Tinea infections

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Outline

- Current situation of tinea infections in Sri Lanka
- Types of tinea infections
- Diagnosis of tinea infections
- Treatment of tinea infections

TINEA / RINGWORM (DERMATOPHYTOSIS)

- Infection of the stratum corneum of epidermis, hair or nails caused by dermatophytes
- More than 30 species of common and rare contagious filamentous fungi
- Three genera : Microsporum, Trichophyton, Epidermophyton

- Emergence of *Trichophyton indotineae*

Current situation of tinea infection in Sri Lanka

- Significant increase in the incidence of Tinea infections over the past several years, accompanied by challenges such as:

➢ Extensive involvement across various age groups

➢ Occurrence in several family members

➢ Poor response to conventional antifungal treatments

➢ The emergence of strains with resistance to standard therapies

Name	Hospital	Total Cases for past 03 months
Dr Malathi Pushparani	**DGH Embilipitiya**	**255**
Dr Sriyani Samaraweera	**LRH- one unit**	**140**
Dr Upul Meegama	**BH Nikaweratiya**	**232**
Dr Binari Wijenayake	**TH Karapitiya**	**260**
Dr Chandani Udagedara	**TH Kandy**	**392**
Dr Sandeepa Ekanayake	**BH Gampola**	**83**
Dr V G Abeywickrama	**TH Ratnapura**	**213**
Dr Surammika Eriyagama	**DGH Nawalapitiya**	**62**
Dr Harini Wijayawardhana	**BH Mawanella**	**95**
Dr Dananja Ariyawansa	**SJGH**	**10-20%**
Dr Hiromal De Silva	**DGH Matara**	**30%**
Dr Mahil	**BH Kalmunai**	**565**
Dr Poorna Weerasinghe	**DGH Awissawella**	**303**
Dr F Srisaravanapavananthan	**TH Jaffna**	**295**
Dr S Sukumaran	**DGH Chilaw**	**382**
Dr Subani Perera	**BH Marawila**	**68**
Dr Priyanka Seneviwickrama	**Sirimavo B H**	**150**
Dr HASJ Perera	**BH Karawanella**	**193**
Dr Pamoda Kamaladasa	DGH Puttalam	37 for 5 days
Dr Indira Kahawita, Dr Janaka Akarawita	NHSL	59/301(19.6%)- one unit

Multicentric retrospective study on tinea infection- 2019

- The study included 796 patients
- 191 (24%) had symptoms for more than 3 months at presentation
- 519 patients (65.2%) had multiple-site involvement
- 503 (63.2%) had evidence of prior use of topical steroids
- Skin scrapings were positive for fungal elements in the direct smears of 659 patients (82.8%),

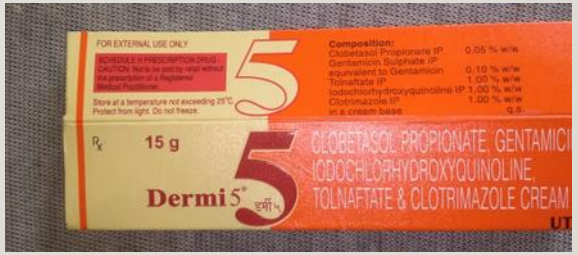
Multicentric retrospective study on tinea infection- 2019

- The predominant dermatophyte isolated : Trichophyton mentagrophytes (65.6%).
- Partial responders after 10 weeks of treatment and recurrences after complete clearance were significantly greater in the group that used topical steroids before presentation (P , 0.001).
- **Factors for inadequate therapeutic response in dermatophytosis**

➢ Steroid misuse

➢ The shift of the predominant fungal species to T. mentagrophytes/ *Trichophyton indotineae*

