

Otomycosis

Fungal infection of the external auditory canal (otitis externa and otomycosis) is a chronic, acute, or subacute superficial mycotic infection that rarely involves middle ear.

Otomycosis (swimmer's ear) is usually unilateral infection and affects more females than males.

The infection is usually symptomatic and main symptoms are pruritus, otalgia, aural fullness, hearing impairment, otorrhea, and tinnitus.

Otomycosis
Mycotic Otitis Externa
myringomycosis
Fungal infection of the ear

عفونت قارچی کانال خارجی گوش

عوامل قارچی متنوع از قبیل مخمرها (از جمله مالاسزیا)،
سایروفیتها و درماتوفیتها میتوانند در مجرای خارجی گوش
کلونیزه شده و ایجاد عفونت نمایند.

علائم بیماری شامل ورم و التهاب مجرای گوش، کری و
سنگینی گوش و گاهی ترشحات چرکی و وجود توده های پنبه ای
شکل می باشد.

Otomycosis



- Fungal infection of the outer ear generally occurs as a secondary condition following an underlying bacterial infection or some other abnormality.

Otomycosis



- کلونیهای قارچی که شامل سرهای بارور اسپرجیلوسی است بوضوح دیده می شود.
- اسپرجیلوس نیجر از شایع ترین اسپرجیلوسهای آلوده کننده گوش می باشد.

Etiology

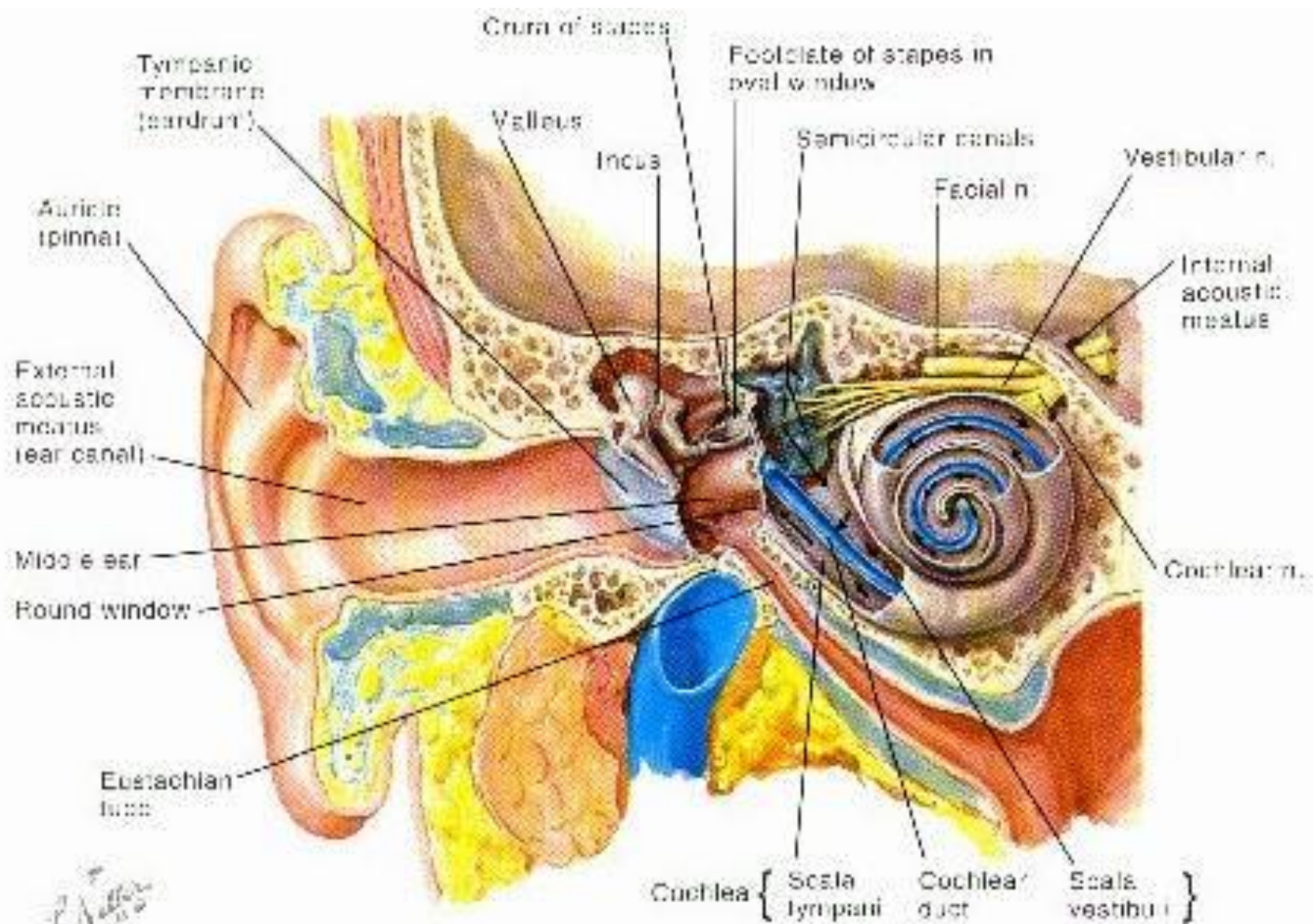


- In addition of *A.niger*, *A.fumigatus* and *A.terreus*; Species of *Scopulariopsis*, *Mucor*, *Rhizopus*, *Candida* and dermatophytes also are occasional etiologic agents.

Definition

Otomycosis is a superficial, acute, subacute or chronic infection of the outer ear canal, usually unilateral is characterised by inflammation, pruritus, pain and scaling.

The disease is sporadic and caused by a wide variety of fungi, most of which are saprobes occurring in diverse types of environmental materials.



Geographical distribution

World-wide •

It is more common in warm climates •

Causal organisms

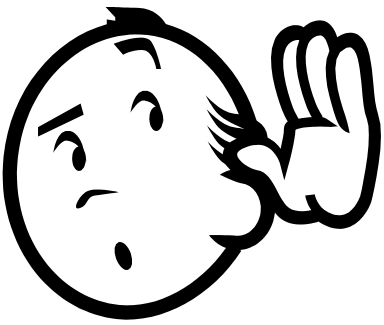
- Fungi can be either the primary pathogen or superimposed on bacterial infections.
- Saprophytic moulds particularly *Aspergillus sp.* (*niger*, *fumigatus*, *flavus*, *nidulans*) 60% to 90 %
- *Candida sp.* (*C.albicans* and *C.tropicalis*) 10% to 40%
- *Scedosporium apiospermum* , *Penicillium sp.* , *Absidia SP.* , *Rhizopus sp.* , *Acremonium sp.* , *Scopulariopsis brevicaulis* , *Malassezia* , *Hendersonula toruloidea*
- *Dermatophytes* (*Epidermophyton floccosum*, *Trichophyton mentagrophytes* , *T.violaceum*)

Predisposing factors

- High humidity and waxy secretions
- Long – term topical antibiotics or steroids
- Previous history of diabetes mellitus or an immunocompromised state

