Medical Mycology

Lecture (3)

By

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Tinea nigra

(Phaeoannellomyces werneckii):

World-wide distribution, but more common in tropical regions of Central and South America, Africa, South-East Asia and Australia.

(Phaeoannellomyces werneckii)

lived in soil, compost, and on wood in humid tropical and sub-tropical regions.

Clinical manifestations:

Skin lesions are characterized by brown to black macules which usually occur on the palmar aspects of hands and occasionally the plantar and other surfaces of the skin. Lesions are non-inflammatory and non-scaling.

Laboratory diagnosis:

1. Clinical Material: Skin scrapings.

2. Direct Microscopy: Skin scrapings should be examined using 10% KOH and Parker ink or calcofluor white mounts.

3. Culture: Clinical specimens should be inoculated onto primary isolation media, like Sabouraud's dextrose agar.

4. Serology: Not required for diagnosis.

Treatment: whitfild ointment, topical imidazole in a solution

Black piedra (e)

Black piedra is a superficial fungal infection of the hair shaft caused by

Piedra hortae

It is common in Central and South America and South-East Asia.

Clinical manifestations:

Infections are usually in scalp and hairs of the beard, moustache and pubic hair.
Black piedra mostly affects young adults

Laboratory diagnosis:

1. **Clinical Material: hairs with hard black nodules present on the shaft.**

2. Direct Microscopy: Hairs should be examined using 10% KOH and Parker ink or calcofluor white.

3. Culture: Hair fragments should be implanted onto primary isolation media, like Sabouraud's dextrose agar.

Colonies are dark, brown-black and take about 2-3 weeks to appear.

4. Serology: Not required for diagnosis.

White piedra (Trichosporon spp)

White piedra is a fungal infection of the hair shaft caused by *Trichosporon spp .*

White piedra is worldwide, but is most common in tropical or subtropical regions.

Clinical manifestations:

Infections are usually localised to the axilla or scalp but may also be seen on facial hairs. White piedra is common in young adults. The presence of irregular, soft, white or light brown nodules, 1.0-1.5 mm in length, stuck to the hairs.

Laboratory diagnosis:

1. Clinical Material: white soft nodules present on the hair shaft.

2. Direct Microscopy: Hairs should be examined using 10% KOH and Parker ink or calcofluor white mounts.

3. Culture: Hair fragments should be treated with isolation media, like Sabouraud's dextrose agar. Colonies are white or yellowish to deep cream colored.

4. Serology: Not required for diagnosis.

Treatment for black and white piedra : the hair shoud be shaved , use ointment from imidazole ,selenium sulfide 2%.chlorhexidine solution

Cutaneous Mycoses

Involves deep epidermis and keratinized body areas (skin, hair, nails).classified

A. Dermatophytoses (caused by the genera Epidermophyton, Microsporum and Trichophyton)

scalp, skin, and nails is

fungi known as dermatophytes which have the ability to utilize keratin as a nutrient source ,they have a unique enzymatic capacity [keratinase]..

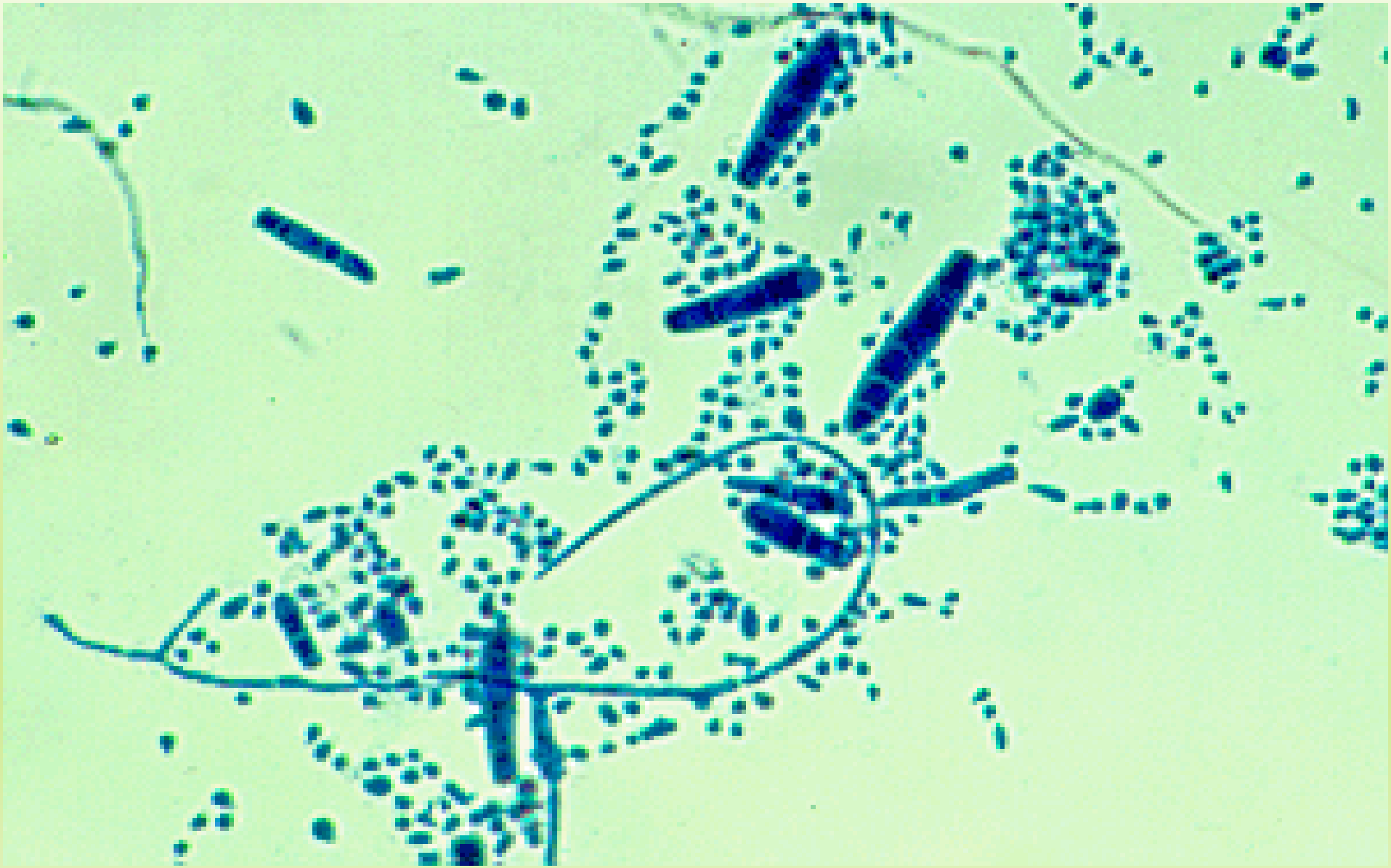
B. Dermatomycoses(the most common of which are Candida spp.)