Several combination products that are still in the market

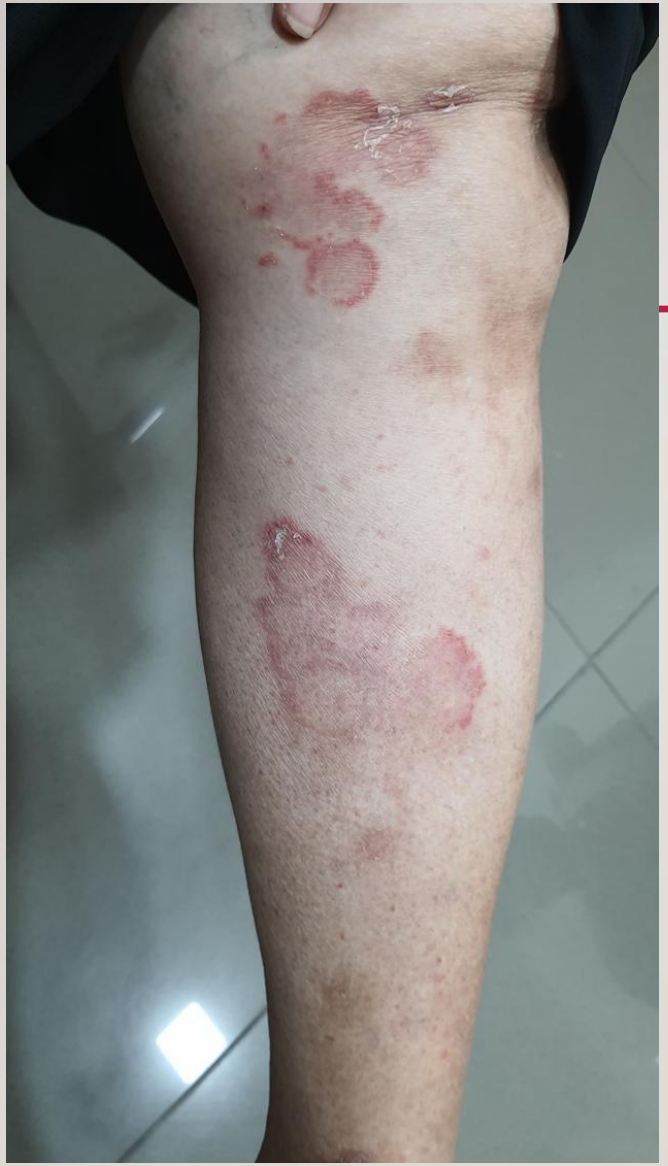


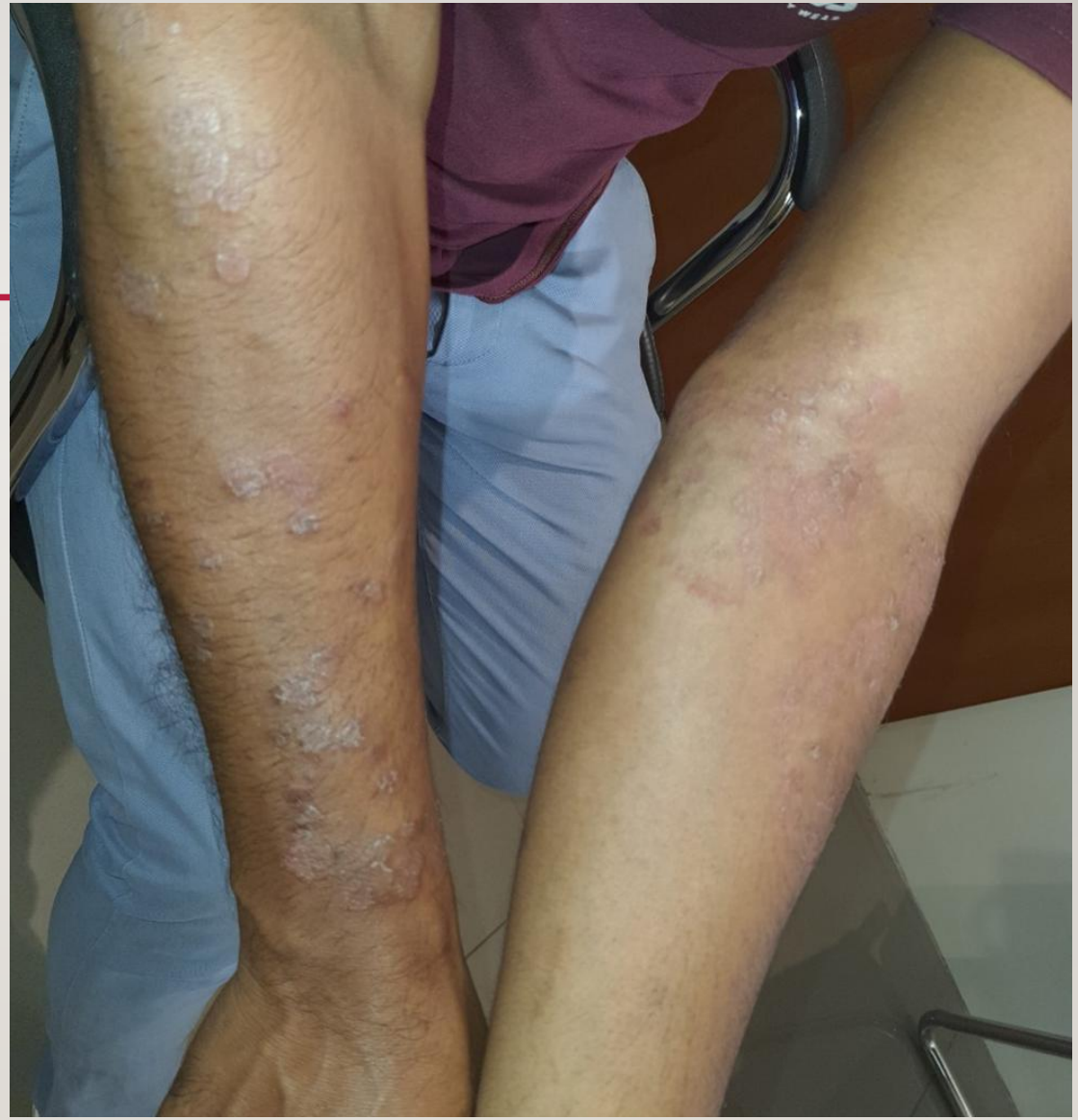
TYPES OF TINEA INFECTIONS

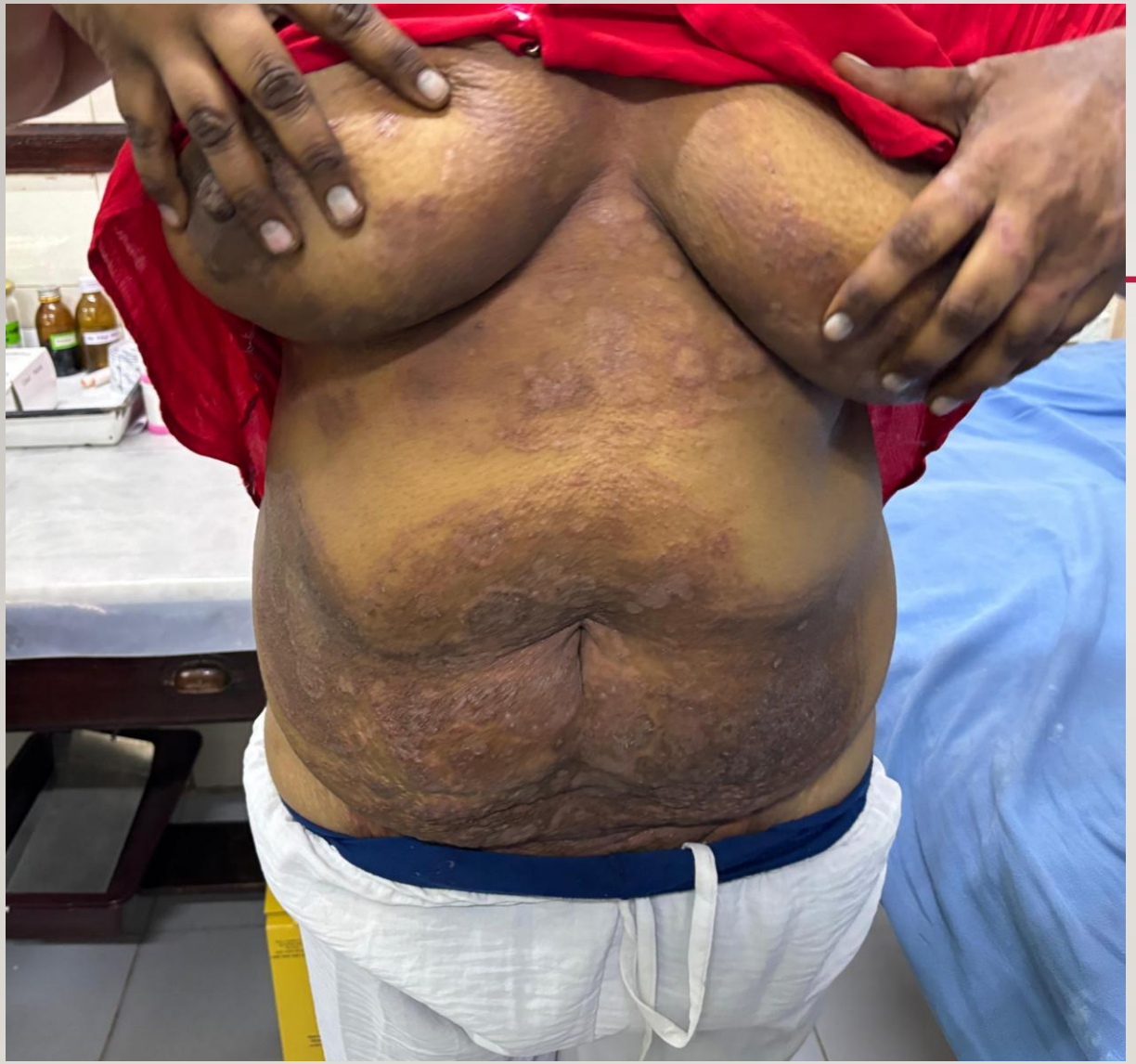
- Tinea corporis
- Tinea cruris
- Tinea pedis
- Tinea mannum
- Tinea capitis
- Tinea unguium
- Tinea incognito