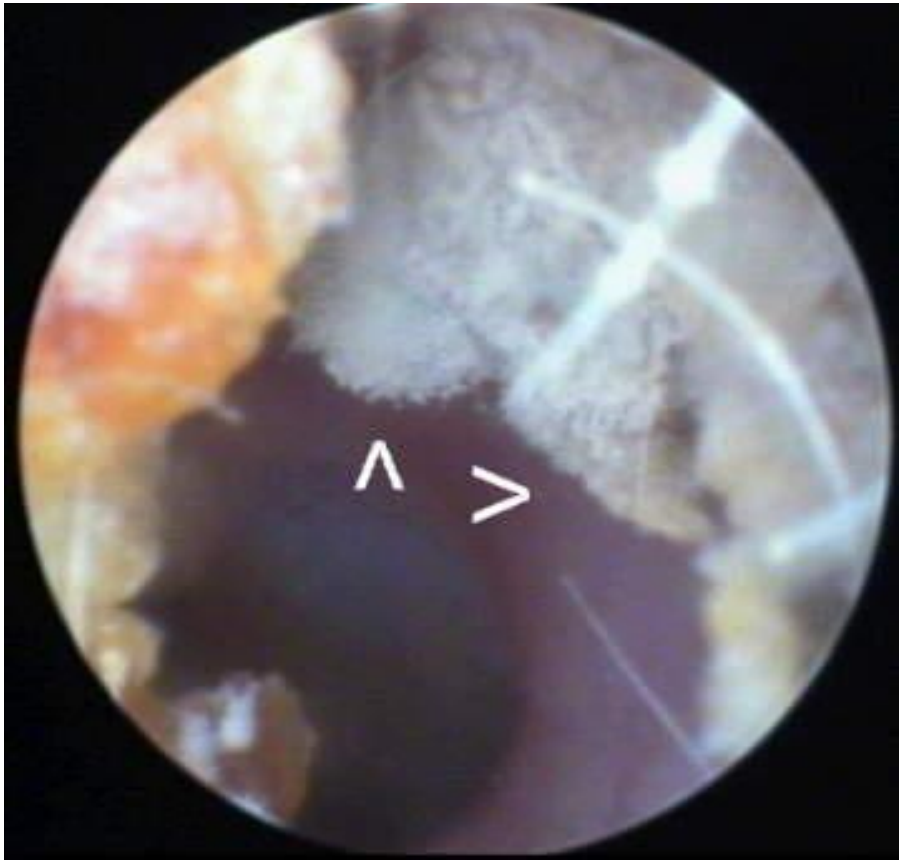
Clinical manifestations

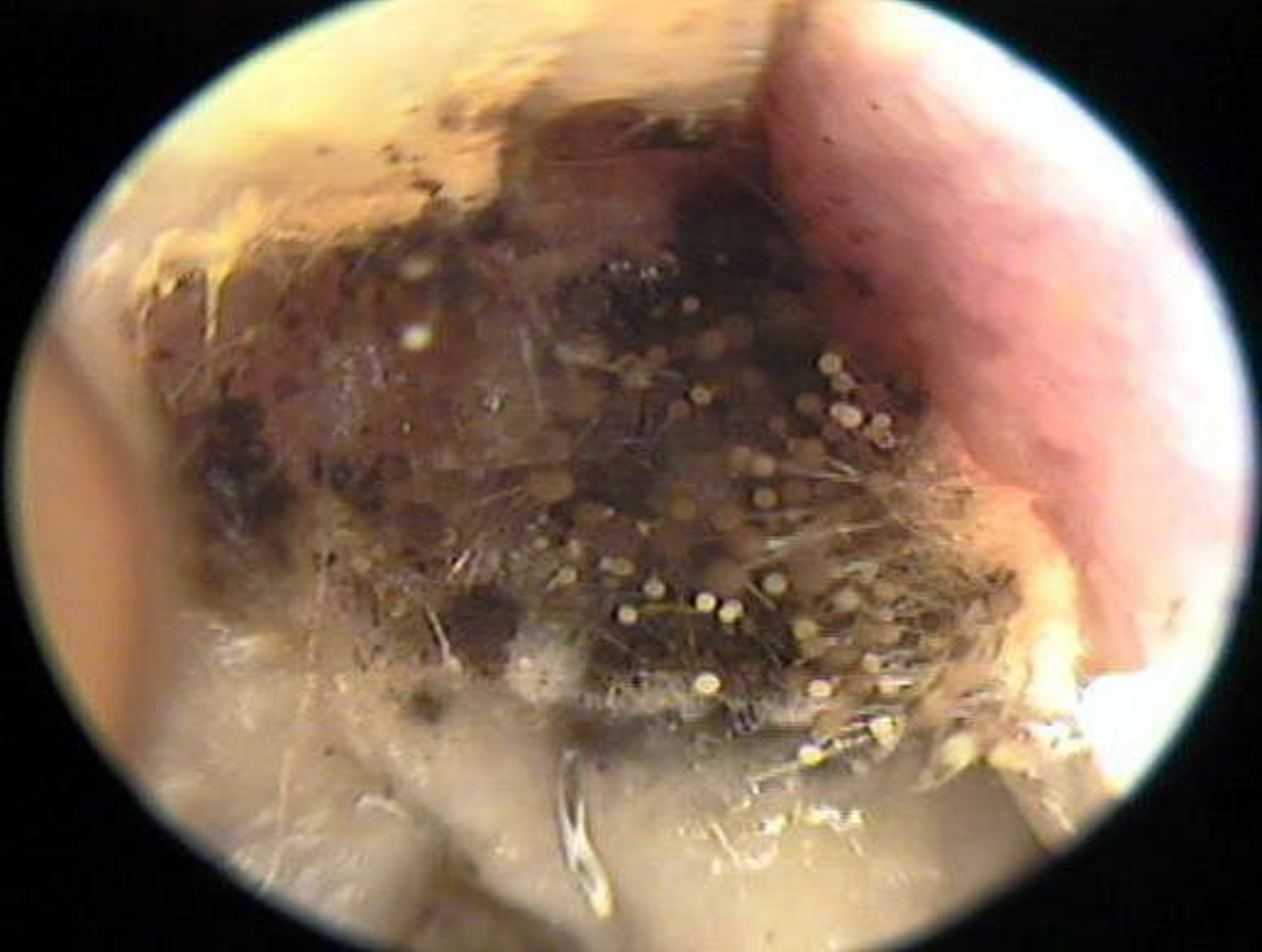
- The initial symptoms of fungal otitis externa are often indistinguishable from bacterial OE.
- Discomfort and irritation around the ear canal , **hearing loss** , tinnitus , giddiness



