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Otomycosis Caused by *Trichophyton mentagrophytes*: About Two Cases

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Abstract **Case Report**

Otomycosis is a common superficial fungal infection that affects the external auditory canal. The infection may present as acute, subacute, or chronic, and is typically unilateral, the species causing fungal infection in the ear include molds, yeasts. Members of the dermatophytes, normally seen from infected skin and nails, have seldom been implicated in otomycosis. Both patients had presented with unilateral ear pain and reduced hearing. on examination of a swab, secretions bearing fungal filaments of dermatophyte elements. Culture yielded *Trichophyton mentagrophytes.* The dermatophytic infection of the ear is a rare condition whose symptoms are not specific and their diagnosis requiring a careful sampling and mycological examination.

Keywords: Otomycosis, *Trichophyton Mentagrophytes, Mycological Profile*.

INTRODUCTION

Otomycosis is a common superficial fungal infection that affects the external auditory canal. The infection may present as acute, subacute, or chronic, and is typically unilateral, with the bilateral form being more common in immunocompromised patients. The infection is present globally, with prevalence ranging from 9% to 30% in patients with the signs and symptoms of external auditory canal infection [1-3]. The species causing fungal infection in the ear include molds, yeasts [4]. The predominant molds are A niger, A fumigatus, and A flavus, and C parapsilosis is the predominate yeast isolate. Members of the dermatophytes, normally seen from infected skin and nails, have seldom been implicated in otomycosis [5, 6]. We report two cases of Trichophyton mentagrophytes otomycosis, diagnosed at the Parasitology-Mycology Laboratory of the Moulay Ismail Military Hospital of Meknes.

OBSERVATION 1

67 is a 53-year-old patient with no notable medical history, who presents with ear discharge and itching associated with hearing loss. The otological examination revealed inflammation of the external auditory canal with yellowish discharge. The patient underwent an ear swab from both ears, and the direct examination under the microscope was positive, showing septate mycelial filaments. The culture on Sabouraud-chloramphenicol medium incubated at 30°C isolated, after 6 days, extensive flat colonies that were powdery, white in color with a yellowish to brown underside (figure 1). Microscopic examination and a positive urease test confirmed the identification of Trichophyton mentagrophytes (figure 2).

Figure 1: Macroscopic appearance of Trichophyton mentagrophytes colonies showing whitish, flat, and powdery colonies

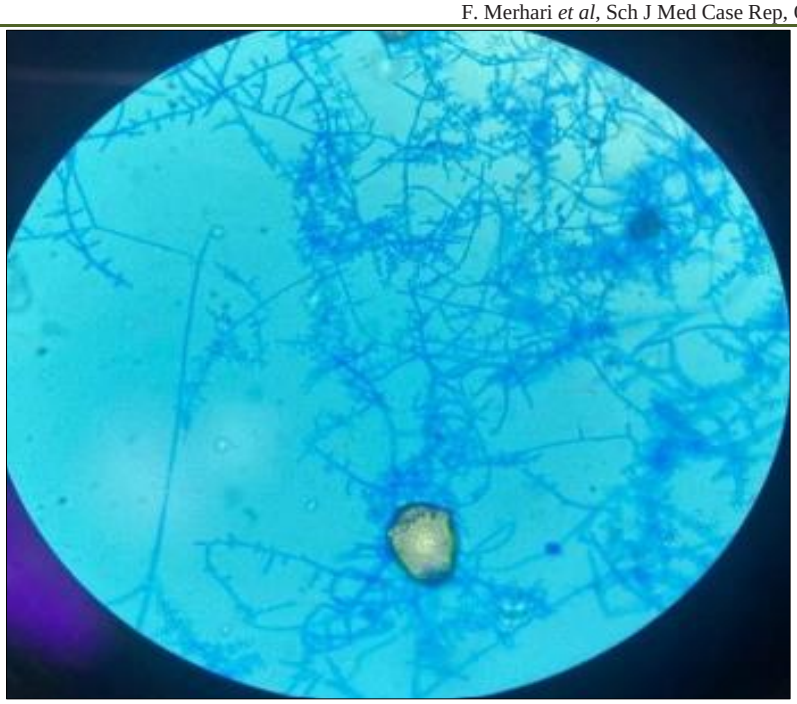

Figure 2: Microscopic appearance of Trichophyton mentagrophytes cultures. Septate mycelial filaments with angled branching and round microconidia clustered in groups

OBSERVATION 2

Is a 43-year-old patient with a history of Behçet's disease, on colchicine, who presents with ear pain and discharge associated with tinnitus and hearing loss that prompted the consultation. The otological examination revealed inflammation with the presence of earwax and pus in a perforated middle ear. The rest of the clinical examination was unremarkable, with no skin or nail fungal lesions. The patient underwent an ear swab from both ears, and the direct examination was positive. The culture examination and a positive urease test indicated Trichophyton mentagrophytes (figure 3_4).