Dermatophytoses are characterized According to genera for example

1-Trichophyton species (19 species)

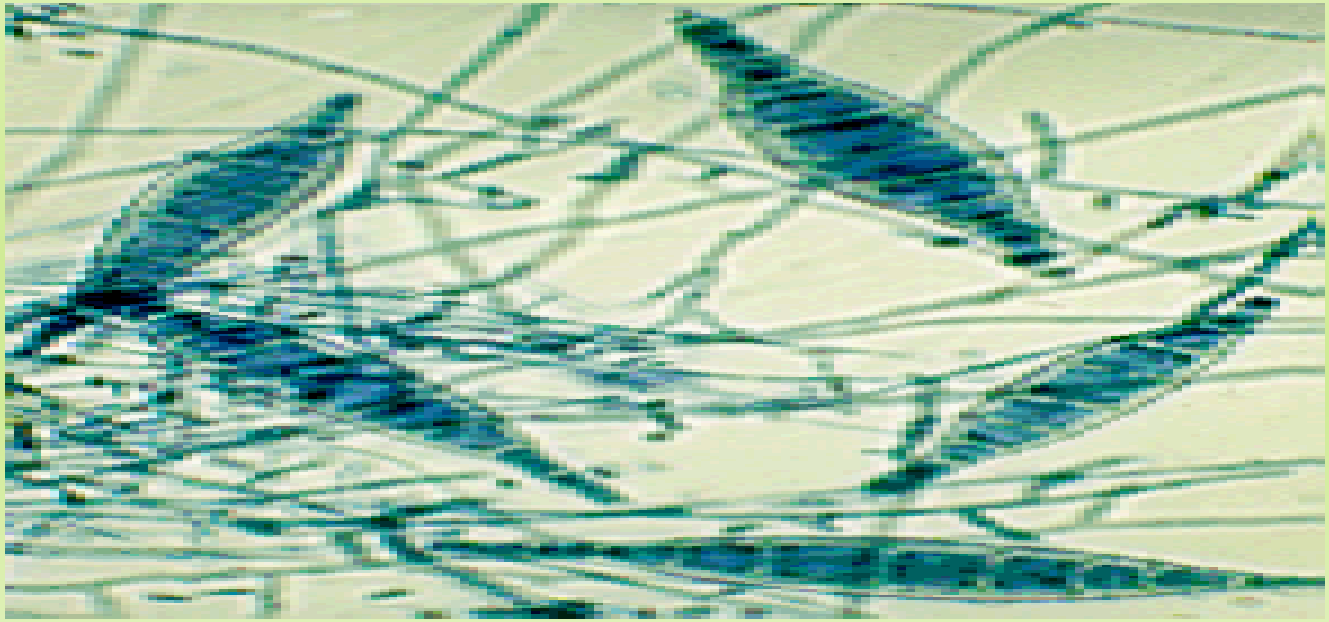
- These infect skin, hair and nails. They rarely cause subcutaneous infections.
- Trichophyton species take 2 to 3 weeks to grow in culture.
- The conidia are large (macroconidia), smooth, thin-wall, and pencil-shaped; mycelium that grow in a variety of colors.
- Identification requires special biochemical and morphological techniques