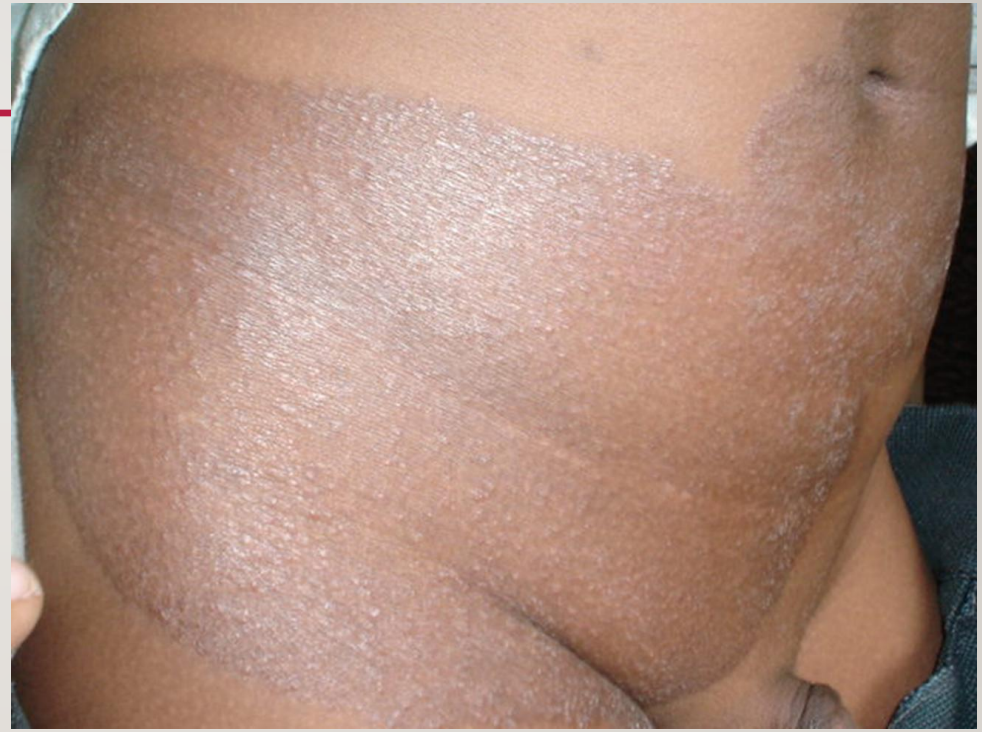
TINEA CORPORIS

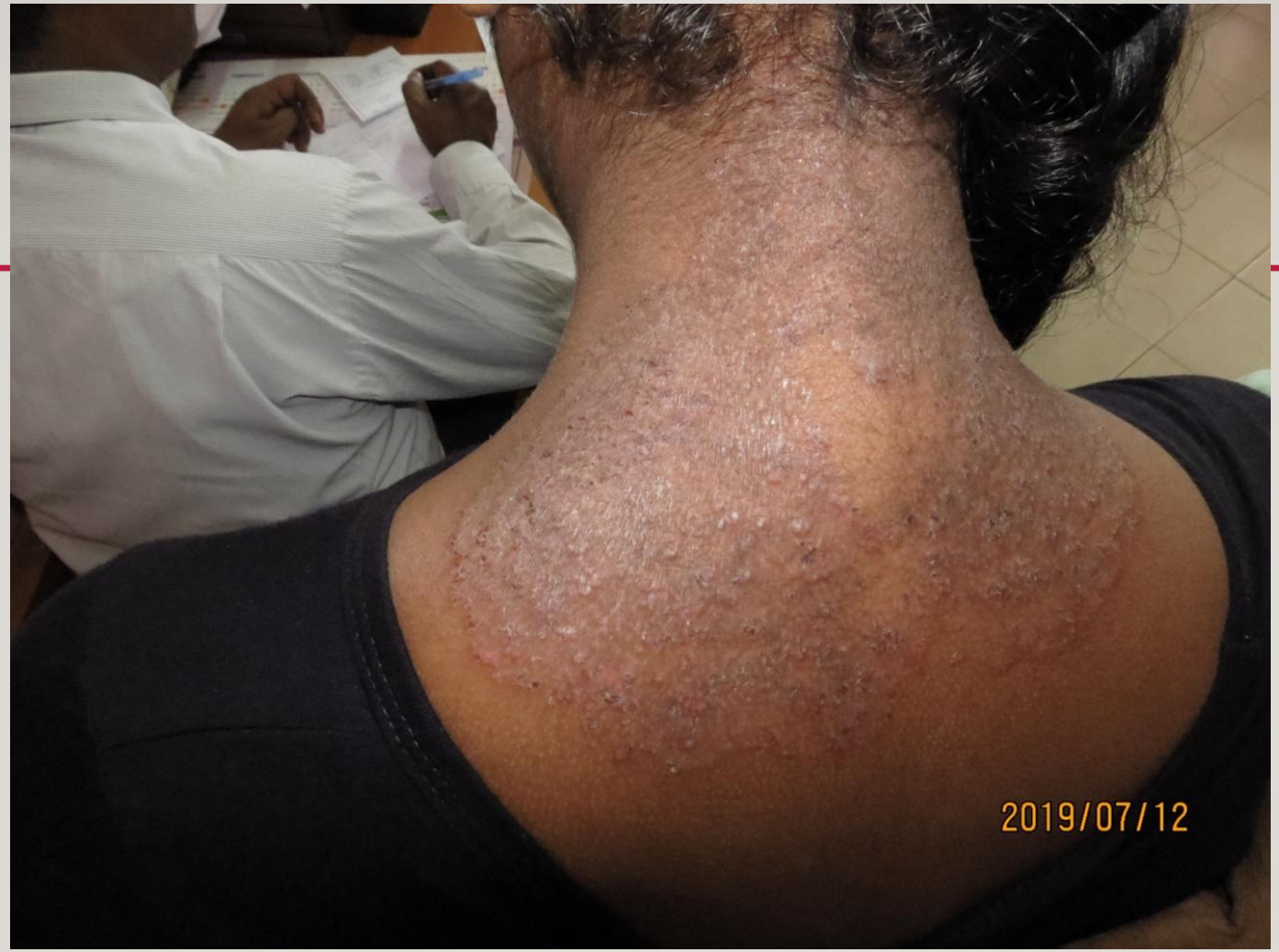
- This is tinea of skin of the body or limbs
- Pruritic , round, or annular, well marginated plaques with erythema and scaling most pronounced at the periphery are typical
- A few small vesicles and pustules may be seen within them
- The lesions expanding slowly and healing in the center leaves a typical ring like pattern.