otomycosis

observation with otoscope

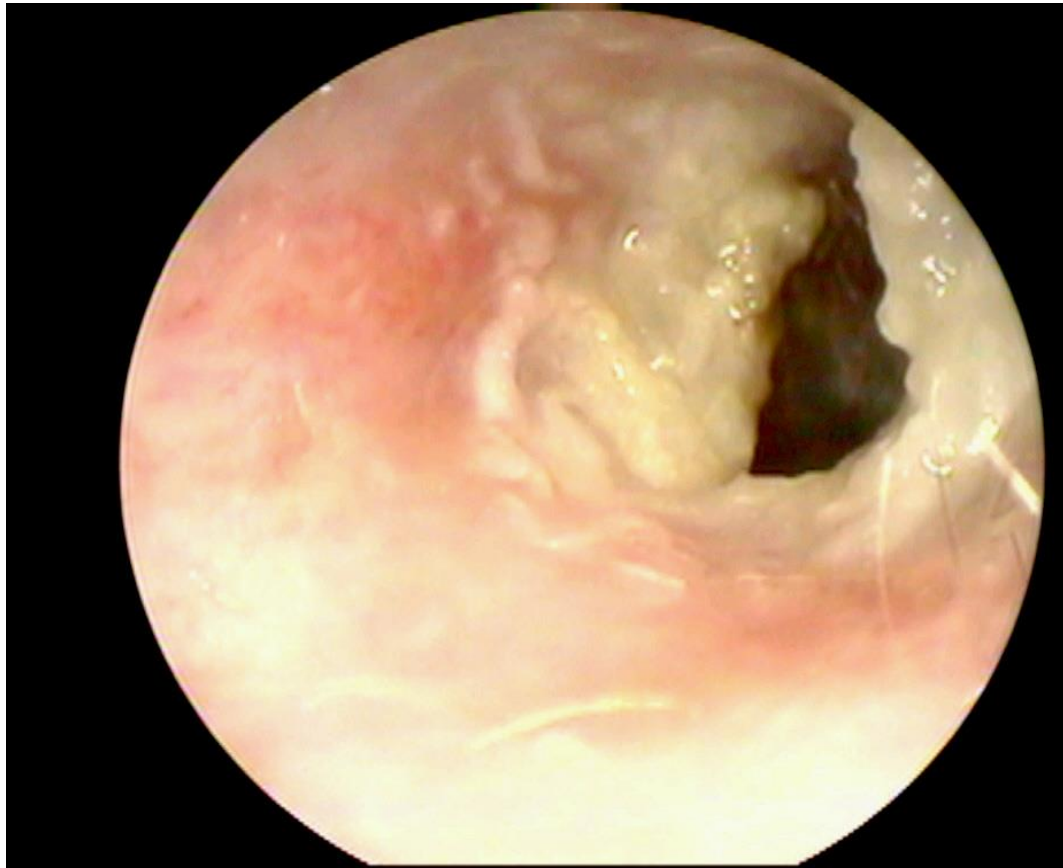




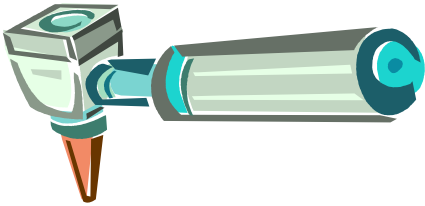


**Discharge , with mixed bacterial infections pain ,
suppuration**

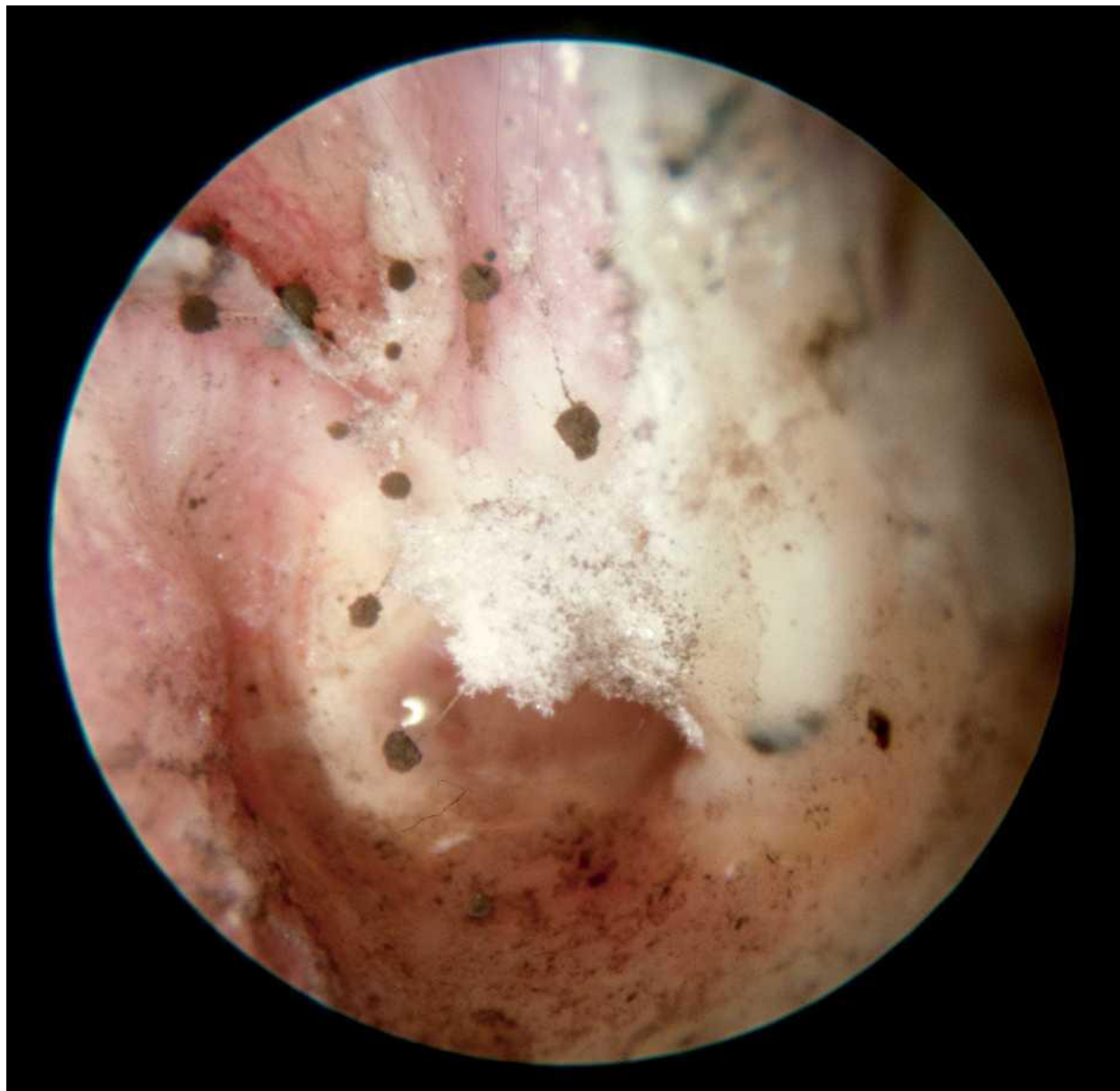
In advanced cases , wooly mycelial



Physical examination generally demonstrates Black , gray , bluish green , yellow or white fungal growth and debris in the external ear canal





