Global Journal of Otolaryngology
ISSN 2474-7556

Juniper Publishers key to the Researchers

Case Report
Volume 26 Issue 5- July 2024
DOI: 10.19080/GJO.2024.26.556200

Glob J Otolaryngol

Overlooked Foreign Body-Induced Severe Otitis Externa Misdiagnosed as Malignant Otitis Externa

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Submission: July 13, 2024; **Published**: July 30, 2024

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Abstract

Recent increase in unskilled and unsupervised usage of cotton by elderly for regular ear cleaning and itching, cotton retention in ear canal is seen commonly in OPDs. We had a 62-year-old male patient with a history of pain in the right ear for 1.5 months and decreased hearing in right ear for 1 month. He had medical history of Diabetes Mellitus type 2 and hypertension. He was referred to our hospital with provisional diagnosis of Malignant otitis externa. Oto-endoscopy revealed a polypoidal mass in the EAC. We performed debridement of the granulation tissue and retrieved a cotton bud from the ear canal. The patient was put on oral antibiotics according to culture sensitivity. External auditory canal granulations and oedema resolved significantly.

Keywords: Oral antibiotics; External auditory canal; Pediatric; Inflammation; Granulation tissue

Abbreviations: EAC: External Auditory Canal; HRCT: High-Resolution CT; MRSA: Methicillin Resistant Staphylococcus Aureus

Introduction

Cotton buds, invented in the early 1920s, have gained global popularity for their accessibility and simplicity of use. Their unskilled usage leads to complications such as perforation of tympanic membrane from direct trauma, otitis externa due to injury to the external auditory canal (EAC) skin, and cerumen impaction caused by pushing ear wax further into the canal. Foreign bodies in the external auditory canal are common, such as Stone, Paper, Beads, Eraser, Cotton buds, Matchstick, Battery, Insect, Seeds, headphone earbuds, thermacoal, Crayons [1]. If foreign body remains in the ear for prolonged duration can lead to exacerbated inflammation of ear canal skin. Chronically impacted foreign body in ear canal of elderly immunocompromised patient, at initial screening can be confused with malignant otitis externa due to overlap of presenting symptoms and for this reason a thorough detailed history and appropriate investigation is of utmost importance for proper management.

Case Report

A 62-year-old male patient presented at World Medical College of medical sciences and research & Hospital in the ENT OPD with a history of sudden onset pain in the right ear for 1.5 months and decreased hearing in right ear for 1 month. He had medical history of Diabetes Mellitus type 2 and hypertension for the past 5-6 years and was on oral hypoglycaemic drugs and anti-hypertensive. He was treated with oral antibiotics and pain killers. There was no improvement in the condition and then he was referred to our hospital with provisional diagnosis of Malignant otitis externa. Otoscopic examination revealed granulations in the external auditory canal (EAC) with watery discharge. Oto-endoscopy further revealed a polypoidal mass in the EAC. Rinne's test was negative in the right ear, and the Weber test lateralized towards the right ear. Pure tone audiometry indicated moderate to severe conductive hearing loss in the right ear.

High-resolution CT (HRCT) of the temporal bone revealed soft tissue in the EAC with no bony erosion, and the facial nerve canal and mastoid were normal. EAC swab culture showed two different organisms: Methicillin Resistant Staphylococcus aureus (MRSA) and Pseudomonas aeruginosa. Excisional biopsy revealed dense inflammatory granulation tissue comprising lymphoplasmacytic infiltrate and proliferating blood vessels. We performed

debridement of the granulation tissue and retrieved a cotton bud from the ear canal. The patient was put on oral antibiotics according to culture sensitivity. EAC granulations and oedema resolved significantly. Therefore, we ruled out the diagnosis of Malignant otitis externa and reported final diagnosis of severe otitis externa secondary to foreign body in EAC.

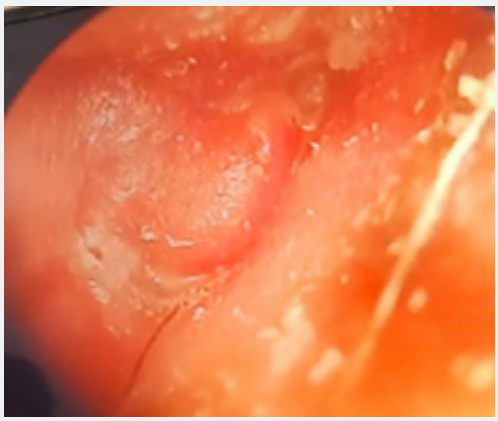

Figure 1: Granulation tissue in External auditory canal.