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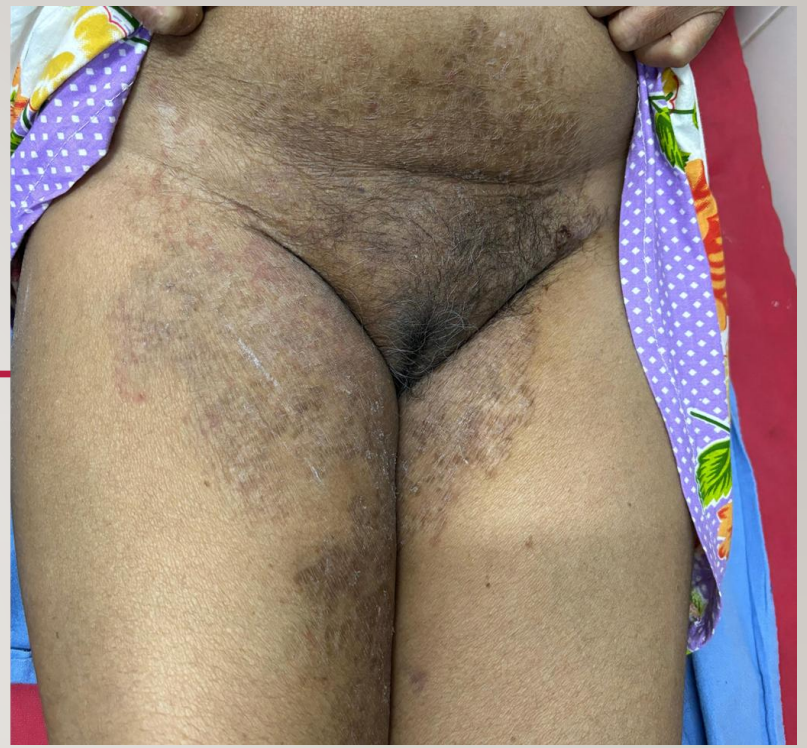
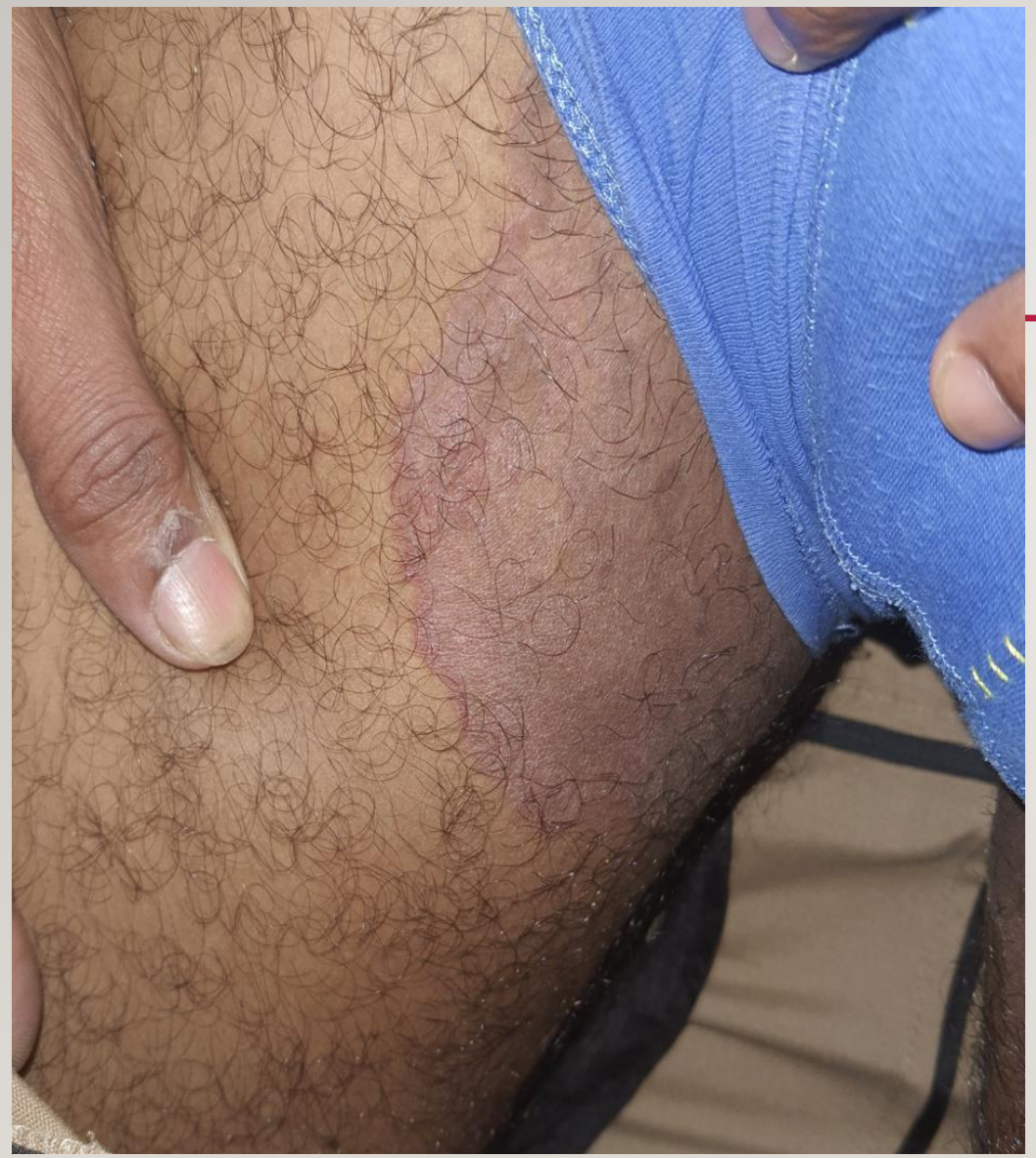
TINEA CRURIS



- This is ringworm of the groins
- This occurs mostly in young men.
- Itching is the predominant feature.
- Well-defined itchy red scaling patches occur asymmetrically on the groins which gradually extend down the thigh and on to the scrotum unless treated.
- Differential diagnosis is seborrhoeic dermatitis or intertrigo where the rash is symmetrical and does not have a well-defined border



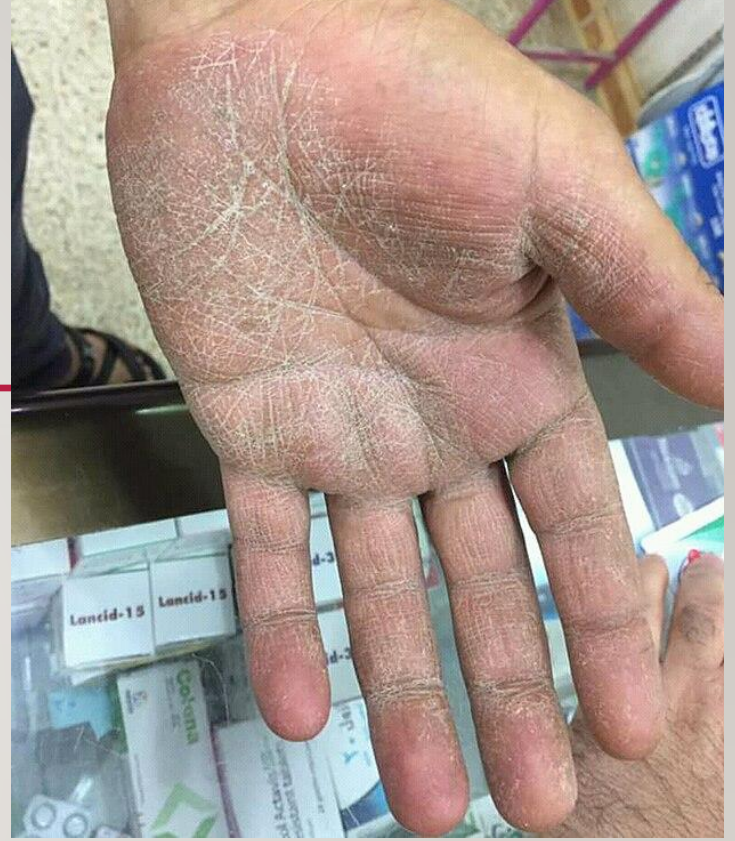

01.03.2019

TINEA PEDIS

- Athlete's foot:
- Common in young men who often contracts it from changing rooms/ wash rooms
- Persistent and long history. Wearing of occlusive, tight shoes encourages relapses.