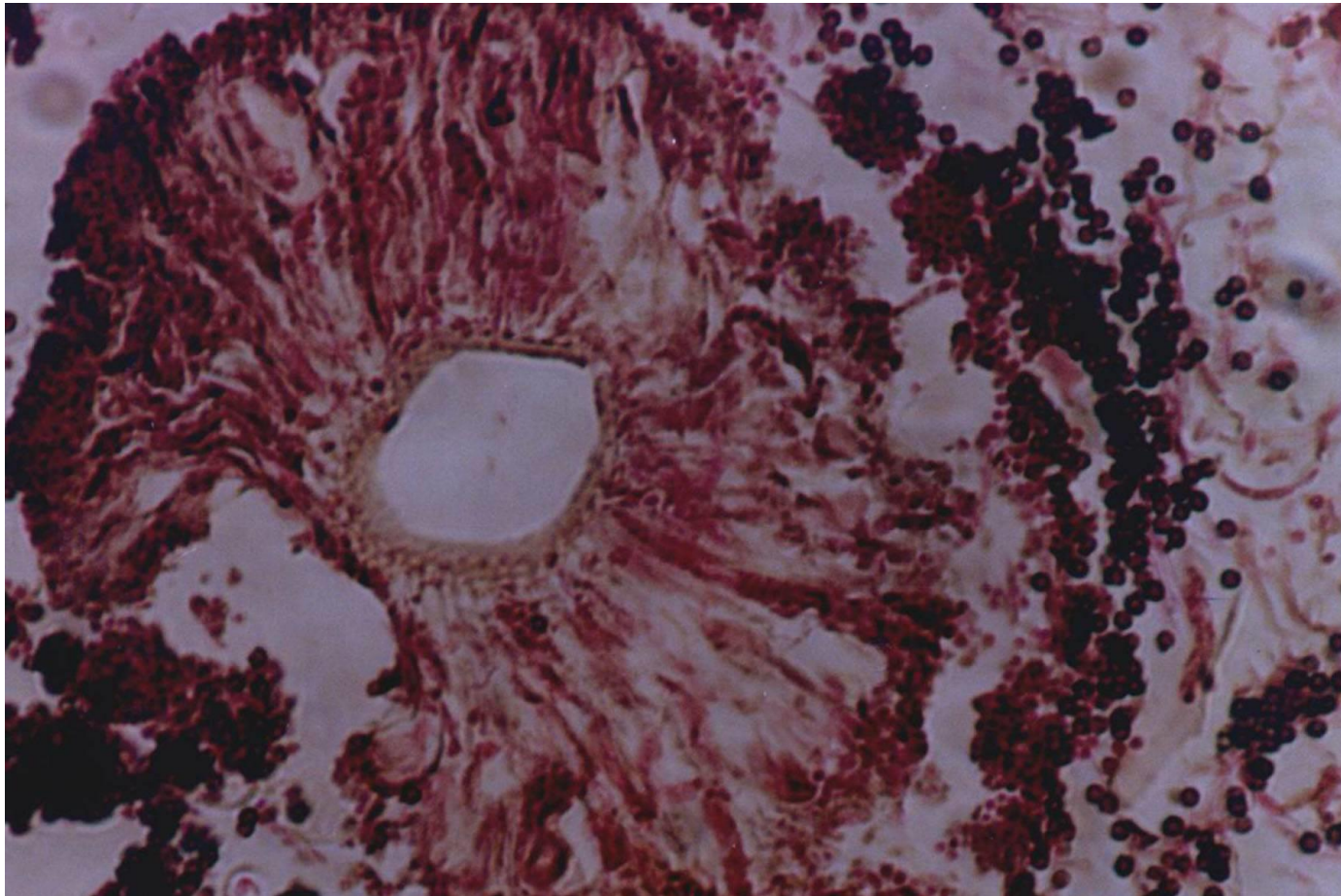


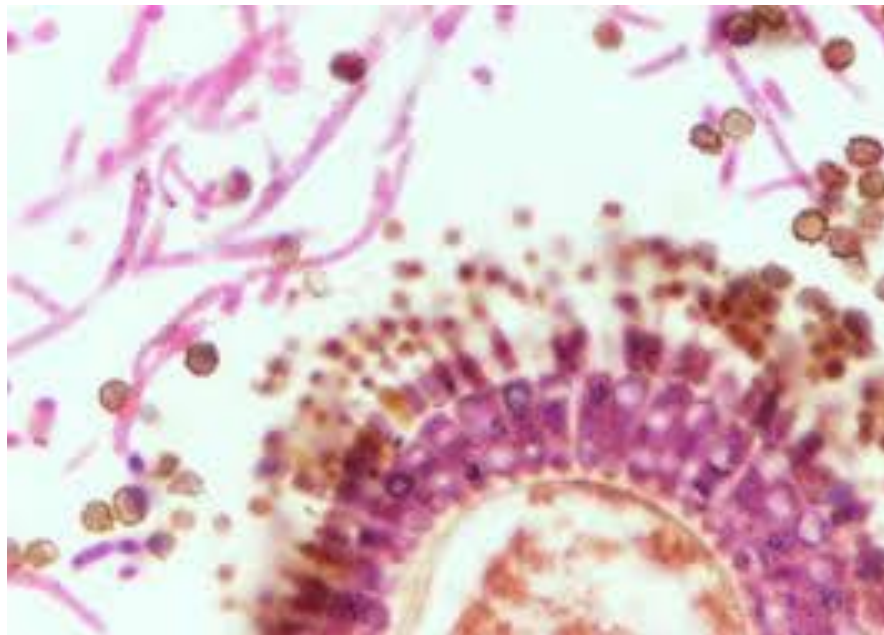
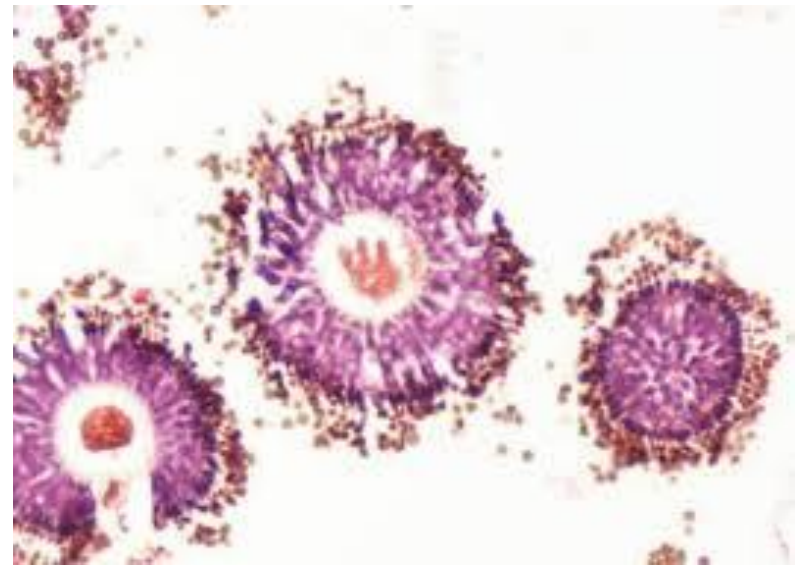
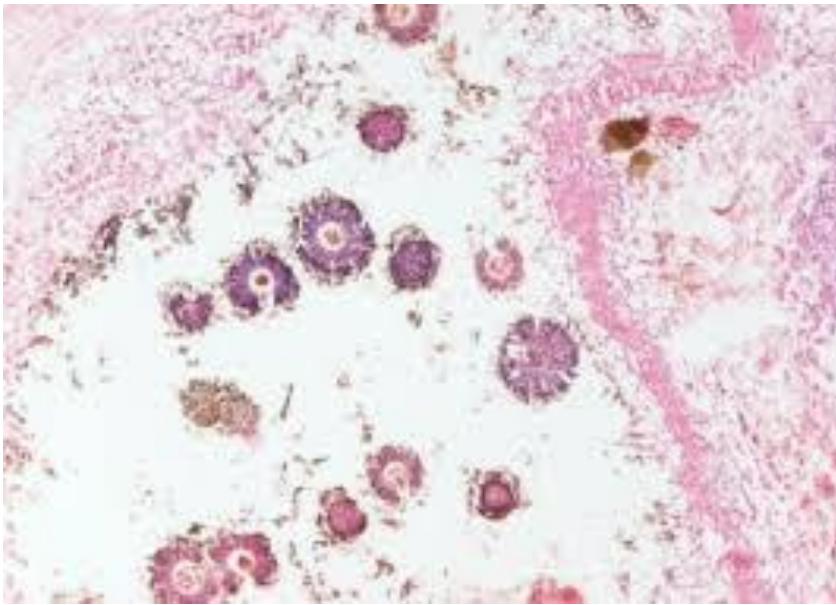


Diagnosis

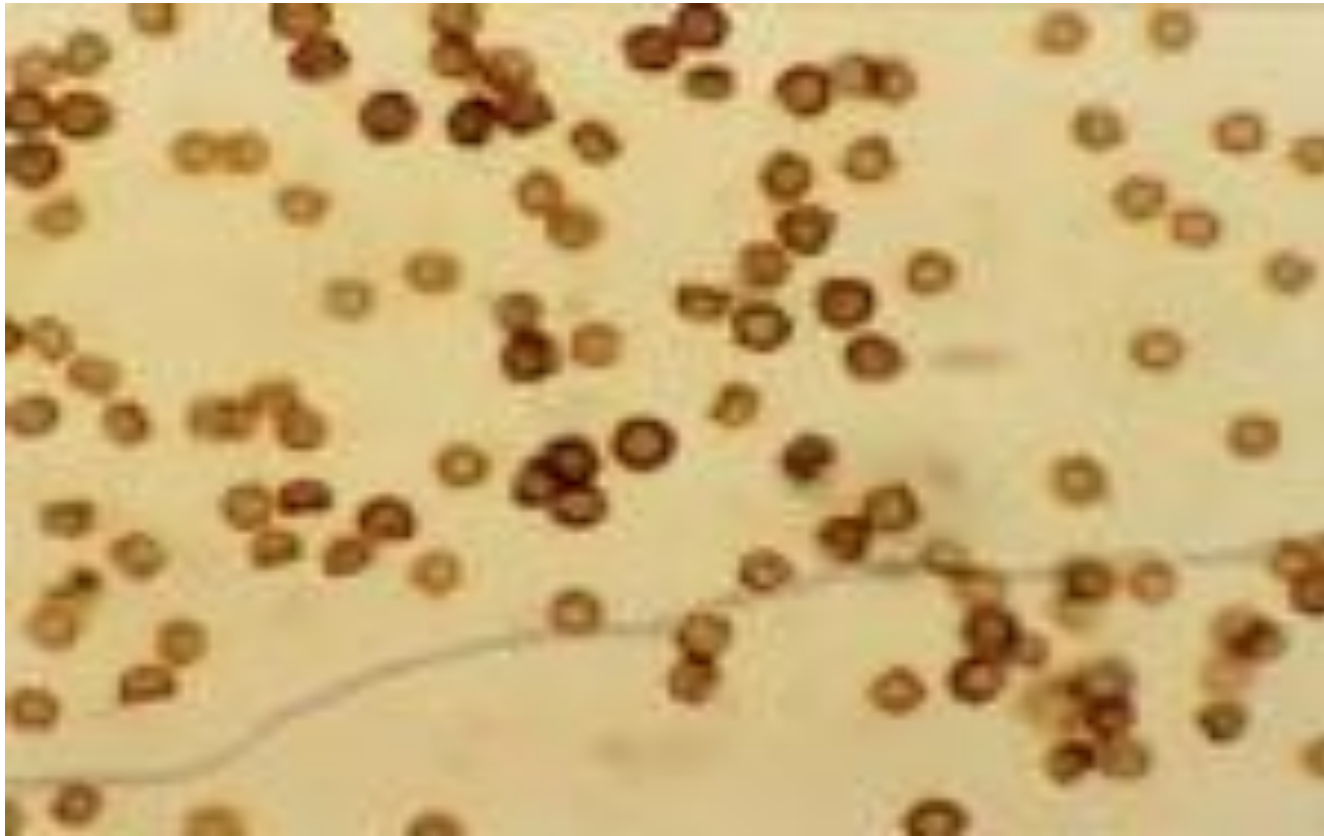
- The diagnosis is made by the observation of hyphae or even fruiting conidial heads in scrapings or discharge from the ear canal.
- Culture will confirm the presence of fungus and the species usually involved are aspergilli, especially *A.niger*, which can be recovered readily on media with chloramphenicol but without cycloheximide and incubated at 37°C.

