

Lecture 5:

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Subcutaneous mycosis: Sporotrichosis and Mycetoma.

These are infections confined to the dermis, subcutaneous tissue or adjacent structures. infection may arise following the wounding of the skin and the introduction of vegetable matter. these mycoses are rare and confined mainly to tropical regions. they tend to be slow in onset and chronic in duration. an example is sporotrichosis caused by *sporothrix schenckii*. the fungus is dimorphic, being a mould that can convert to a yeast form at 37°C on rich laboratory media or in infection.

Sporotrichosis:-

Is a disease **caused by** the infection of the fungus *Sporothrix schenckii*. This fungal disease usually affects the skin, although other rare forms can affect the **lungs, joints, bones**, and even the **brain**.

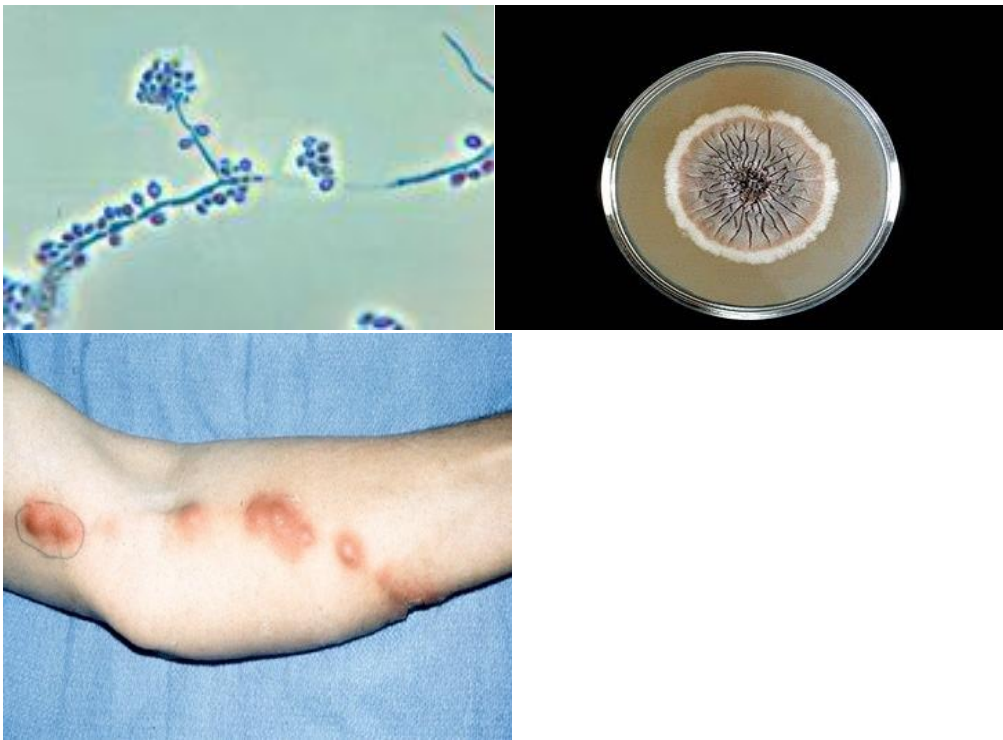
Because roses can spread the disease, it is one of a few diseases referred to as **rose-thorn** or **rose-gardeners' disease**. Because *S. schenckii* is naturally found in soil, hay, sphagnum moss, and plants, it usually affects farmers, gardeners, and agricultural workers. It enters through small cuts and abrasions in the skin to cause the infection. In case of sporotrichosis affecting the lungs, the fungal spores enter through the respiratory pathways. Sporotrichosis can also be acquired from handling cats with the disease; it is an occupational hazard for veterinarians.

