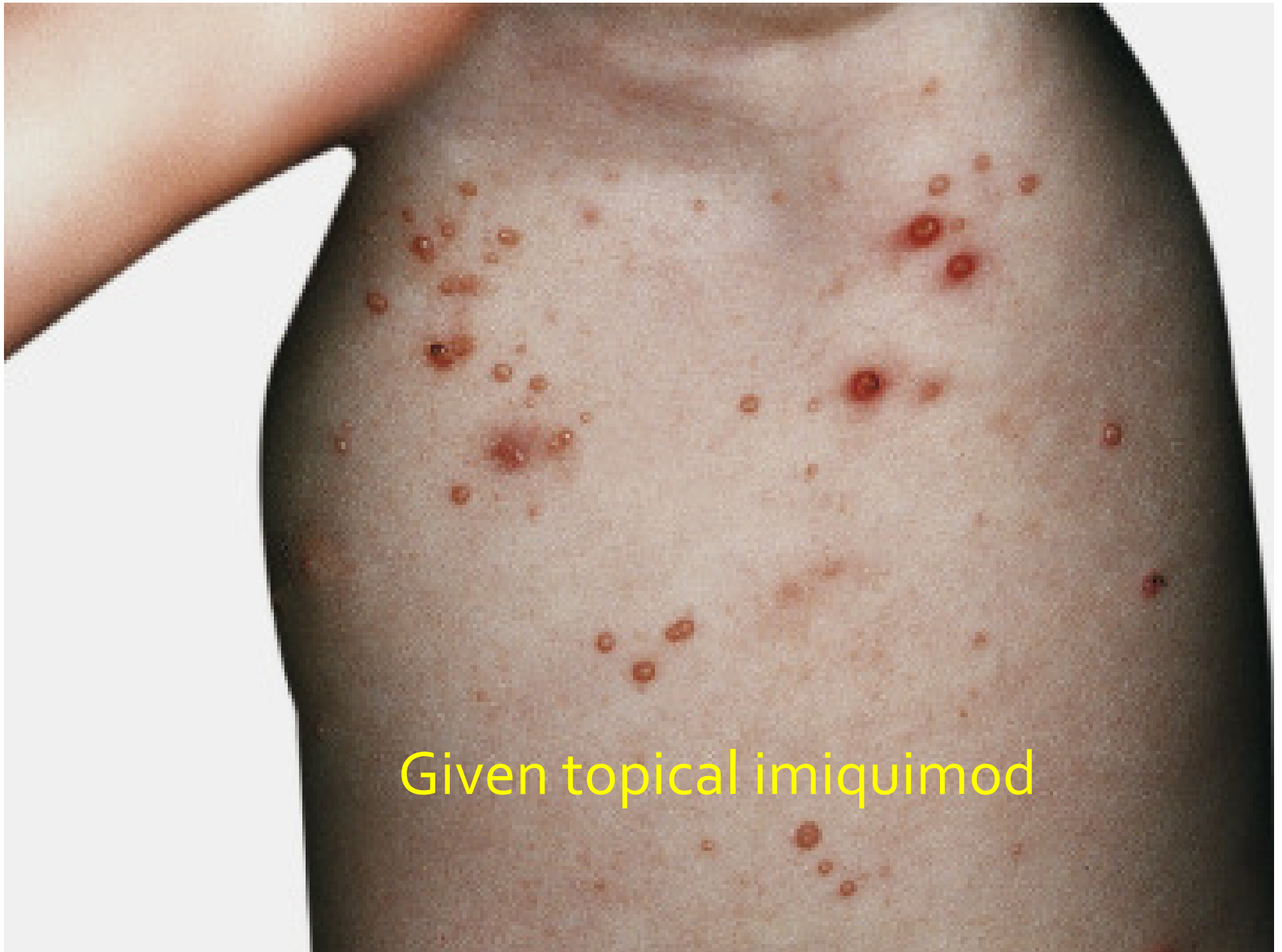


Central umbilication

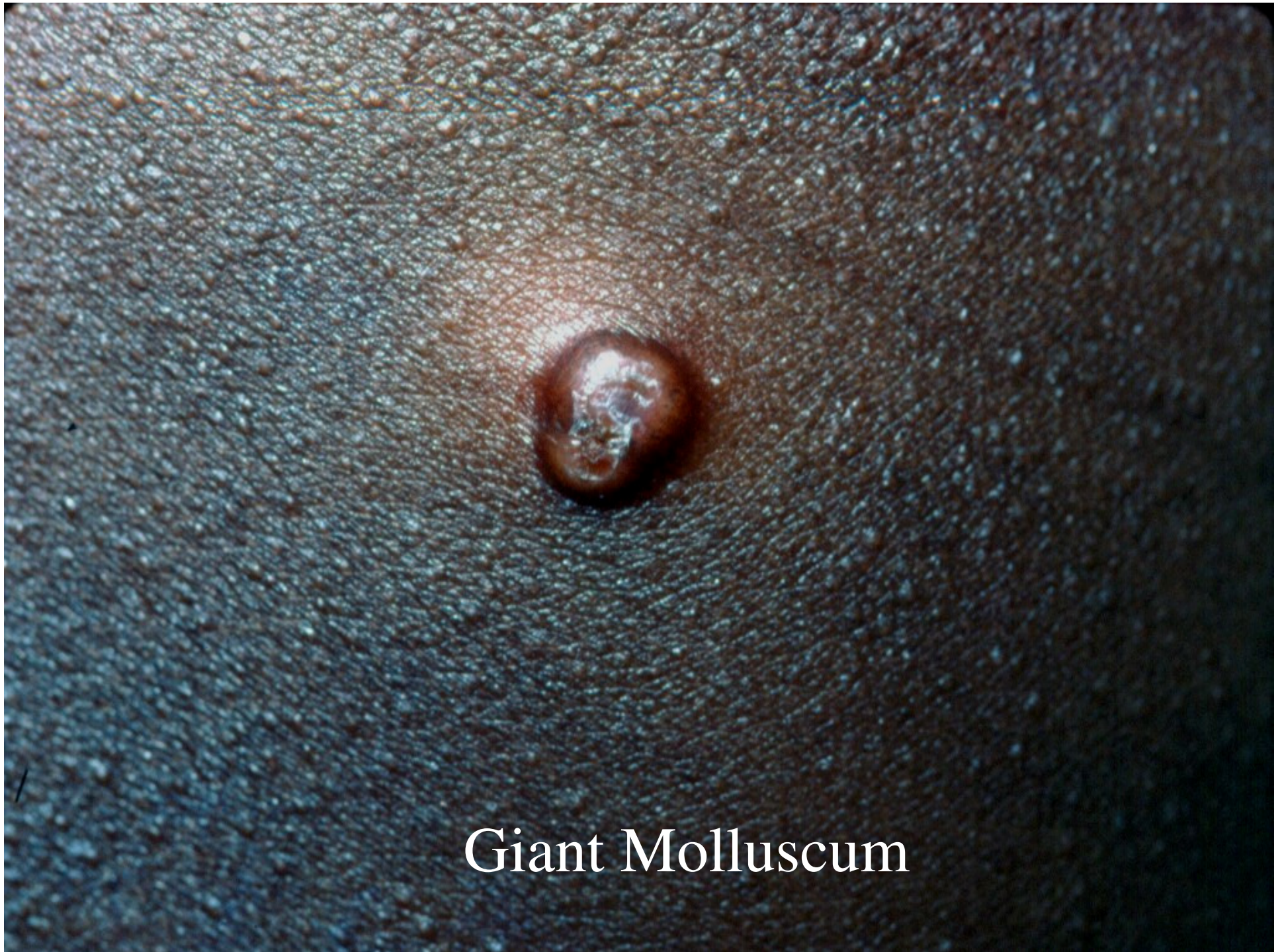




Given topical steroids



Given topical imiquimod



Giant Molluscum

Molluscum contagiosum

- *Flesh colored to pinkish to pearly white discrete papules with central umbilication*
- *Most common areas: axillae, lateral trunk, lower abdomen, thighs, face*
- *May have a dermatitis in 10% of cases*
- *Etiologic agent: Molluscipox virus*

Molluscum contagiosum

- *"Benign neglect": spontaneous resolution in 6-9 months*
- *May have a more persistent, progressive course*

Treatment options:

- 1. Curettage*
- 2. topical Cantharidin*
- 3. Tretinoin cream*
- 4. Imiquimod cream*

Molluscum contagiosum: What can the Pediatrician do?