otomycosis direct smear

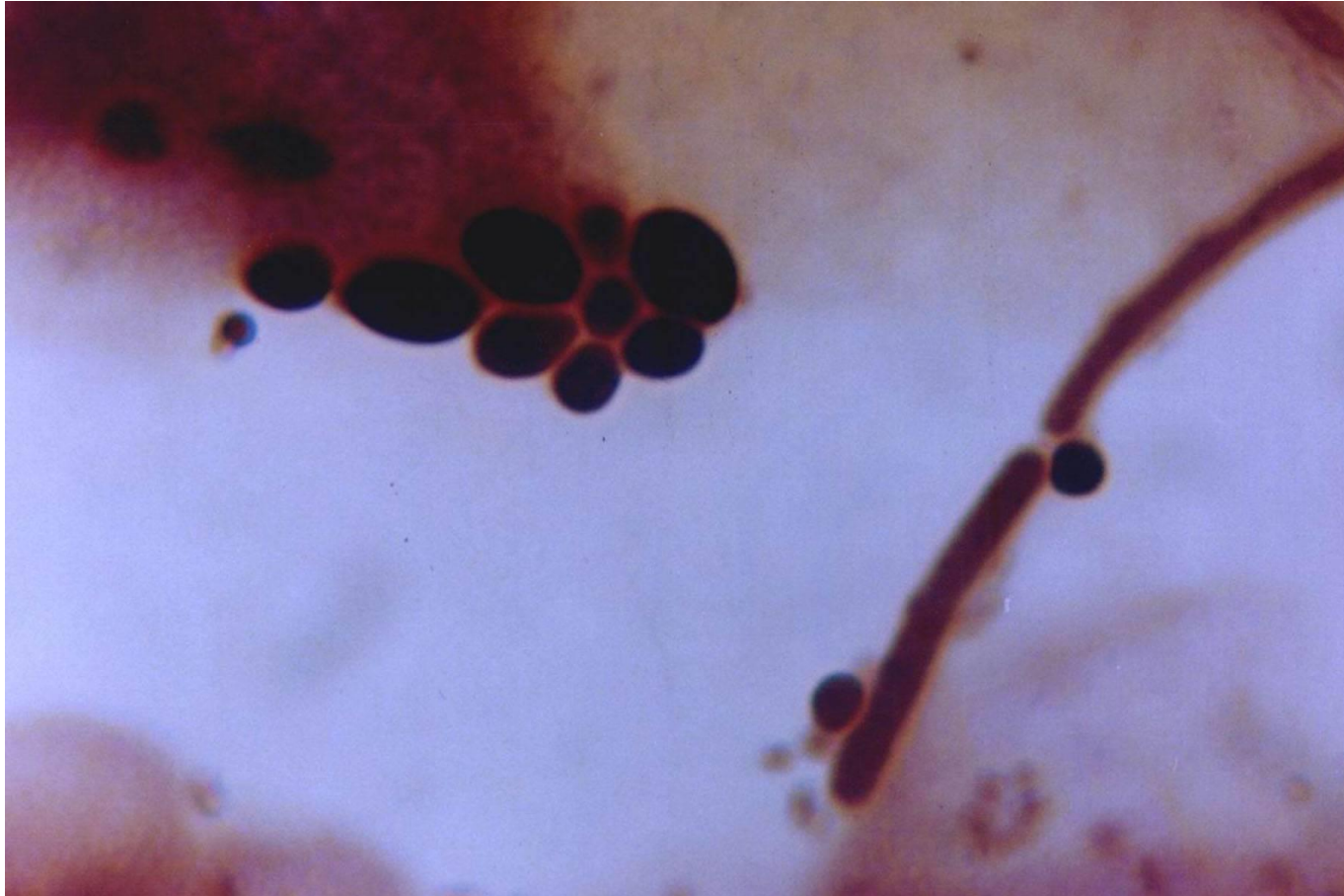




otomycosis direct smear

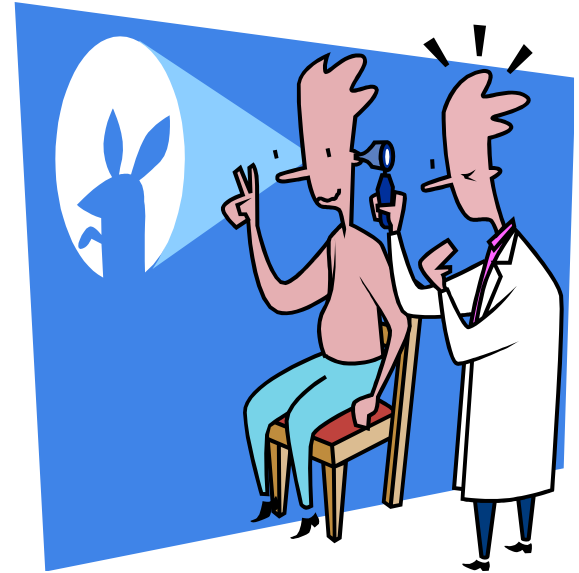


otomycosis direct smear (Candida)



Differential Diagnosis

- Seborrhoeic dermatitis
- Streptococcal dermatitis
- Contact dermatitis
- Allergic infections
- Impetigo



diagnosis

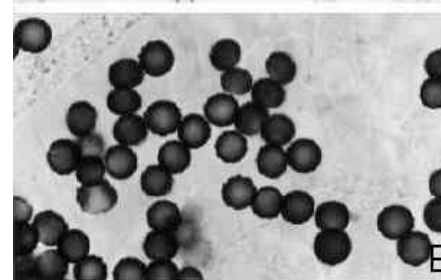
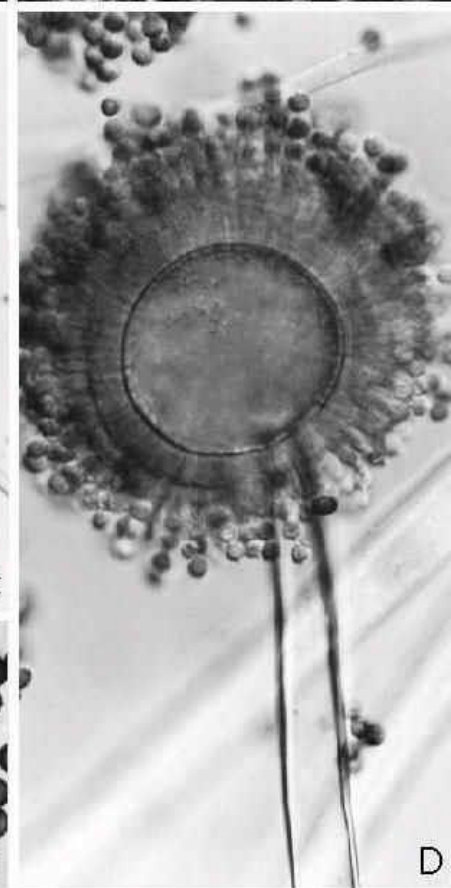
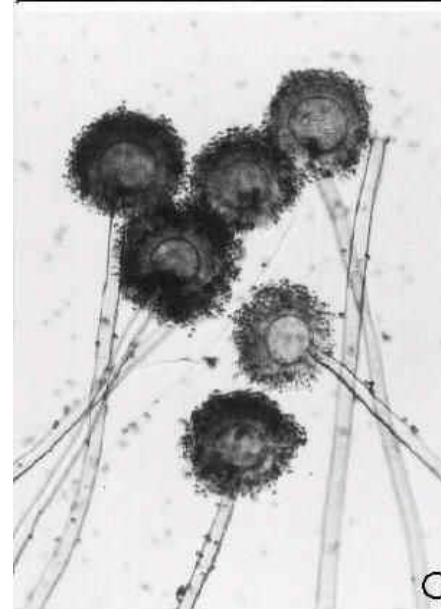
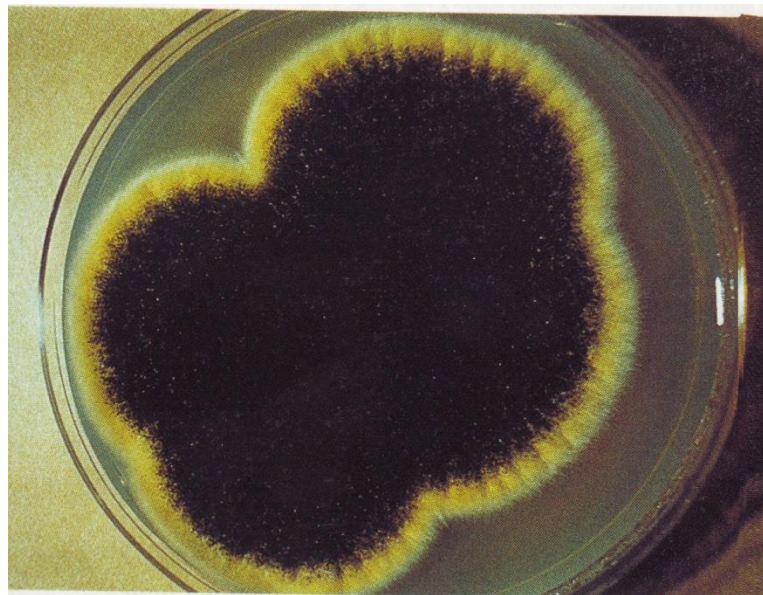
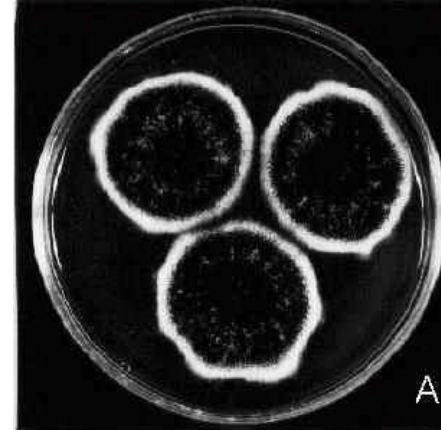
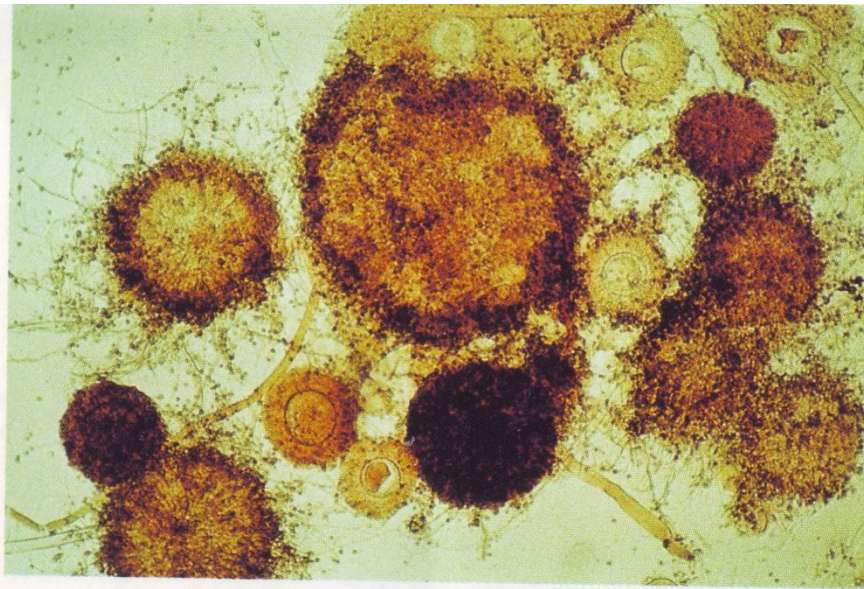