1-Trichophyton species (19 species)



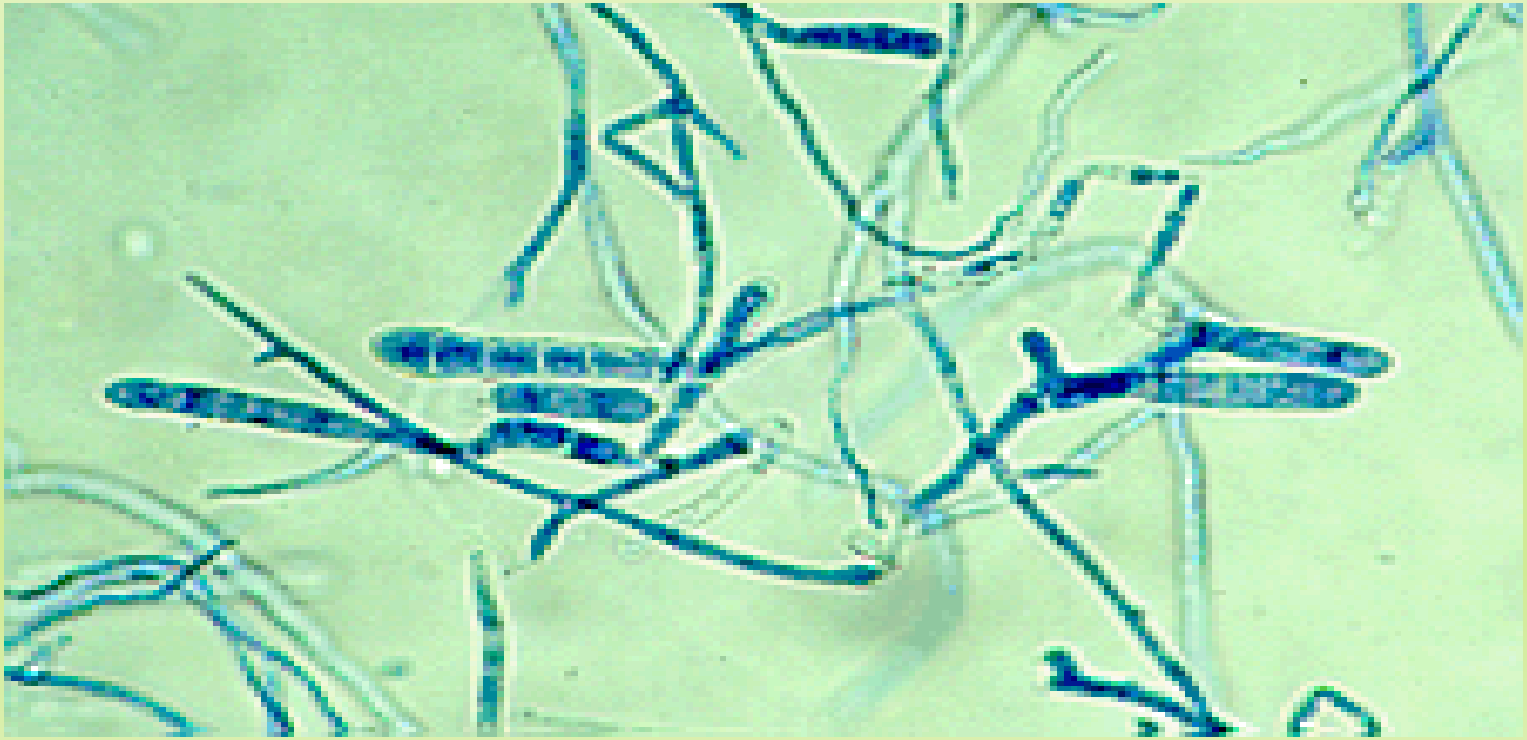
2-Microsporum species (13 species).

- infect skin and hair, rarely nails.
- cottony mycelia produce macroconidia which are thick-walled, spindle-shaped, multicellular, and spiny .
- Microsporum canis is one of the most common dermatophyte species infecting humans.



3- Epidermophyton floccosum.

- These infect skin and nails and rarely hair.
- They form yellow-colored, cottony cultures
- identified by the thick, divided smooth hyphae,



The dermatophytes causing human infections may have different natural sources and modes of transmission:

- **Anthropophilic** - associated with humans only
- **Zoophilic -** associated with animals; transmission to man is by close contact with animals (cats, dogs, cows)
- **Geophilic -** found in the soil and are transmitted to man by direct exposure.

Laboratory diagnosis:

1-Clinical Material

Skin Scrapings, nail scrapings

2-Direct Microscopy

Skin and nail scrapings should be examined using 10% KOH and Parker ink

3-Culture

primary isolation media, like Sabouraud's dextrose agar containing cycloheximide and incubated at 26-28C for 4 weeks.

4-Serology Not required for diagnosis

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