- ***Recognize***
- ***Refer***
- ***Please do not give topical steroids***
- ***May try:***
 - 1. Tretinoin or Imiquimod***
 - 2. nail polish??!!***



VERRUCA VULGARIS



Verruca Vulgaris

Verruca: rough, hyperkeratotic

Vulgaris: common

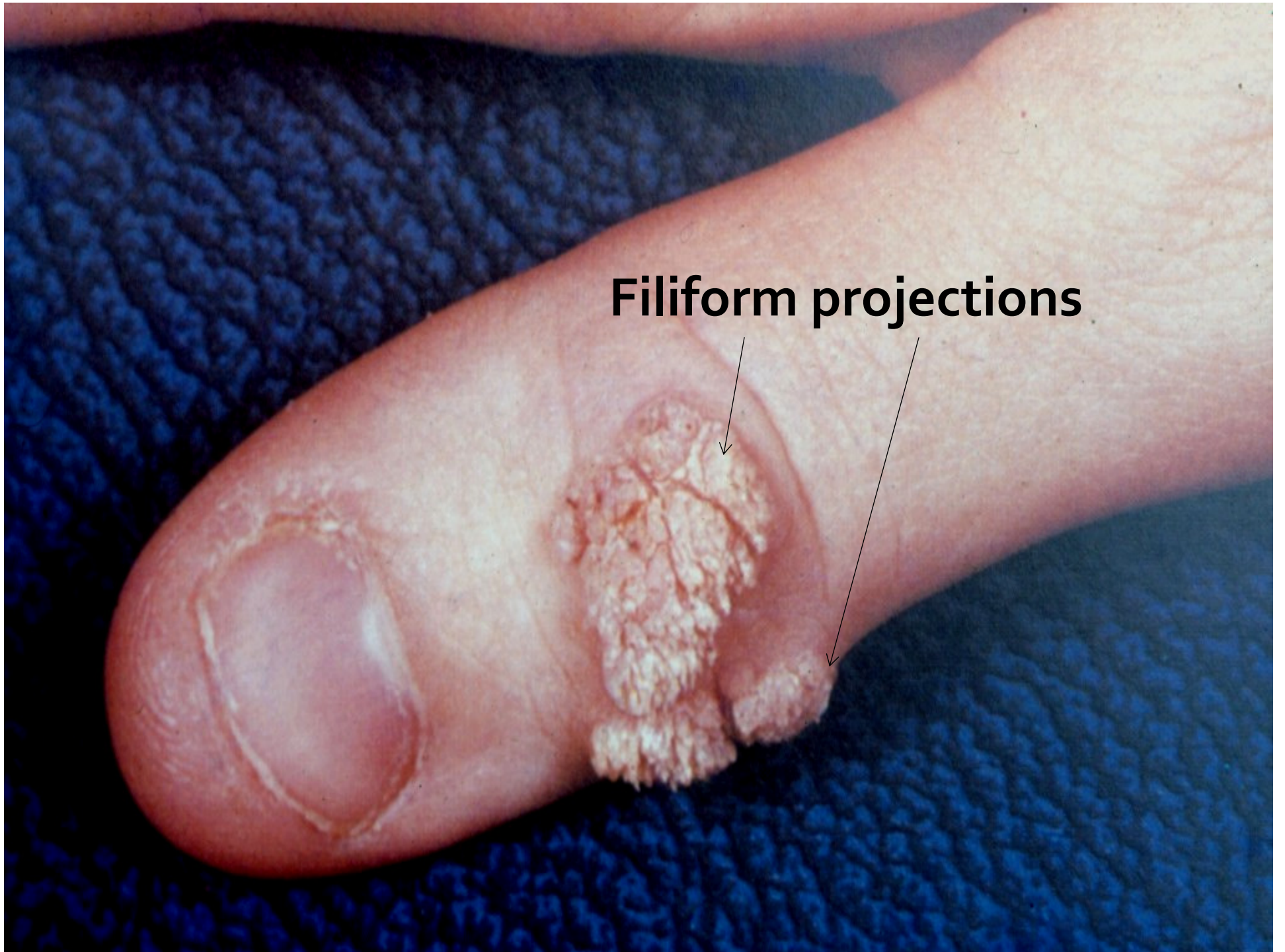
*Etiologic Agent: Human Papilloma
Virus (HPV) Types 1, 2, 4, 7*

Verruca Vulgaris: Clues

Look for:

