DISORDERS OF THE EXTERNAL EAR

Otomycosis (Fungal Otitis Externa)

Example Case Scenarios

Case 1

A 25-year-old female presents with severe itching in both ears for the last couple of years. She habitually cleans her EAC with cotton buds. Occasionally feels ear blockage. No nasal disease history. Otoscopy shows dirty debris with blackish spots.

Case 2

A 45-year-old male presents with severe itching, deafness, and watery discharge from both ears. Otoscopy reveals white curdy material, paper-like appearance. Pain

occurs on pinna retraction. Resident of hot and humid area.

Case 3

A 25-year-old female presents with severe itching in right ear. Weather is hot and humid. Otoscopy shows white yogurt-like material in the EAC. Tuning fork tests reveal conductive hearing loss.

Case 4

A 25-year-old female swimmer presents with left earache and severe itching. Otoscopy shows wet paper-like discharge. Tympanic membrane is intact.

🧠 Diagnosis

Otomycosis (Fungal Otitis Externa)

> Superficial fungal infection of the external auditory canal, often in hot, humid climates or with water exposure (swimming).

Causative Organisms

Organism	Appearance on Otoscopy
Aspergillus niger	Black-headed filamentous growth (black spores)
Aspergillus fumigatus	Pale blue/green, sometimes yellow spores
Candida albicans	White creamy/curdy deposits

📖 History Features

- Intense itching
- Earache / pain, especially on pinna manipulation
- Musty odor with watery or serous discharge
- Ear blockage / fullness
- Desquamation / flaking skin
- Predisposing factors:

- Hot and humid environment
- Frequent water exposure (swimming)
- Ear cleaning with cotton buds → trauma

🔎 Examination & Investigations

- Otoscopy:
  - A. niger → black spores, filamentous growth
  - A. fumigatus → pale blue/green/yellow spores
  - Candida → white curdy material
- Meatal skin → red, edematous, sodden
- Fungal mass → white, brown, or black, like wet paper
- Tuning fork tests → sometimes conductive hearing loss

Treatment

🧹 Ear Cleaning / Toilet

- Syringing, suction, or mopping

- Remove debris and fungal mycelia

🧴 Topical Antifungal Therapy

- Nystatin → for Candida
- Clotrimazole → broad-spectrum
- Povidone iodine → antifungal antiseptic

🧪 Adjunct Measures

- 2% Salicylic acid in alcohol → keratolytic, removes superficial epidermis + fungal mycelia
- Keep ear dry
- If bacterial superinfection → antibiotic/steroid drops

🗂️ Treatment Flowchart

Otomycosis Diagnosis → Assess fungal type & severity → Ear toilet (remove debris) → Topical antifungal therapy (Nystatin for Candida, Clotrimazole / Povidone

iodine for Aspergillus) → Keep ear dry → If bacterial infection → add antibiotic/steroid drops

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🧬 Types of Otomycosis

- Aspergillus type → A. niger or A. fumigatus
- Candida type → Candida albicans

🎯 Exam Pearls

⭐ Hot, humid climate or swimming → predisposing factor

⭐ Severe itching + white/black discharge → classic sign

⭐ TM usually intact

⭐ Black spores → A. niger, White curdy → Candida

⭐ Ear cleaning habits worsen condition

⭐ Conductive hearing loss may be mild, usually reversible

⭐ Keep ear dry is essential for treatment success

Subperichondrial Abscess (Auricular Abscess)

🧾 Example Case Scenario

Case 1

A boxer presented with painful swelling on right pinna for 4 days. He had fever, redness, and tenderness.

> Classic post-traumatic auricular abscess, often following trauma like boxing or ear injury.

🧠 Diagnosis

Subperichondrial abscess

> Infection between cartilage and perichondrium, leading to swelling, redness, and pain. Risk of cartilage necrosis if untreated.

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📖 History Features

- Red, hot, painful pinna
- Swelling / tenderness
- Fever
- History of trauma or minor injury to ear
- Abscess formation between cartilage and perichondrium

🔎 Investigations

- Culture & Sensitivity (C/S) → identify causative bacteria
- Rule out cellulitis or perichondritis

- Systemic antibiotics → target common skin pathogens
- Analgesics → relieve pain
- Topical antiseptics / dressing
  - 4% aluminum acetate compress

🔪 Surgical Management

- Incision & drainage → if abscess formed

🗂️ Treatment Flowchart

Pinna swelling + pain + fever → Suspect subperichondrial abscess → Start systemic antibiotics & analgesics → Apply antiseptic dressing / 4% aluminum acetate compress → If abscess formed (Incision & drainage) → Culture & Sensitivity → Adjust antibiotics accordingly

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🎯 Exam Pearls

⭐ Usually post-trauma (e.g., boxing, piercing)
⭐ Red, tender, hot pinna + fever → classic presentation
⭐ Early antibiotics prevent cartilage necrosis / deformity
⭐ Incision & drainage required if abscess is present
⭐ Dressing with aluminum acetate helps reduce inflammation

Auricular Hematoma

🧾 Example Case Scenario

Case 1
A 20-year-old boy presented after a fight with swelling over the left pinna. Swelling is soft, slightly tender, and there is no fever.

> Classic auricular hematoma, often seen in trauma or contact sports like boxing or wrestling.