1. Vesicular – vesicles on the sides of the feet
2. Plantar - on soles
3. Interdigital – Particularly between 4th and 5th toes

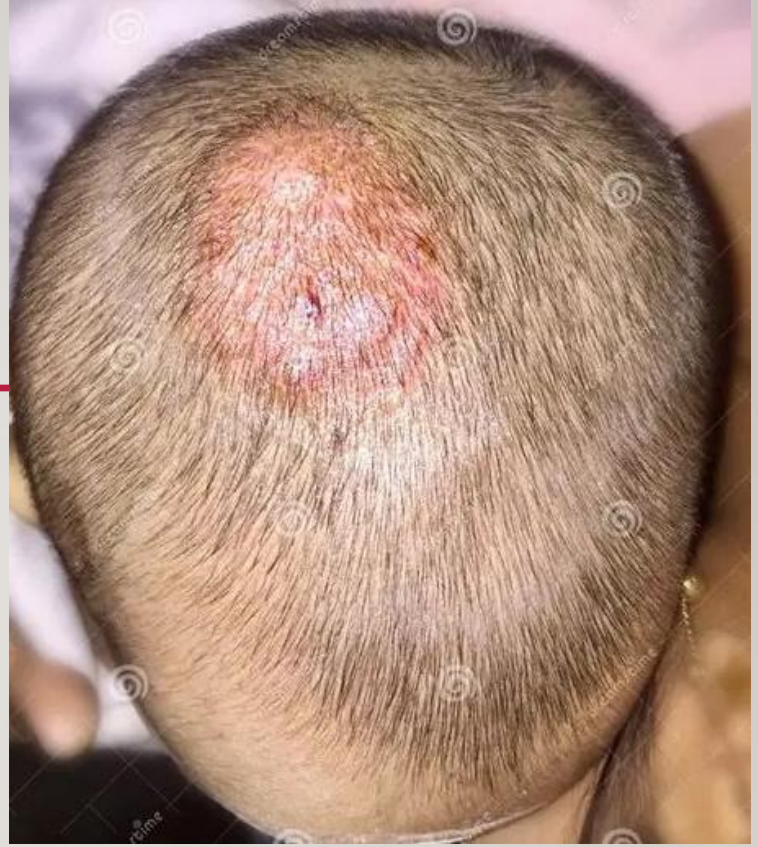
TINEA MANNUM



- Tinea infection of the palmar skin.
- Infections begin under rings and wrist watches,

  and where there is maceration between the fingers.
- Diffuse hyperkeratosis of the palms and the fingers is the commonest pattern and it is unilateral in half the cases.
- The accentuation of the flexural creases is a characteristic feature.