Pathophysiology

Infection with the dimorphic soil fungus is usually acquired from organic matter through cutaneous inoculation. The mycosis has also been transmitted from animals through bites or scratches. Cats have been responsible for cases among veterinarians and for a large outbreak in Rio de Janeiro, Brazil. See the image below



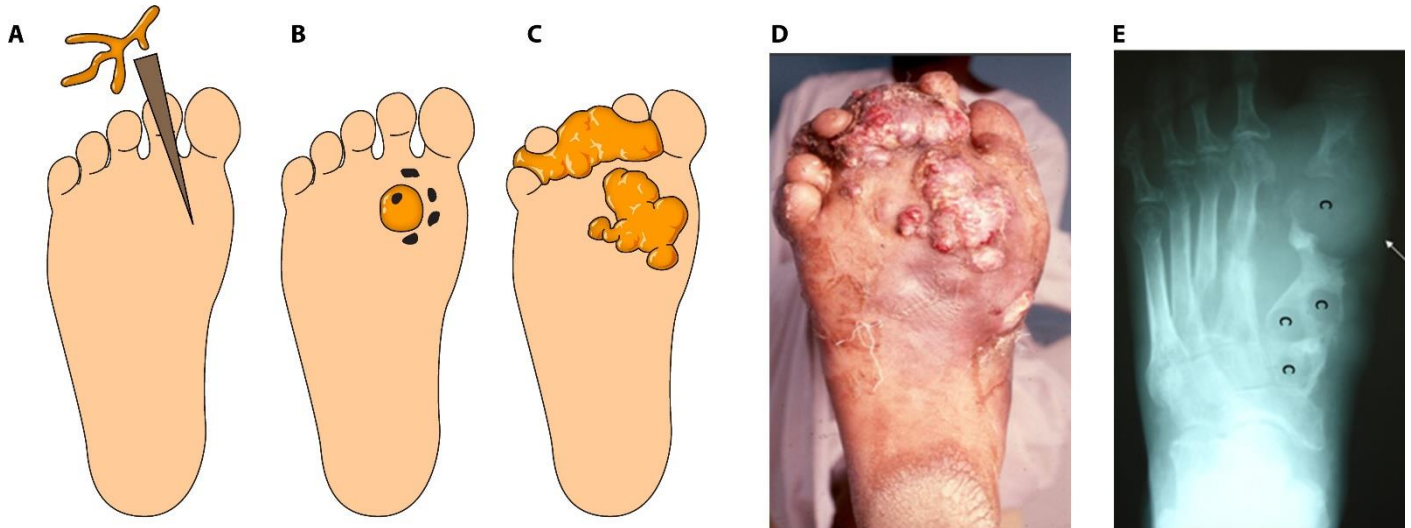
(A) Clinical aspect of feline sporotrichosis with ulcerated lesions in the cephalic region of a cat from the state of Espírito Santo, Brazil. (B,C) Feline macrophages infected with numerous *S. brasiliensis* yeasts cells (arrows), stained using the quick Panoptic method.



Types of sporotrichosis

- **Cutaneous (skin) sporotrichosis** is the most common form of the infection. It usually occurs on a person's hand or the arm after they have been handling contaminated plant matter.
- **Pulmonary (lung) sporotrichosis** is very rare but can happen after someone breathes in fungal spores from the environment.
- **Disseminated sporotrichosis** occurs when the infection spreads to another part of the body, such as the bones, joints, or the central nervous system. This form of sporotrichosis usually affects people who have weakened immune systems, such as people with HIV infection .

Mycetoma: is a suppurative and granulomatous subcutaneous mycosis, which is destructive of contiguous bone, tendon, and skeletal muscle. Mycetoma is characterized by the presence of draining sinus tracts from which small but grossly visible pigmented grains or granules are extruded. These grains are microcolonies of fungi causing the infection.



Diagnosis of Mycetoma Specimen collection:

Aspiration (best), drainage, tissue biopsy /section

- Examination of grains:- Record size, color, shape and consistency of grains
- Direct microscopic examination: KOH/LPC preparations (LPC = lactophenol cotton blue)
- Culture Standard mycological media or aerobic/anaerobic bacterial culture condition

Treatment

Treatment is difficult due to inability of drugs to infiltrate lesions, combination of medicine and surgery is the best
Eumycotic mycetoma: Amphotericin B
Actinomycotic mycetoma: Antibiotics