🧠 Diagnosis

Auricular Hematoma

Collection of blood between the cartilage and perichondrium, usually post-trauma.

📖 History Features

- Recent trauma to ear (blunt injury, fight, sports)
- Swelling over pinna
- Soft, slightly tender
- No systemic symptoms (fever absent)

🔎 Examination

- Swelling usually fluctuant / soft
- Mild tenderness

- Skin may be reddened if chronic

⚠️ Complications

Complication	Mechanism
Perichondritis	Infection of perichondrium if hematoma not drained
Abscess	Secondary bacterial infection
Relapsing polychondritis	Rare; chronic inflammation of cartilage
Keloid / "Cauliflower ear"	Fibrous thickening if untreated

🗂️ Management Flowchart

Post-trauma ear swelling → Soft, fluctuant, tender, no fever → Hematoma → Early drainage to prevent cartilage necrosis → Compression dressing to prevent

reaccumulation → Monitor for infection (perichondritis / abscess) → If infected (Antibiotics ± drainage)

🎯 Exam Pearls

⭐ Auricular hematoma is common in contact sports

⭐ Soft, tender, post-trauma swelling distinguishes it from abscess

⭐ Early drainage + compression prevents cauliflower ear

⭐ Watch for secondary infection → perichondritis / abscess

⭐ Chronic untreated hematoma → keloid or deformity

Malignant Otitis Externa (Necrotizing Otitis Externa)

🧾 Example Case Scenarios

Case 1

A 45-year-old male, known diabetic, presented with severe right-sided earache and blood-stained discharge. On microscopic examination, the external auditory canal (EAC) is tender with granulations. CT scan normal.

Case 2

A 60-year-old male, uncontrolled diabetic, presented with severe pain and blood-stained discharge from the right ear for 3 days. Otoscopy revealed fleshy granulation tissue on the floor of the EAC.

Case 3

A 40-year-old female presented with intense right earache, blood sugar 400 mg/dL Otoscopy shows granulations in the EAC, CT scan normal.

Case 4

A 45-year-old diabetic presented with severe left ear pain, not relieved by analgesics, blood sugar 320 mg/dL Granulations seen in the EAC.

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Classic Malignant Otitis Externa — severe, necrotizing infection of the external ear canal in diabetic or immunocompromised patients.

🧠 Diagnosis

Malignant Otitis Externa (Necrotizing Otitis Externa)

Aggressive infection of EAC with osteomyelitis of temporal bone, usually caused by Pseudomonas aeruginosa.

🦠 Pathogen

- Pseudomonas aeruginosa (most common)

⚠️ Complications

Complication	Mechanism / Consequence
Sepsis	Systemic spread of infection
Cranial nerve palsies	Usually IX–XII involvement
Meningitis	Extension into intracranial space
Brain abscess	Rare, from medial spread
Osteomyelitis	Temporal bone and skull involvement

📖 History Features

- Diabetic or immunocompromised
- Severe, unrelenting ear pain
- Blood-stained discharge
- Granulation tissue eroding EAC

- Possible facial nerve paralysis
- Fever may or may not be present

🔎 Examination

- Otoscopic exam:
    - Granulation tissue at floor of EAC
    - Swollen, tender EAC
    - Epithelial erosion may be present
- Pain often out of proportion to findings

🧪 Investigations

Investigation	Findings / Role
Audiometry	Conductive hearing loss; sensorineural if nerves involved
CT scan	Bony erosion of temporal bone

Gallium-67 CT scan	Soft tissue infection; monitor treatment response
Technetium-99m bone scan	Bone infection; not useful for monitoring long-term
MRI	Extent of soft tissue involvement
Culture & Sensitivity	Pseudomonas; guide antibiotics

🗂️ Spread of Infection

- Anteriorly → Temporomandibular fossa
- Posteriorly → Mastoid
- Medially → Middle ear & petrous bone

Treatment

🩺 Medical Management

- Control diabetes / immunocompromised status

- Ear toilet → clean granulations & debris
- Antibiotic therapy (6–8 weeks):
  - Ciprofloxacin, Ofloxacin, Levofloxacin ± Rifampin
  - Gentamicin + Ticarcillin IV
  - 3rd generation cephalosporins (Ceftriaxone / Ceftazidime) ± Aminoglycosides
  - Adjust according to C/S results
- Ear dressing → Bismuth Iodide Paraffin Paste (BIPP)

🗂️ Management Flowchart

Diabetic / immunocompromised patient with severe ear pain + blood-stained discharge
– Otoscopy: Granulation tissue in EAC
– Culture & Sensitivity → Start antipseudomonal antibiotics
– Imaging (CT / MRI / Gallium) → Assess extent & bone involvement
– Ear toilet + BIPP dressing

- Monitor response & adjust antibiotics
- Surgical debridement only if unresponsive

🧬 Differential Diagnosis

- Tumors of EAC
- Keratosis obturans
- Boil / Furuncle
- Otitis externa (simple)
- Ear canal carcinoma

🎯 Exam Pearls

⭐ Always suspect in diabetic / immunocompromised patients with severe ear pain
⭐ Granulation tissue at floor of EAC is key
⭐ Pain out of proportion to clinical findings
⭐ Pseudomonas is main pathogen
⭐ Monitor with Gallium-67 scan for treatment

response

⭐ Untreated → osteomyelitis, cranial nerve palsies, intracranial complications

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-> The End <-

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