TINEA CAPITIS

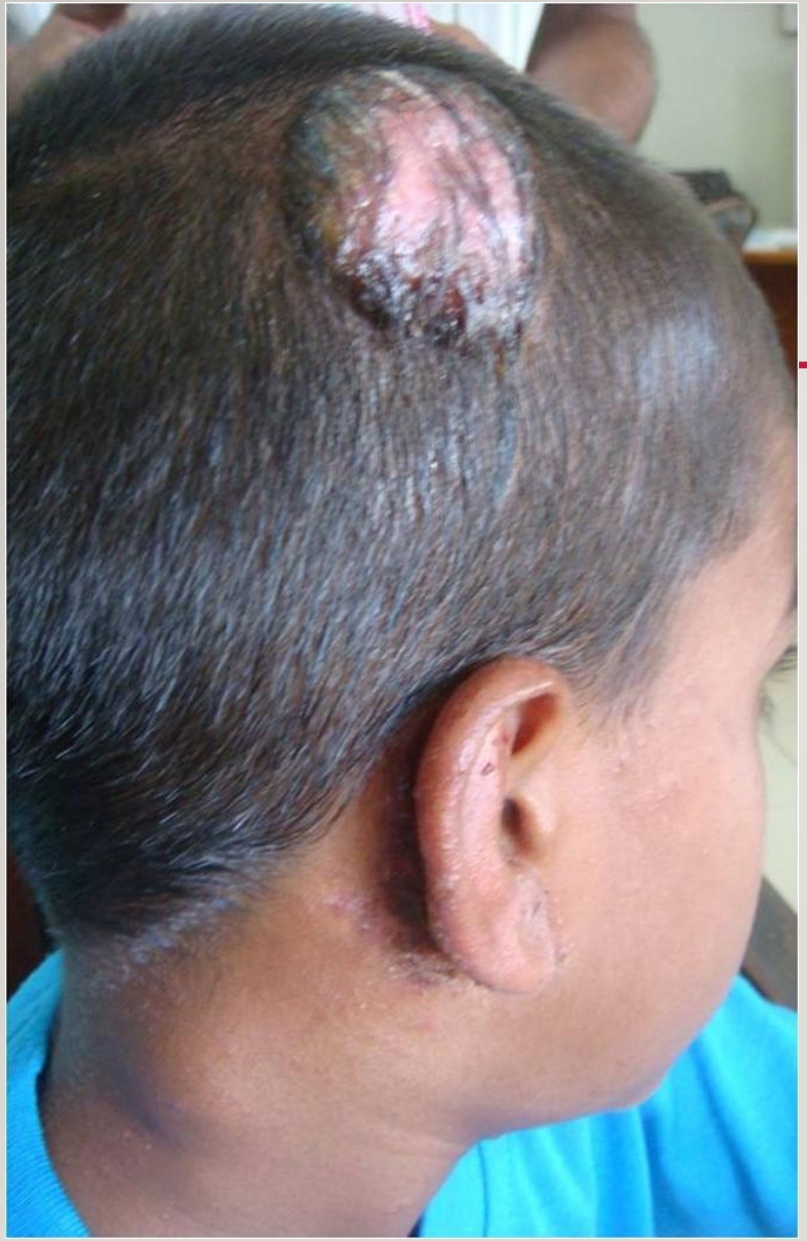


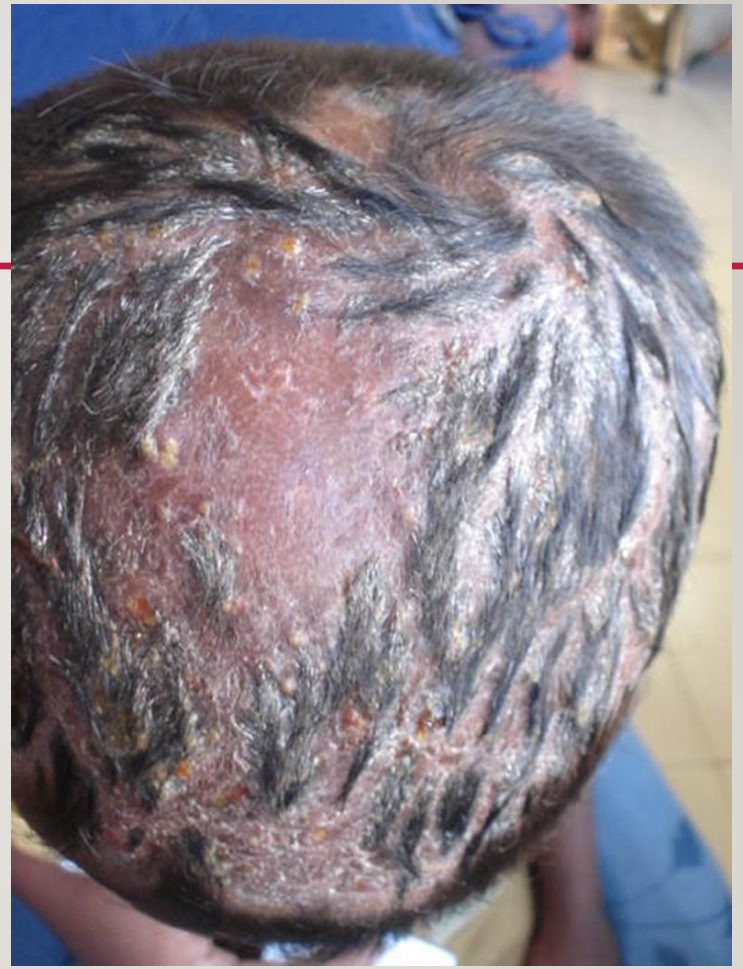
- Predominantly seen in children, with several basic clinical pictures.

➢ Ectothrix type- Patches of partial alopecia with numerous dull grey broken off hairs, fine scale, a well-defined margin and minimal inflammation

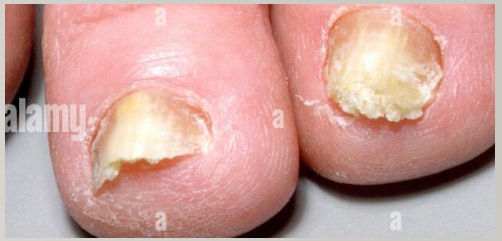
➢ Endothrix type – A relatively non inflammatory type of patchy baldness. Patches are usually multiple. Sometimes diffuse alopecia is seen.

➢ Kerion- Painful inflammatory mass , any hairs remaining are loose. There may be pus and sinus formation , crusting and matting of adjacent hairs





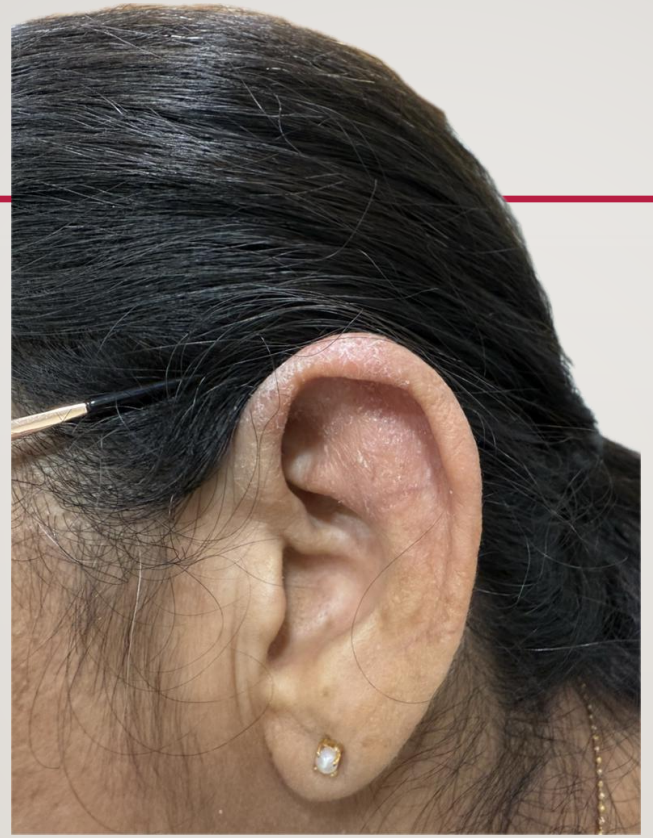
TINEA UNGUIUM/ ONYCHOMYCOSIS

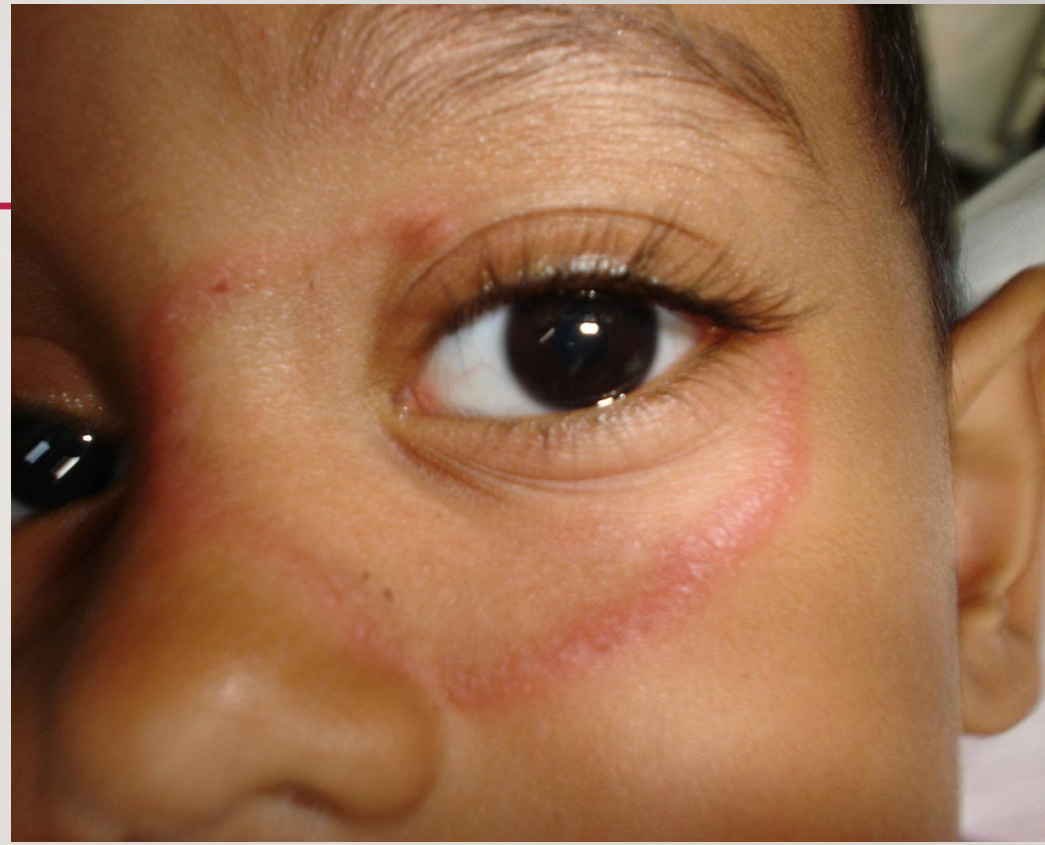


- This is tinea infection of the nail.
- It is usually associated with tinea pedis.
- The initial changes occur at the free edge of the nail, which becomes yellow and crumbly.
- Subungual hyperkeratosis, separation of the nail from its bed and thickening may follow.

