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Case Report

Fungal suppurative otitis media: a rare case report

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ABSTRACT

A chronic inflammatory middle ear cleft syndrome also known as chronic otitis media (COM) results in the partial or total loss of the tympanic membrane and ossicles. The most common isolates in the majority of the investigations were *Pseudomonas aeruginosa*, *Streptococcus pneumonia*, and *Staphylococcus aureus*. *Candida species* and *Aspergillus species* were the uncommon isolates. In our study a 70-year-old woman who has been having left ear discharge for around 20 days and has a history of left chronic otitis media (COM) tubotympanic illness over the previous six months. On clinical examination of the left ear using otoscope, otomycotic debri in the outer ear canal was observed with a moderate sized perforation over the postero-superior and postero-inferior quadrants of tympanic membrane. Two swab samples were taken from the left ear discharge primarily for the microbiological investigations. The findings showed a predominance of fungal growth but no bacterial growth was observed. The patient was medically managed with 2% acetic acid wash and topical clotrimazole drops for 2 weeks and tablet itraconazole 200 mg BD for 4 weeks. The patient was symptomatically better after 4 weeks of treatment. Our case is unique of its type as fungal cause of CSOM is extremely rare.

Keywords: Fungal, Chronic suppurative otitis media, Immunocompetent

INTRODUCTION

A chronic inflammatory middle ear cleft syndrome also known as chronic otitis media (COM) results in the partial or total loss of the tympanic membrane and ossicles. It also frequently causes long-term consequences, such as persistent ear discharge and deafness.[1] Worldwide 39 to 200 million individuals experience severe hearing loss and 65 to 330 million people suffer from draining ears among which chronic suppurative otitis media condition reported a mortality rate of 28000.[2] Globally, an anticipated point prevalence for CSOM accounts more than 200 million cases wherein the incidence rate of COM was found to be 4.76%.[3] In India, the average frequency of COM is 5.2%.[2] The most common isolates in the majority of the investigations were *Pseudomonas aeruginosa*, *Streptococcus pneumonia*, and *Staphylococcus aureus*. *Candida species* and *Aspergillus species* were the uncommon isolates.

CASE REPORT

A 70-year-old woman who has been having left ear discharge for around 20 days and has a history of left chronic otitis media (COM) tubotympanic illness over the previous six months. Although, she has been receiving antimicrobial medication for the last 15 days, the left ear discharge remained persistent. The patient is a non-diabetic and is immunocompetent. On clinical examination of the left ear using otoscope, otomycotic debri in the outer ear canal was observed with a moderate sized perforation over the postero-superior and postero-inferior quadrants of tympanic membrane. Suction clearance of the otomycotic spores were done under endoscopic guidance. Further, two swab samples were carefully taken from the left ear discharge primarily for the microbiological investigations which includes the Gram stain, Potassium hydroxide mount, bacterial and fungal culture of left ear discharge. Gram staining and KOH preparation were performed on first aural sample. A blood

agar medium was used to inoculate the second swab. Consequently, the Gram staining of the patient's auditory discharge yielded the following microbiological results, absence of bacteria and the presence of *Aspergillus species* (mold) were seen in culture (Figure 1).

Figure 1: *Aspergillus* spp. observed as dark brown/black colonies grown on blood agar.

Then, the potassium hydroxide mount exhibits an acute angle branching long hyphae, jet black conidiospores (Figure 2).

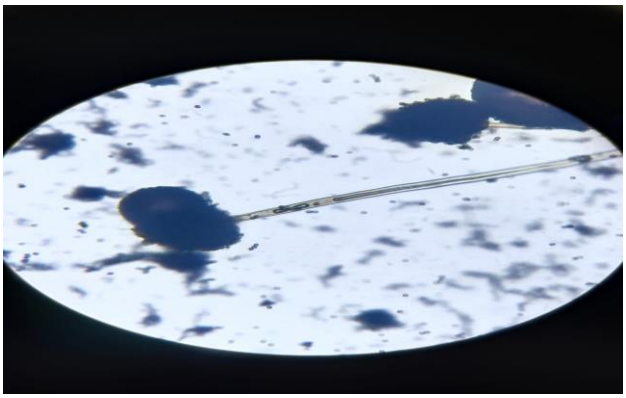

Figure 2: The potassium hydroxide (KOH) mount exhibited acute angle branching long hyphae, jet black conidiospores.