Direct examination

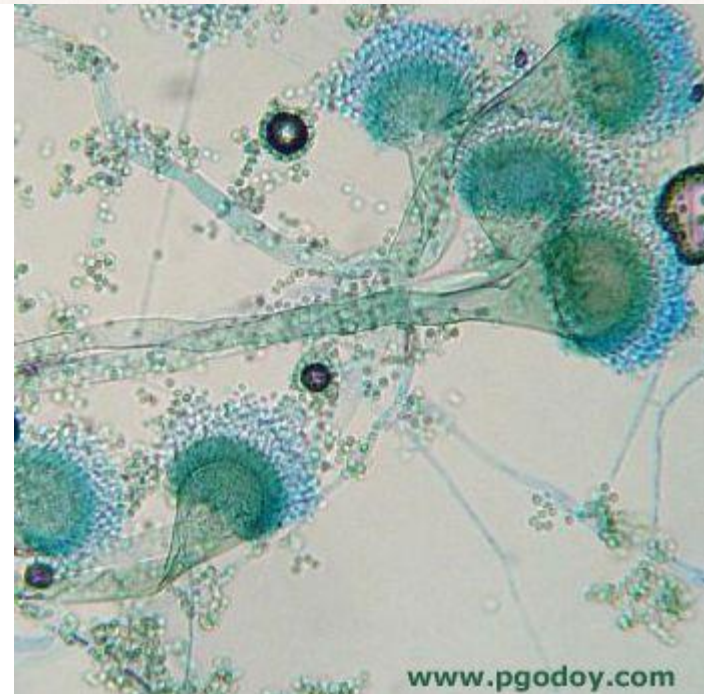
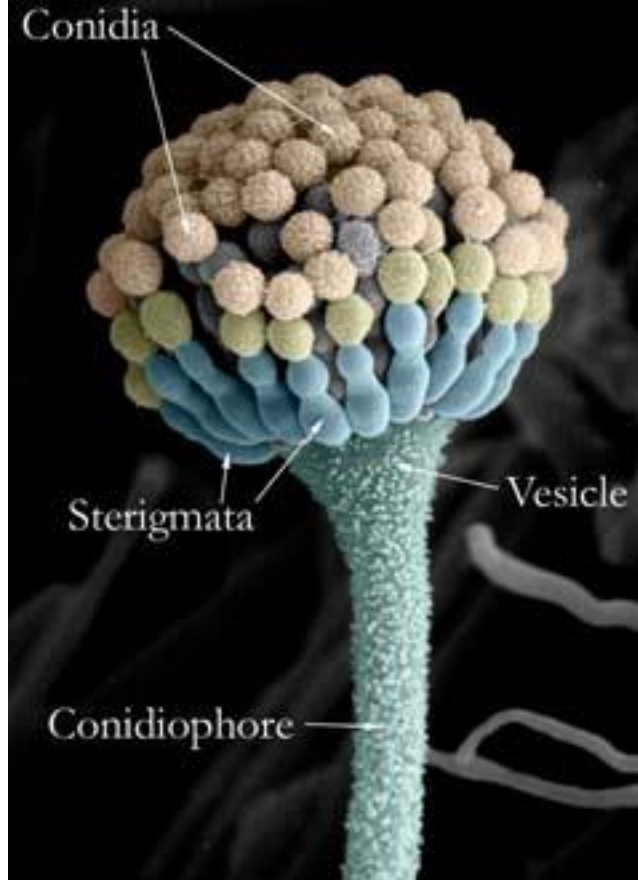
- Microscopic examination of debris from the ear canal in 10% KOH : branching hyphae , budding cells or both
- Sporing heads may be seen in *Aspergillus* sp. infections

Culture

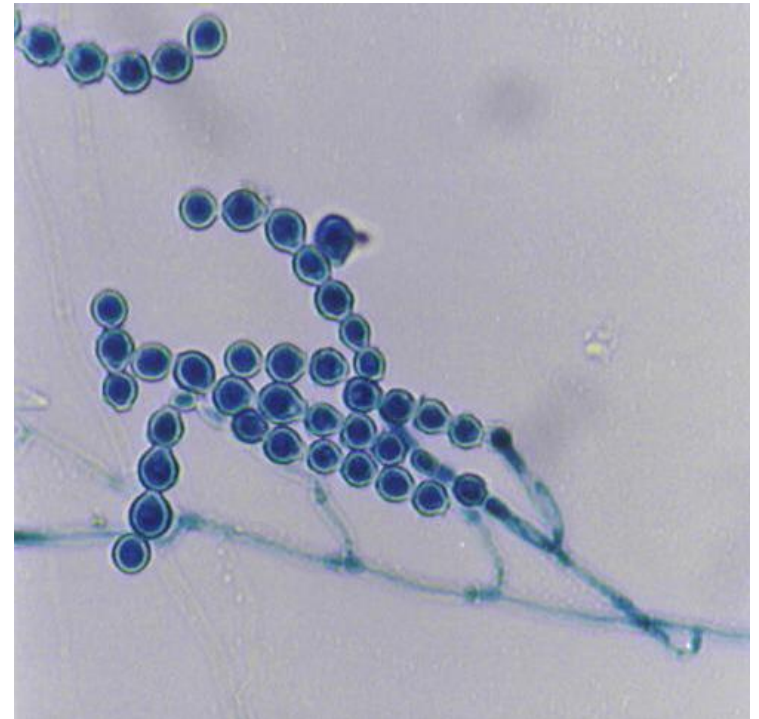
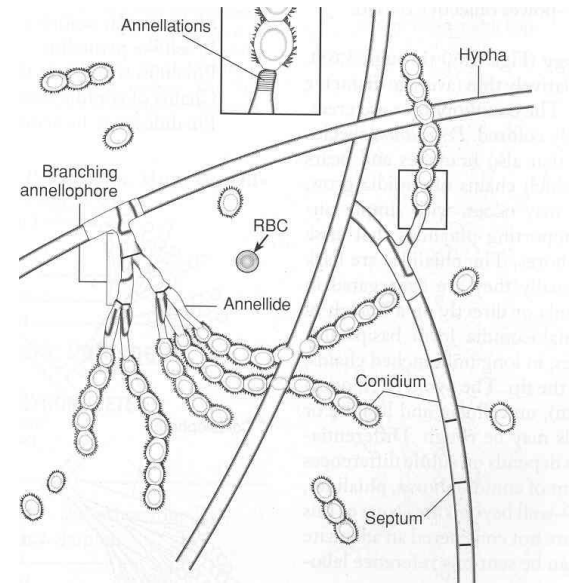
- The clinical material should be inoculated onto Sabouraud dextrose agar and incubated at 30°C.
- medium with cycloheximide has little value
- Additional media containing antibacterial agents helpful