TINEA FACEI

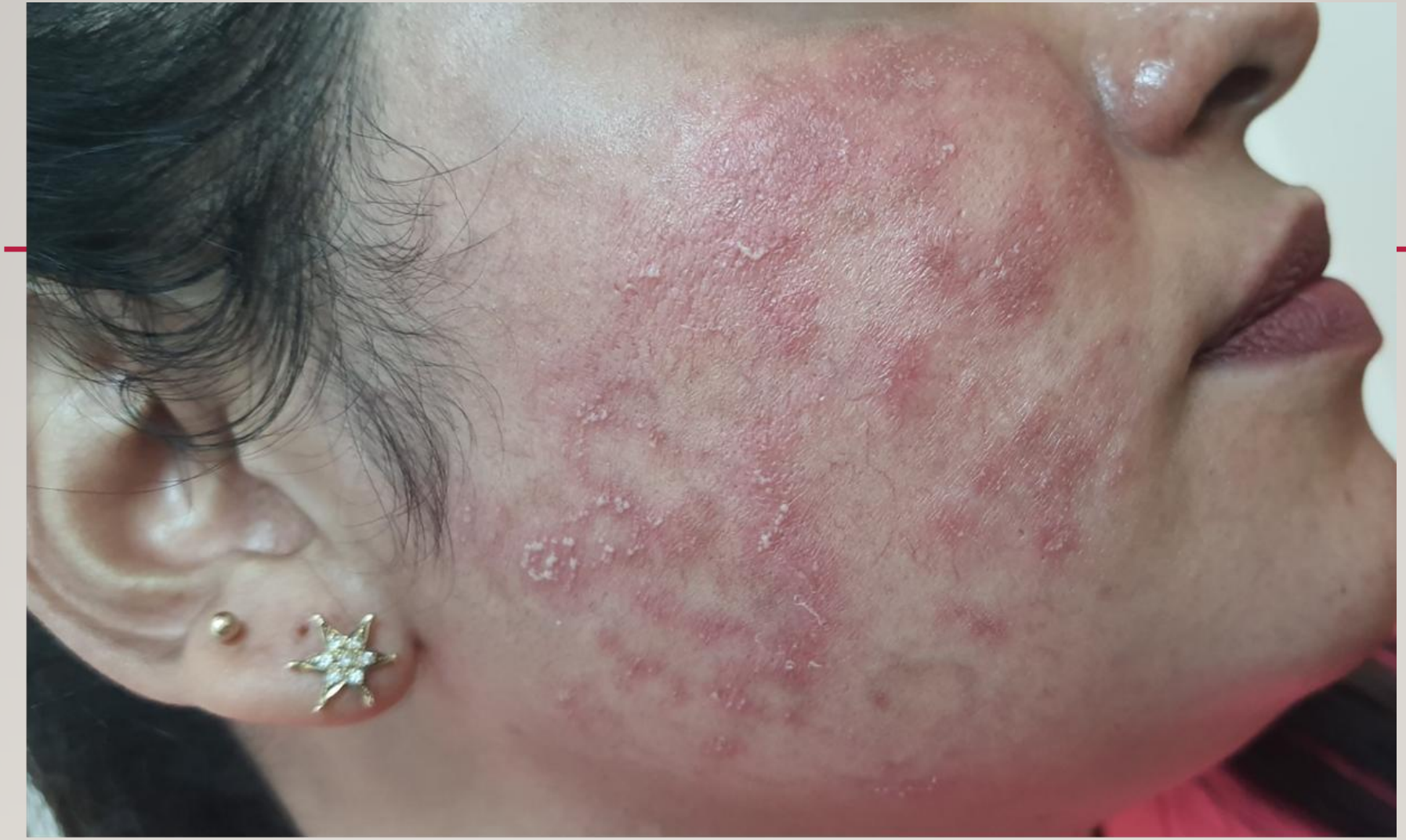
- Infection of the face with dermatophyte fungus
- Facial skin may be infected by direct inoculation from an external source or by secondary spread from pre-existing tinea of another body site.
- Lesions are commonly annular or circinate with induration and raised margin.
- Papular lesions and flat patches of erythema also occur.