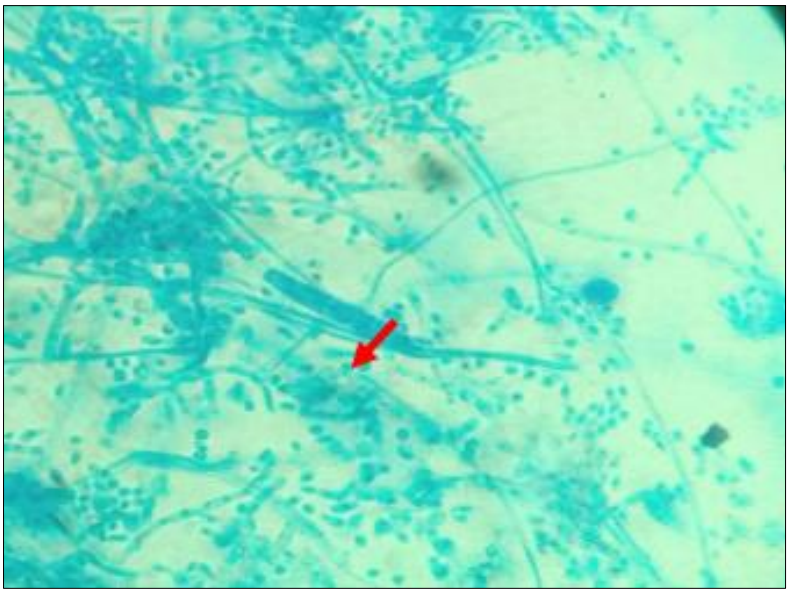

Figure 3: Microscopic appearance of Trichophyton mentagrophytes cultures. Smooth-walled, sausage-shaped macroconidia (arrow)

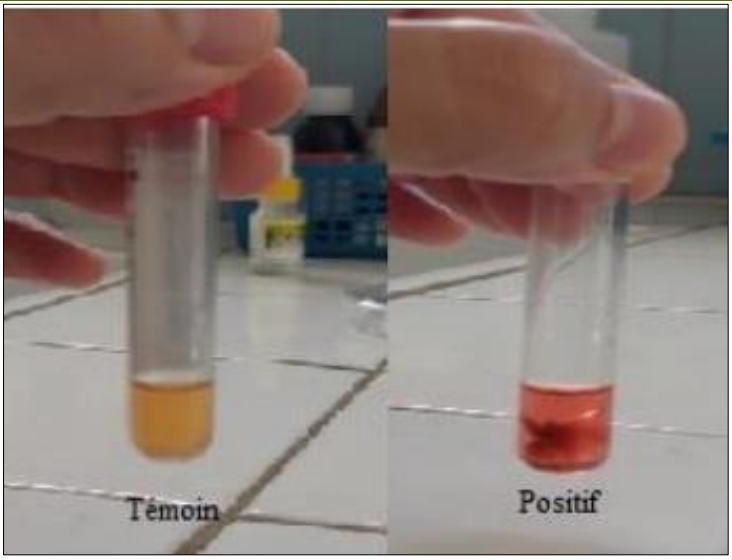

Figure 4: Urease test

DISCUSSION

Otomycosis diagnosis is primarily based on a patient's history and clinical presentation, as well as an otoscopic examination of the ear canal and eardrum. However, additional tests such as microbiological analysis or histological examinations may be necessary to confirm the diagnosis and determine the causative organism, especially in severe or chronic cases of otomycosis. Imaging studies may also be used in rare cases to assess the extent of the infection or rule out other potential causes of symptoms [7-11].

Laboratory-based evidence for otomycosis diagnosis is obtained using conventional methods. Microscopic examination is an easy, low-cost, and fast method that is irreplaceable for detecting fungi in patient material. Wet mount (native or with chloralactophenol or KOH) is still a convenient technique for screening and direct microscopy examination, providing prompt detection of fungal blastoconidia–yeast and pseudohyphal–hyphal forms in patient material [12].