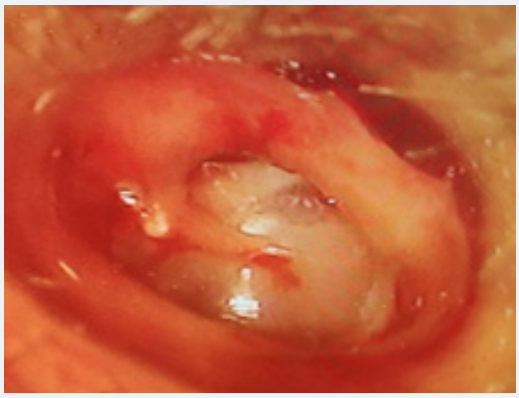

Figure 2: Post debridement and antibiotics.

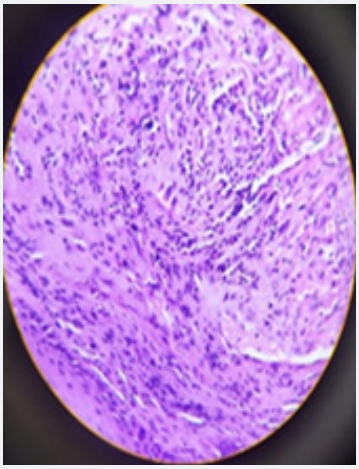

Figure 3: Histopathogical picture of debrided tissue.

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Discussion

Foreign body in ear canal is very common in paediatric and elderly age groups. With recent increase in usage of cotton bud by elderly for regular ear cleaning and itching, cotton bud retention in ear canal is seen frequently in OPDs. Long term presence of such forgotten foreign body can irritate the delicate tissues of the ear canal leading to inflammation. This inflammation prompts the body to produce granulation tissue as part of the healing process. In immunocompromised and diabetic patients this tissue reaction occurs more rapidly and aggressively leading to mass in ear auditory canal [2]. This leads to discharging ear along with decreased hearing. Often these foreign body are overlooked and patients are missed diagnosed with malignant otitis externa. Therefore, thorough detailed history and appropriate investigation is of utmost importance for proper management.

Malignant otitis externa is a severe, potentially life-threatening infection of the external auditory canal that extends to the skull base. It primarily affects immunocompromised individuals, particularly those with diabetes [3]. The condition is typically caused by Pseudomonas aeruginosa and presents with severe otalgia, otorrhea, and granulation tissue at the junction of the bone and cartilage in the ear canal. If left untreated, it can lead to cranial nerve involvement and intracranial complications. Hyung chae yang et al. [4] reported 73-year-old man with diabetes mellitus, chronic otorrhea and otalgia. The man was not responding with empirical treatment. He was misdiagnosed with malignant otitis externa. Later in swollen ear canal trapped cotton swab was found. When it was removed patient improved drastically [4].

Another case reported in Puducheery, where 49-year-Old female presented with ear discharge and decreased hearing. Patient on examination had aural mass in EAC and was not responding to oral antibiotics for 2 weeks. Later, aural mass was excised, they found a wooden stick of 2cm encapsulated with granulation tissue. After removal of foreign body patient responded well to antibiotics [5]. Harris et al. [6] in 2004 reported an external auditory canal polyp and retrieved a plastic electrical cap on surgical exploration in a 9-year-old boy [6].

Abdel Tawab et al. [7] removed neglected cotton pieces in a 19-year-old deaf-mute patient. This patient presented as external auditory canal mass which failed to respond to adequate medical management and the patients were subjected to appropriate imaging and still failed to reveal the foreign body [7]. Like literature reported cases, our patient was also misdiagnosed outside with Malignant otitis externa, later had a neglected foreign body in ear canal leading to severe otitis externa. Therefore, thorough history and detailed examination and investigation should be done before coming to definite diagnosis of Malignant otitis externa in immunocompromised or diabetic patient with aural mass in EAC.

Conclusion

This case demonstrated that in elderly patients unskilled and unsupervised usage of cotton bud can lead to neglected foreign body in ear canal. This often leads to severe otitis externa which should be promptly differentiated from Malignant otitis externa.

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