*Filiform (fingerlike) or
Verrucous projections*

Filiform projections



Verruca Vulgaris: Clues

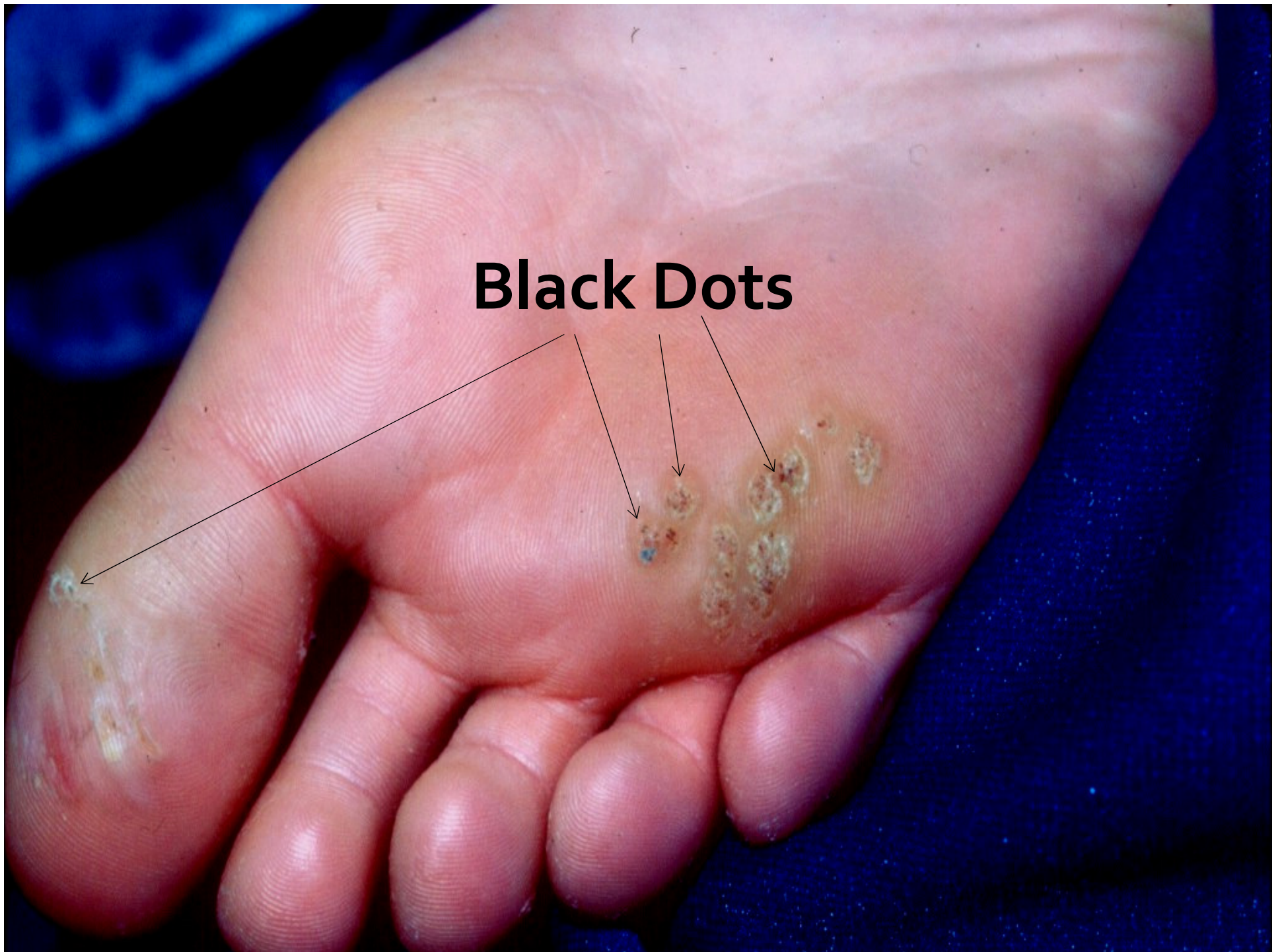
Look for:

THROMBOSED BLOOD VESSELS!
(Black dots)

BLACK DOTS



Black Dots



Verruca vulgaris: Management

Spontaneous resolution in 40% of cases after 2 years

If persistent or multiplying , strongly consider intervention (Individualize therapy)

- 1. Cryosurgery*
- 2. Dessication and curettage*
- 3. Chemical destruction: cantharone plus, 40% salicylic acid (Duofilm)*

DERMATOLOGICAL INFECTIONS

FUNGAL

DERMATOPHYTOSIS: Ringworms

YEAST: TINEA VERSICOLOR

CANDIDA

VIRAL

HAND FOOT and MOUTH DISEASE

MOLLUSCUM CONTAGIOSUM

VERRUCA VULGARIS

WHAT IS WRONG
WITH THE
PHILIPPINES?????



A photograph of a sunset or sunrise over a body of water. The sky is a mix of dark blue, purple, and orange. Three birds are in flight, their silhouettes arranged to form a smiley face. The bottom of the image shows dark silhouettes of trees and a body of water.

THANK YOU FOR LISTENING