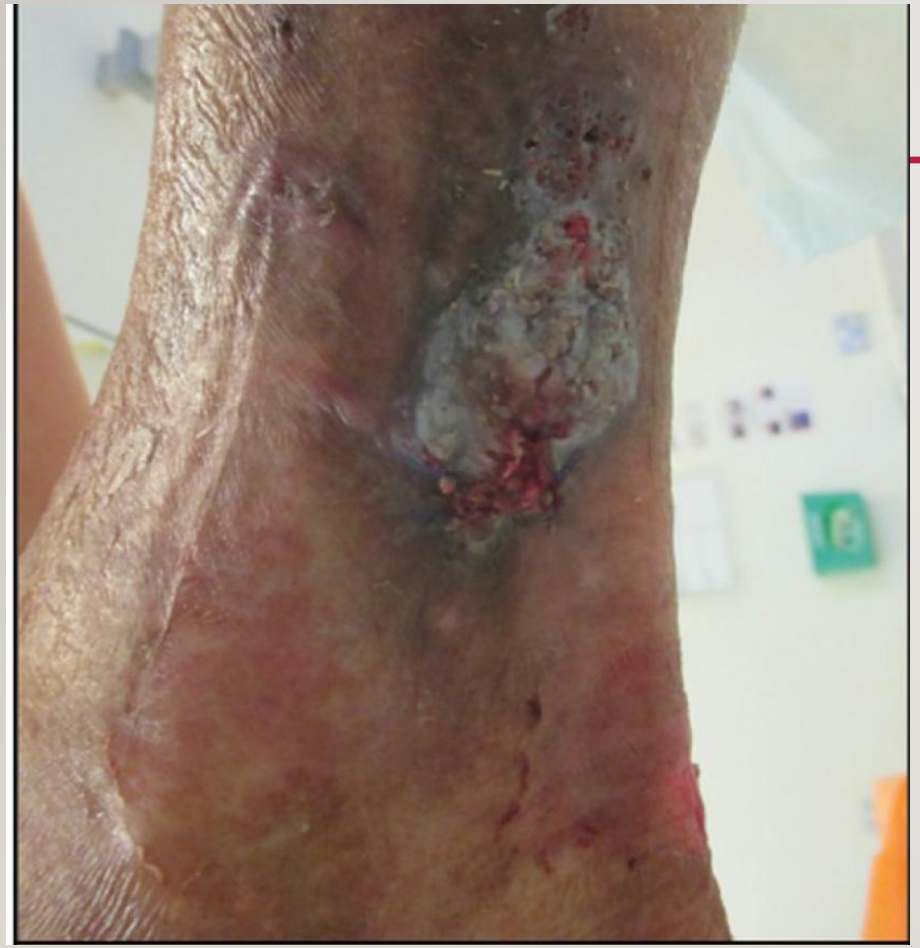
TINEA INCOGNITO

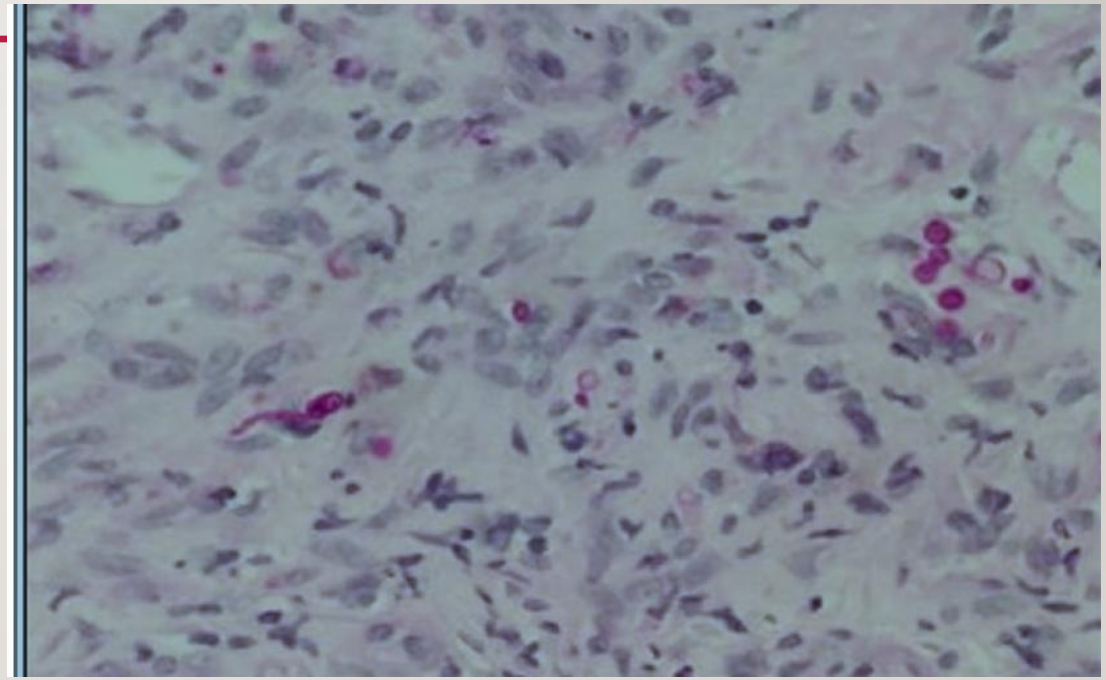
- This is the ringworm infections modified by corticosteroids.
- The usual sites are groins, lower legs, face and hands.
- The raised margin is diminished, scaling is lost and the inflammation is reduced to a few unremarkable nodules and pustules.



INVASIVE DERMATOPHYTOSIS

- Defined by dermal invasion presenting as 2 clinical entities:
- Majocchi's granuloma is limited to perifollicular granulomatous inflammation (presenting as nodules or papules),
- Deep dermatophytosis extends beyond the perifollicular area (with infiltrated, often painful, plaques and nodules)





Diagnosis of Tinea

- Dermatophyte infection is a clinical diagnosis.
- However, in doubtful cases, microscopy of 10% KOH mount can be done.
- Skin scrapes should be collected from the edge of the lesion and examined at site or transported in a strong black paper to a reference laboratory.
- Fungal cultures and anti-fungal sensitivity may be done in recalcitrant cases.

SPECIMEN COLLECTION FOR FUNGAL TESTING

- Scrapings of scale, best taken from the leading edge of the rash after the skin has been cleaned with alcohol
- Skin stripped off with adhesive tape, which is then stuck on a glass slide
- Hair which has been pulled out from the roots
- Brushings from an area of scaling in the scalp
- Nail clippings or skin scraped from under a nail

Treatment of Tinea

- Naïve tinea infection with a single patch, topicals alone.
- In addition, the elderly, the first trimester of pregnancy, severe liver and renal disease are other situations where topical antifungals are used alone.
- Azoles are preferred as the first line topical applications.
- Use a topical antifungal of a different class from the oral antifungal drug that is being used in the management of the patient.

Treatment of Tinea

- Topical antifungals should be applied 2 cm beyond the active edge : start applying from the margins of the lesion and gradually move to the center.
- Should be used as a thin layer in skin creases and the areas prone to sweat to avoid any irritation.
- Changing the class of topical antifungal is suitable if the patient notices irritation.
- Use the topical antifungals one month past the clinical resolution.

Treatment of Tinea - Topical Treatment

- Miconazole nitrate 2%cream
- Terbinafine1% cream
- Clotrimazole 1% cream
- Ketoconazole 2% cream
- Amorolfine Hydrochloride 0.25%cream
- Ciclopirox Olamine 1% cream
- Luliconazole 1% Cream

Oral antifungals

- Griseofulvin 500mg
- Itraconazole 100mg
- Terbinafine 250/125mg
- Fluconazole 150/50mg

Treatment of Tinea

- With the emergence of the new species Trichopyton indotineae, higher rate of resistance to terbinafine is reported. However, in some clinical studies it is shown that this mycological resistance can be overcome by longer durations and higher doses of the drug.
- Increasing resistance is reported for fluconazole globally. Hence, it is recommended to use fluconazole only when other oral anti-fungals are contraindicated. The weekly 150 mg pulse dose of oral Fluconazole is strongly discouraged. In instances where fluconazole is indicated 50-100mg per day until clinical cure can be given.

Treatment of Tinea

- Supportive therapy: Whitfield ointment, topical retinoids and salicylic acid preparations may have a place in the management but their use is often limited due to skin irritation.
- It is preferable to continue oral antifungal drugs 2 weeks past clinical cure to minimize relapses.
- Checking the liver transaminases at 4 weeks is recommended.

PREGNANCY

- Topical Azoles are safe to use during pregnancy. Terbinafine, ciclopirox and amorolfine are pregnancy Category B and can be used safely.
- Terbinafine is the only oral drug (Category B) that may be used during pregnancy, except in 1st trimester. Still the safety data are lacking for this.

LACTATION

- Any topical agent can be used safely. Terbinafine and griseofulvin should be avoided. Fluconazole is safer (Risk III L2) than itraconazole (Risk IV L2).

LIVER DYSFUNCTION

- Any topical agent can be used safely. Fluconazole with dose adjustment can be used. However, liver transaminases should be monitored closely. Terbinafine, griseofulvin and itraconazole should be avoided.

Recommendations for the Management of Dermatophyte Infections in Glabrous Skin

by

Fungal Task Force
Sri Lanka College of Dermatologists

2023

General measures

- Skin should be kept clean and dried thoroughly.
- Loose fitting light clothing and cotton garments are recommended.
- All clothes and bed linen should be washed, dried well and ironed.

GENERAL MEASURES

- It is important to refrain from sharing clothing, towels, and other personal items including soap.
- Wash and keep the clothes separately.
- Washing hands with soap and water after touching the lesions and maintaining good personnel hygiene, including daily bath/wash is advisable.

GENERAL MEASURES

- Minimizing contact with other family members, especially children and avoiding contact sports is recommended.
- Intimate contact with partner may be avoided during active infection especially when affecting the genitalia.

GENERAL MEASURES

- Treating all the family members affected at the same time is recommended. Any pets affected in the household should be treated at the same time with the advice from veterinary surgeons.
- Patients must be advised to maintain the highest level of compliance with treatment in view of achieving the desired outcome. They should continue the treatment for the required duration and should not use any preparation containing topical steroid looking for quick relief.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References

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Thank You !