

Subcutaneous Mycoses

- **Mycetoma** (clinical syndrome of localized, indolent, deforming, swollen lesions and sinuses, involving cutaneous and subcutaneous tissues, fascia, and bone; usually occurring on the foot or hand) - etiologic agent may be bacterial or fungi. Discussion here will be restricted to fungal mycetoma or **eumycetoma**.
- **Chromoblastomycosis** (subcutaneous and cutaneous tissues of the hands and feet).
- **Phaeohyphomycosis** (face, cornea of eye, subcutaneous and cutaneous part of skin, occasionally cerebral and systemic)
- **Sporotrichosis** (cutaneous and subcutaneous tissues and adjacent lymphatics that suppurate, ulcerate and drain)
- **Lobomycosis** (subcutaneous and cut. tissues over different parts of body).
- **Rhinosporidiosis** (nasal cavities, mucocutaneous tissue - rarely it does effect the vagina, penis, anus, ears, and throat region)

Mycetoma



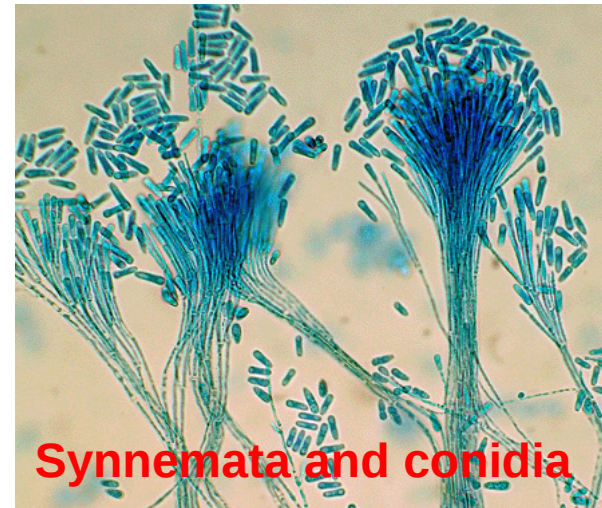
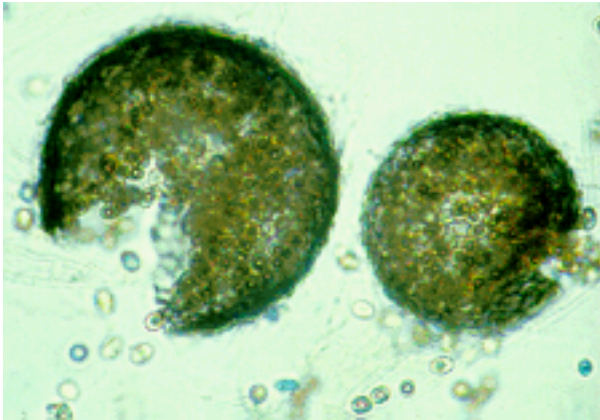
Mycetoma

- Mycetoma - clinical syndrome of localized, indolent, deforming, swollen lesions and sinuses, involving cutaneous and subcutaneous tissues, fascia, and bone; usually occurring on the foot or hand) - etiologic agent may be bacteria or fungi.
- one potential causal agent can be *Pseudallescheria boydii*, a soil/water inhabiting fungus with worldwide distribution. However other fungi can be involved.
- Fungi associated with fungal mycetoma are opportunistic.
- mycotic mycetoma - usually more common in men (3:1 to 5:1) than in women
- usually results from trauma or puncture wounds to feet, legs, arms and hands (usually on the feet)
- starts out as tumor-like to subcutaneous swelling
- ruptures near the surface; infects deeper tissues including subcutaneous tissues and ligaments (tendons, muscles and bone are usually spared)
- small particles or grains leak out of the lesions - these represent the to yellowish microcolonies

Mycetoma

- lesions of mycetoma seldom heal spontaneously
- disease is chronic may continue for 40-50 years
- *P. boydii* is resistant to all systemically useful drugs, including amphotericin B, KI, 5-fluorocytosine, 2-hydroxystilbamidine
- ketoconazole appears to be ineffective in clinical trials
- intravenous miconazole (9 mg per Kg of body weight sometimes higher doses) shows promise
- surgery and removal of tumor (if small it is encapsulate, if larger amputation may be required)
- Combining miconazole and surgery may prove useful in effectively treating the disease.

***Pseudallescheria boydii* (Teleomorph): *Scedosporium apiospermum* or *Graphium eumorphum* (Anamorphs)**



<http://www.doctorfungus.org/thefungi/pseudallescheria.htm>

Chromoblastomycosis



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<http://dermnetnz.org/fungal/chromoblastomycosis.html>

Chromoblastomycosis - chromomycosis or verrucous dermatitis

- Disease is one of hyperplasia, characterized by the formation of verrucoid (rough), warty, cutaneous nodules, which may be raised 1-3 cm above the skin surface. The roughened, irregular, pedunculated vegetations often resembles the florets of cauliflower
- This disease is caused by *Fonsecaea pedrosoi* and *Phialophora verrucosa* (identical to *Cadophora americana* which causes bluing of lumber), both of which are dematiaceous fungi (darkly pigmented)
- occurs rarely in animals (such as, horses, cats, dogs, and frogs)
- soil-inhabiting fungi
- susceptibility enhanced by going barefoot or wearing sandals
- found almost exclusively in laborers
- enters hand or feet after trauma
- found primarily in the tropics or subtropics
- dull red or violet color on skin may resemble a ringworm lesion
- develops into a verrucous lesion
- pruritus (itchiness) and papules may develop
- fungus gets under the skin (produces bumps)
- bumps may block lymphatic system and cause elephantiasis
- sometimes bacterial infection may enter and cause a secondary infection
- rarely this fungus spreads to other areas of the subcutaneous tissue.
- potentially may spread to brain (life-threatening in that case)

<http://www.doctorfungus.org/mycoses/human/other/chromoblastomycosis.htm>

Chromoblastomycosis - chromomycosis or verrucous dermatitis

- **Identification**

- biopsy tissue - look at the skin for fungus
- hematoxylin stain - look for fungal cells scattered among skin cells
- attempt to culture fungus from biopsy tissue must always take place to identify the etiological or causal agent
- colonies of fungi are dark or blackish
- Two species implicated in this mycosis - each may produce several spore types
 - *Fonsecaea pedrosoi* - Cladosporium type and Rhinocladiella type of conidiation
 - *Phialophora verrucosa* - Phialophora type (flowers in the vase conidiation)
- fungi found growing on plant debris, wood, soil.

- **Treatment**

- usually not fatal or necessarily painful
- unsightly disease
- no really good cure
- thiabendazole - shows promise (given orally and on skin mixed with dimethyl sulfoxide [DMSO] - to deliver drug) - experimental drug
- surgical excision, electrodesiccation, or cryosurgery are useful in early stages of disease
- application of heat to infect site has been reported to effect a cure of the disease after six months of treatment (using pocket warmers)
- itraconazole shows promise in clinical trials.
- For trial studies using posaconazole therapy check the following link at:
http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0036-46652005000600006&lng=es&nrm=iso&tlng=en

Fonsecaea spp.



<http://www.doctorfungus.org/thefungi/Fonsecaea.htm>

Phialophora spp.



<http://www.doctorfungus.org/thefungi/Phialophora.htm>