The findings showed a predominance of fungal growth but no bacterial growth was observed. Based on their microbiological observations and analysis, the phenotypical confirmation revealed the critical characteristic feature of biseriate structure of phialides and the dark-colored conidia as Aspergillus niger which is known to be the etiological agent for chronic otitis media (COM). The patient was admitted for 2 weeks and was started on 2% acetic acid wash twice a day along with topical clotrimazole (1% w/v) for 2 weeks. Patient was also started on tablet itraconazole 200 mg bd for 4 weeks. The patient had come for weekly follow-up and at the end of 4 weeks, the patient was symptomatically better and the ear was dry. At the end of 4th week, the swab was again collected from the left ear for microbiology culture and sensitivity, however no bacterial or fungal growth were detected.

DISCUSSION

The recurring fungal infection of the outer ear canal is referred to as otomycosis. In the tropical areas, the prevalence of otomycosis is elevated, wherein *Aspergillus species* are thought to be the main causative agents, describing 48.9% of all otomycosis presentations.[4] The causative agents such as *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Proteus mirabilis* and *Pseudomona aeruginosa* are the significant aerobic bacteria in chronic suppurative otitis media. On the other hand, *Clostridium spp*. are the primary anaerobic bacterial etiological agents of CSOM.[5,6] The most common fungal etiology of CSOM is the *Aspergillus species*, which are frequently observed in immunocompromised individuals with discharging ears.[7] The patient in this case was an elderly female who was immunocompetent, non-diabetic, and presenting with recurrent episodes of left ear discharge and associated itching; the patient was not responding to oral and topical antibiotics; ear swab for culture and sensitivity was negative for bacterial growth and it grew *Aspergillus niger*. The patient was started on 2% acetic acid wash twice a day along with topical clotrimazole (1% w/v) for 2 weeks. Patient was also started on Tablet itraconazole 200 mg bd for 4 weeks.[8,9] It is considered as an effective antifungal therapeutic option as it stops fungal growth in the ear blocking them from the formation of their protective covering. The patient was symptomatically better after 4 weeks of treatment.

CONCLUSION

The causative origin for CSOM includes both bacterial and fungal species. Fungal-induced CSOM is an unusual condition, and fungal-induced chronic inflammatory middle ear cleft syndrome in an immunocompetent person is a rare manifestation of the disease. Consequently, it is advised that every case of CSOM be thoroughly and promptly investigated for fungal etiology using standardized laboratory assessments. This will help to prevent serious complications linked to CSOM by providing guidance at the appropriate and timely management and treatment of CSOM. Fungal infections are on the rise as a result of the widespread and inappropriate usage of antibiotic ear drops. With this case study, we anticipate raising awareness regarding the most common fungal disease that cause ear infections in the CSOM.

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REFERENCES

1. Chaurasiya AK, Pradhananga RB, Sah NP, Rijal BP, Pokhrel BM, Dulal S. Invasive Aspergillus niger Is

the Sole Etiological Agent for CSOM : A Clinical Case from Nepal. Case Rep Infect Dis. 2021;2021:5556679.
2. World Health Organization. Chronic Suppurative Otitis Media: Burden of Illness and Management Options. 2004. Available at: https://iris.who.int/handle/10665/42941. Accessed on 09 June 2024.
3. World Health Organization. World report on hearing. 2021. Available at: https://www.who.int/publications/i/item/9789240020481. Accessed on 09 June 2024.
4. Tasić-Otašević S, Golubović M, Đenić S, Ignjatović A, Stalević M, Momčilović S, et al. Species distribution patterns and epidemiological characteristics of otomycosis in Southeastern Serbia. J Mycol Med. 2020;30(3):101011.
5. Saranya S, Vazhavandal G, Vallab B, Ganesh M, Ismail A, Uma T. Bacteriological and myco- logical profile of chronic suppurative otitis media in a tertiary teaching hospital, Trichy, Tamilnadu. Int J Pharm Sci Invention. 2015;4(1):13-9.
6. Prakash R, Juyal D, Negi V, Pal S, Adekhandi S, Sharma M, et al. Microbiology of chronic suppurative otitis media in a tertiary care setup of uttarakhand state, India. N Am J Med Sci. 2013;5(4):282-7.
7. Viswanatha B, Naseeruddin K. Fungal infections of the ear in immunocompromised host: a review. Mediterr J Hematol Infect Dis. 2011;3(1):e2011003.
8. Ravindran A, Sagesh M. Effectiveness of oral itraconazole in the management of otomycosis with tympanic membrane perforation. Int J Res Med Sci. 2017;5:1373-6
9. Ambika N, Chaitanya MN, Goud PS, Vantaram D, Sahithi CH, Singh S. A Comparative Study between Clotrimazole Drops and Acetic Acid Wash as a Treatment for Otomycosis. Int J Curr Pharm Rev Res. 2023;15(11):352-6.

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