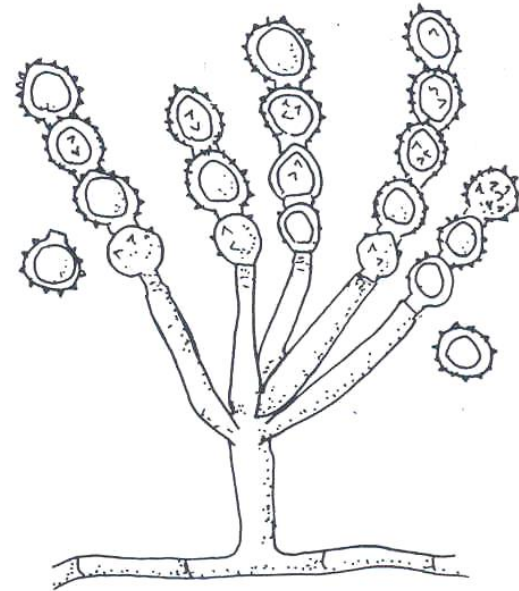
Scopulariopsis sp.



Scopurariosis *sp.*



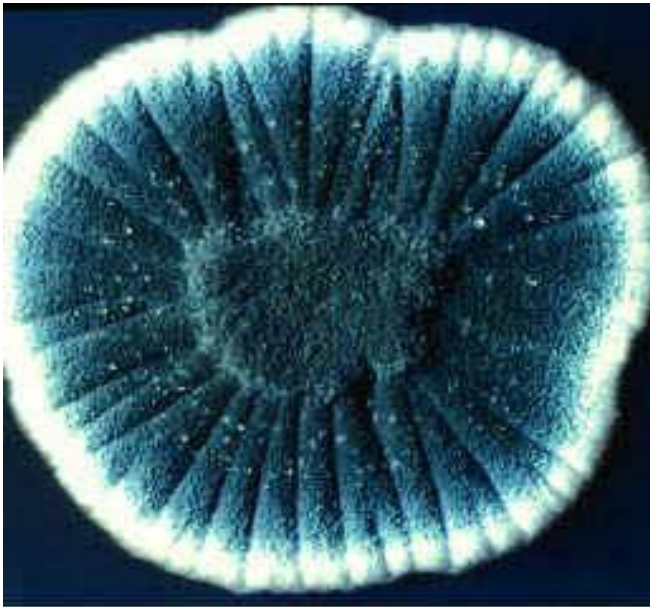
Fast growing , powdery to fluffy, white to light brown



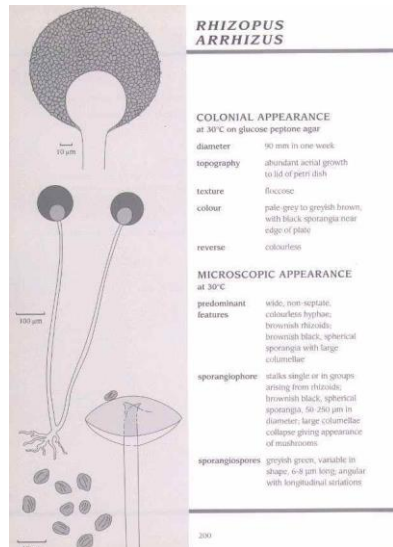
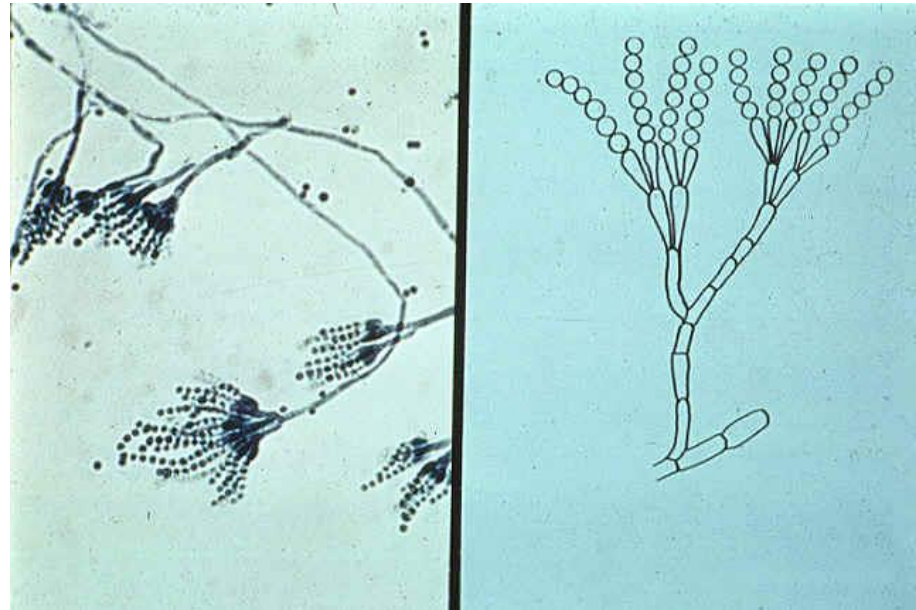
S. brevicaulis