Cultivation, isolation, and identification of the fungus from the sampled material remain the gold standard for accurate diagnosis Dermatophytes sometimes cause otomycosis to develop in immunocompetent patients because the external ear canal is covered with keratinized squamous epithelium. Effects of dermatophytes on the skin are found on the auricle of the ear, but rarely in the auditory canal or the tympanic membrane. Itresembles dry, scaly, and itching eczema. Patients often report a history of many years of ringworm on different parts of the body. The frequent etiologic species are T rubrum, T mentagrophytes, M canis, and E floccosum. It is strongly,recommended that patients with otomycosis caused by dermatophytes undergo a whole body examination for this infection and be properly treated for dermatophytosis. These patients tend to relapse due to transmission and reinfection from another affected part of their body [13].

In general, otomycosis can be diagnosed by clinical examination. Clinical examination, the most frequent symptom is pruritus; and otalgia in the most advanced stages, otorrhea and/or hypoacusis [14]. We found the same symptoms in our patients most authors agree that dermatophytes are rarely found in otomycosis [15]. Y. Merad *et al*., conducted a study of 3124 patients with auricular signs which resulted in the isolation of 52 dermatophytes, of which 3.84% were T. mentagrophytes.

CONCLUSION

The dermatophytic infection of the ear is a rare condition whose symptoms are not specific "and their diagnosis requiring a careful sampling and mycological examination.

REFERENCES

1. Fasunla, J., Ibekwe, T., & Onakoya, P. (2008). Otomycosis in western Nigeria. *Mycoses*, *51*(1), 67-70.
2. Agarwal, P., & Devi, L. S. (2017). Otomycosis in a rural community attending a tertiary care hospital: assessment of risk factors and identification of fungal and bacterial agents. *Journal of clinical and diagnostic research: JCDR*, *11*(6), DC14.
3. Mofatteh, M. R., Yazdi, Z. N., Yousefi, M., & Namaei, M. H. (2018). Comparison of the recovery rate of otomycosis using betadine and clotrimazole topical treatment. *Brazilian journal of otorhinolaryngology*, *84*, 404-409.
4. Tasić-Otašević, S., Golubović, M., Đenić, S., Ignjatović, A., Stalević, M., Momčilović, S., ... & Arsić-Arsenijević, V. (2020). Species distribution patterns and epidemiological characteristics of otomycosis in Southeastern Serbia. *Journal de mycologie medicale*, *30*(3), 101011.

5. Buzina, W., Lang-Loidolt, D., & Ginter-Hanselmayer, G. (2004). Trichophyton rubrum in the external auditory meatus. *Mycoses*, *47*(1-2), 85-86.
6. Ozcan, M., Ozcan, M. K., Karaarslan, A., & Karaarslan, F. (2003). Concomitant otomycosis and dermatomycoses: a clinical and microbiological study. *European archives of oto-rhino-laryngology*, *260*, 24-27.
7. Vennewald, I., & Klemm, E. (2010). Otomycosis: diagnosis and treatment. *Clinics in dermatology*, *28*(2), 202-211.
8. Viswanatha, B., & Naseeruddin, K. (2011). Fungal infections of the ear in immunocompromised host: a review. *Mediterranean journal of hematology and infectious diseases*, *3*(1).
9. Wu, S., Cheng, Y., Lin, S., & Liu, H. (2021). A Comparison of Antifungal Drugs and Traditional Antiseptic Medication for Otomycosis Treatment: A Systematic Review and Meta-Analysis. *Frontiers in Surgery*, *8*, 739360.
10. Munguia, R., & Daniel, S. J. (2008). Ototopical antifungals and otomycosis: a review. *International journal of pediatric otorhinolaryngology*, *72*(4), 453-459.
11. Panigrahi, M., Paty, B., Parida, B., Padhi, S., Kumari Sahu, S., Narasimham, M. V., & Mohanty, I. (2019). Clinicomycological study of Otomycosis with antifungal susceptibility testing of fungal isolates. *IOSR-JDMS*, *18*, 7-12.
12. Otašević, S., Momčilović, S., Stojanović, N. M., Skvarč, M., Rajković, K., & Arsić-Arsenijević, V. (2018). Non-culture based assays for the detection of fungal pathogens. *Journal de mycologie medicale*, *28*(2), 236-248.
13. Vennewald, I., & Klemm, E. (2010). Otomycosis: diagnosis and treatment. *Clinics in dermatology*, *28*(2), 202-211.
14. Pontes, Z. B. V. D. S., Silva, A. D. F., Lima, E. D. O., Guerra, M. D. H., Oliveira, N. M. C., Carvalho, M. D. F. F. P., & Guerra, F. S. Q. (2009). Otomycosis: a retrospective study. *Brazilian Journal of otorhinolaryngology*, *75*, 367-370.
15. English, M. P. (1957). Otomycosis caused by a ringworm fungus. *The Journal of Laryngology & Otology*, *71*(3), 207-208.