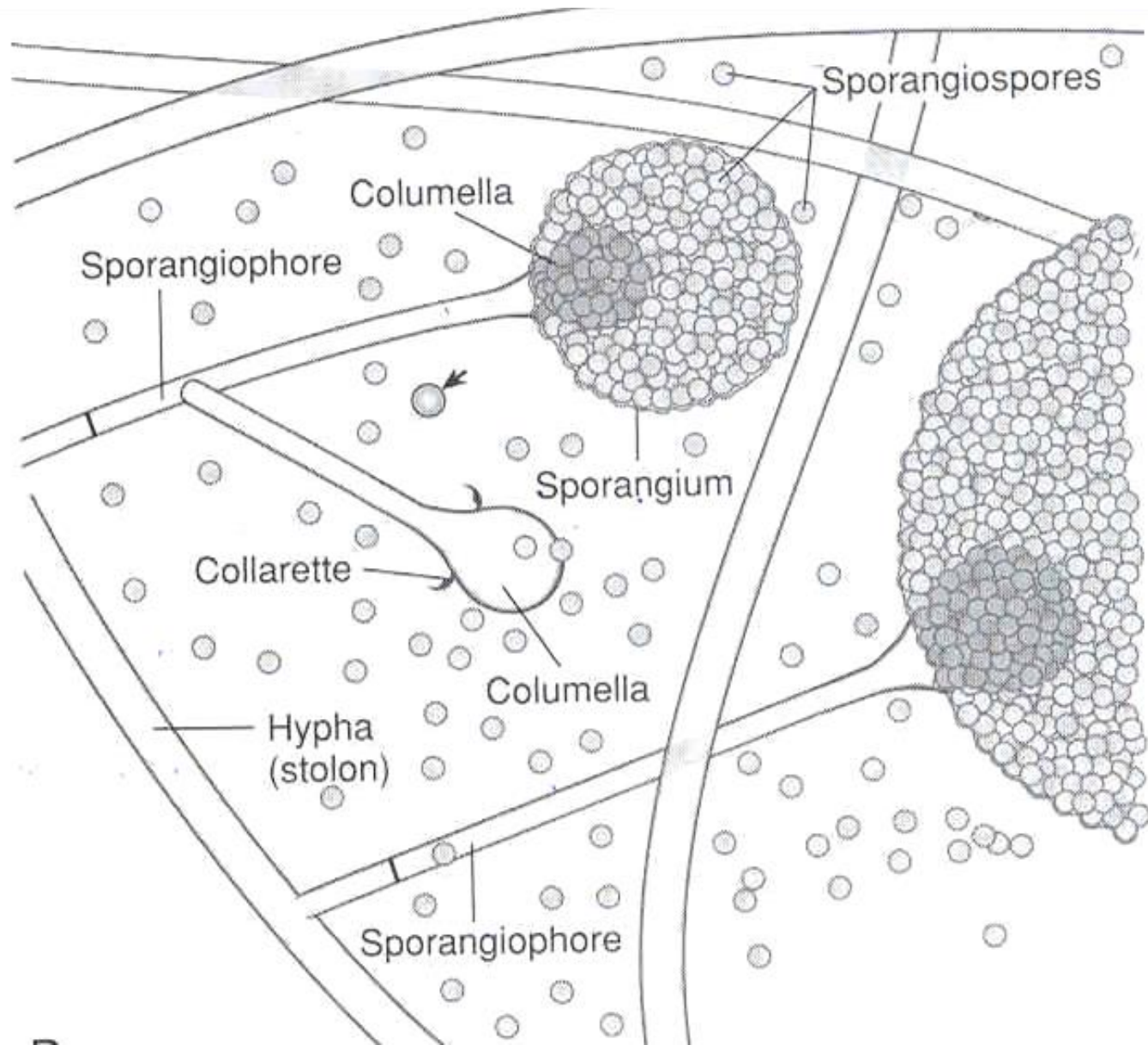


Penicillium- Class Ascomycetes

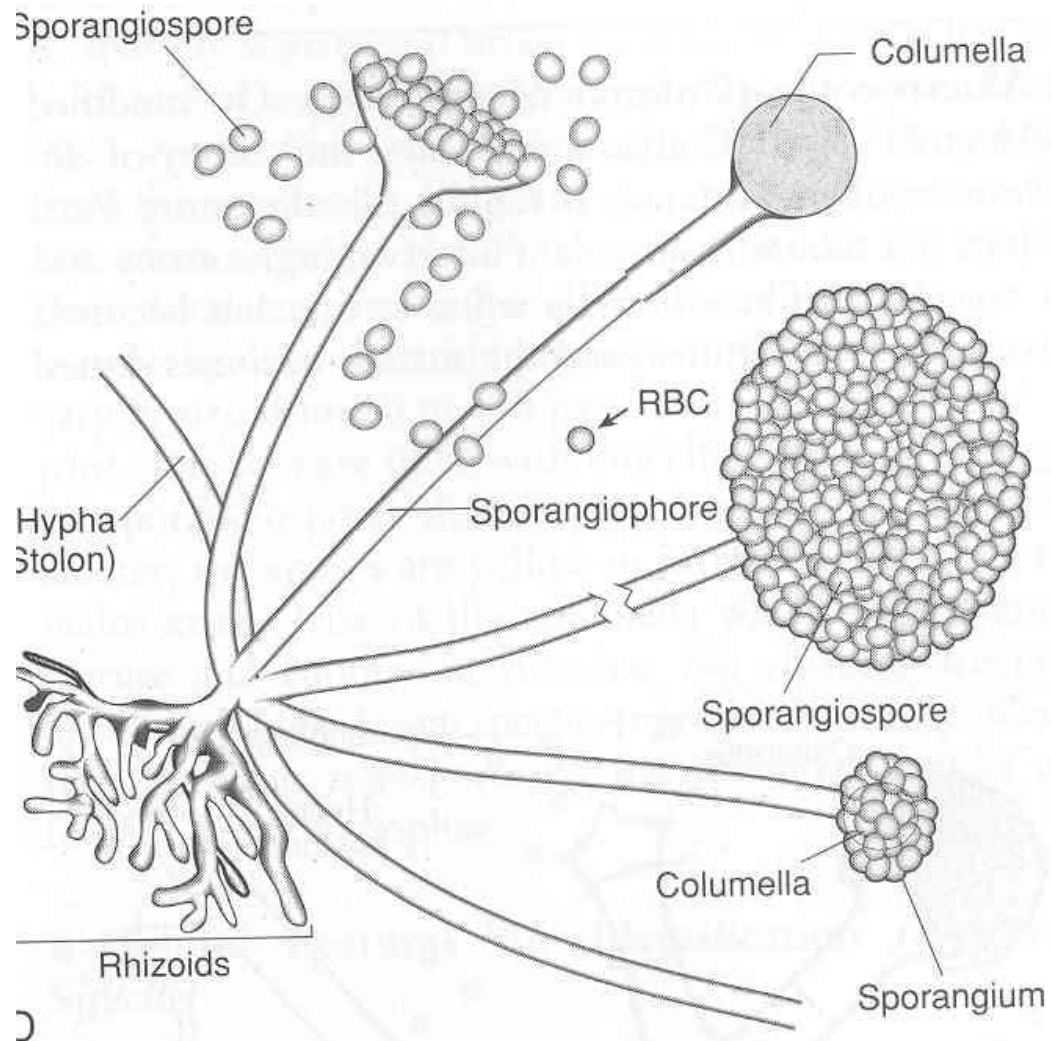


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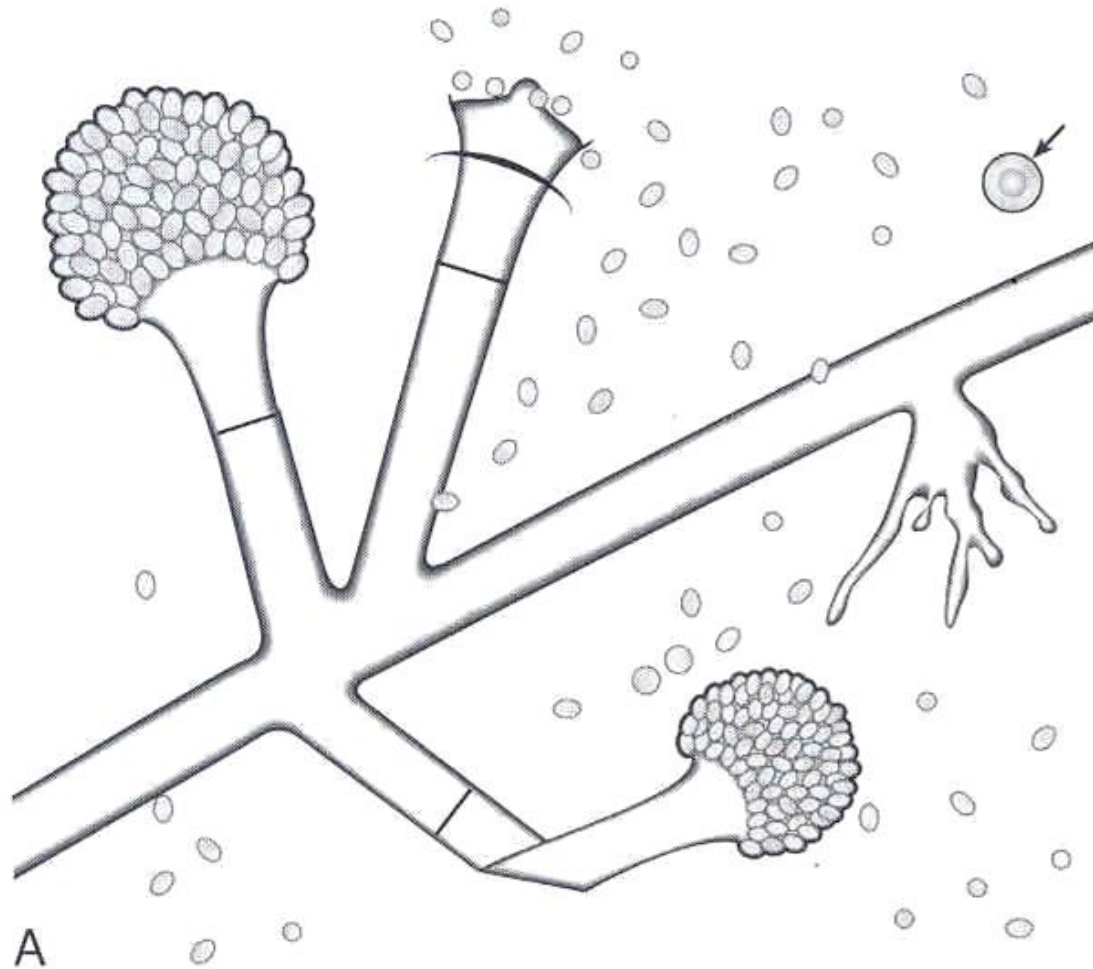
Mucor sp.



Rhizopus sp.



Absidia sp.



- Good aural hygiene and drying after exposure to water are desirable.
- The ear canal should be cleaned carefully, if necessary using 5 percent aluminum acetate solution to reduce edema and remove cerumen and epithelial debris.
- Lesions may respond to the drying effect of simple treatment with 70 percent alcohol, but an aqueous solution of 0.02 to 0.1 per cent phenyl mercuric acetate, thymol(1 per cent) in metacresyl acetate, are more effective drugs.

Treatment

- Altering the environment of the external auditory canal with acidifying/drying agents
- Thorough cleaning and drying of canal
- Topical antifungals
- Topical natamycin or nystatin
- Imidazole cream , such as clotrimazole or econazole nitrate
- Gauze pack soaked in amphotericin B , natamycin or an azole
- Burrow's solution or 5% aluminum acetate solution
- An aqueous solution of 0.02-0.1% phenyl mercuric acetate
- 1% thymol in metacresyl acetate, or iodochlorohydroxyquin