``-Myiasis infestation in postoperative mastoid cavity

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ABSTRACT

This is a case report of myiasis in modified radical mastoidectomy cavity in a 48 years old male presented in the Department of ENT and Head and Neck Surgery, T.U.Teaching Hospital, Katmandu, Nepal. Around 50 maggots were removed from his mastoid cavity. Patient was managed with turpentine oil and antibiotics which was given to prevent secondary infection. Literature search revealed only one case report of Myiasis infestation in a postoperative mastoid cavity.

Keywords: Myiasis, mastoid cavity, post operative, Kathmandu.

INTRODUCTION

Although aural myiasis is not a common manifestation in the field of otorhinolaryngology, the possibility of its occurrence always exists.[1] The term myiasis is derived from the Greek word "myia" meaning fly. It causes infestation of live human and vertebrate animals with its dipterous larvae which at least for a certain period feed on the host's dead or living tissue, liquid body substances or ingested food.[2] Aural myiasis is a rare clinical state and occurs frequently in children. Low socioeconomic status, immunocompromised state, debilitated and unhygienic living conditions also may be the contributing factors responsible for myiasis. It is also frequently seen in adults especially those who are mentally retarded.[3] Blood tinged foul smelling discharge, tinnitus, bleeding and pain were reported symptoms in cases of aural myiais.[1]

CASE REPORT

A 48 years old male from a remote area of Nepal presented to ENT department, TU Teaching Hospital with history of discharge, pain, bleeding and maggots coming out of his from right ear for the past 7 days. He also gave history of persistant ear discharge and progressive deterioration of hearing in the same ear for the past 2 years. He had undergone modified radical mastoidectomy 2 years back on the same side for Chronic Suppurative Otitis Media (Attico-Antral) type. On examination, patient was moderately built and was febrile. Otoscopic examination revealed maggots in his right mastoid cavity along with foul smelling purulent discharge. Tuning fork tests showed rinne unresponsive in his right ear and Weber lateralized to the opposite side. Pure tone audiogram showed profound sensorineural hearing loss in his right side whereas his left ear had normal hearing. His systemic examination was normal and he was not suffering from diabetes or any immuno compromised state. He belonged to a low socioeconomic condition and had unhygienic living conditions. On the first day of admission 25 maggots were removed manually while up to 5th day of admission around 7 maggots were removed everyday. Patient was managed with turpentine oil and antibiotic/steroid ear drops topically initially along with intravenous antibiotics. Pus culture revealed Pseudomonas which was managed by intravenous as well as topical antibiotics as per its sensitivity report. Other routine investigations were within normal limits. Once the mastoid cavity was free from maggots, patient was subjected to examination under microscope which revealed residual cholesteatoma. Hence revision radical mastoidectomy under general anesthesia was performed on the 9th day of admission. On 2nd postoperative day patient developed perichondritis on the operated side and it took nearly 1 month to resolve the infection despite two debridement procedures. Then patient was discharged after the infection was controlled. The patient was last followed up at 2 months postoperatively and was found to have dry and clean mastoid cavity free of maggots.

DISCUSSION

Most cases of human myiasis are secondary or accidental. [3] Myiasis is not an uncommon parasitic infestation in the tropics and subtropics, and due to international travel, cases are also encountered outside the endemic region in both Europe and North America.[4] Most of the identified causative agents belong to the Sarcophagidae family. Blowflies (calliphotidae) and flesh flies (sacophagidae) cause myiasis of relatively short duration, by both obligate and /or facultative parasites which mature within 4-7 days usually at the host's body orifices and in wounds.[5]

Myiasis producing larvae attack three main parts of the body. They are cutaneous tissue (furmucular and creeping), body cavities, and body organs.[4,6] Lesions with foul discharge or blood attract and stimulate the female insect to deposit eggs on them.[3] However, larvae may burrow into and destroy the tissue. Rapid

destruction of adjacent tissues, including bone, may result in the death of the host. Tissue destruction may occur by mechanical means and by the production of collagenase.[6] Myiasis in humans may be benign to asymptomatic or may result in mild to violent, disturbances and even death.[8] Infestations of the nose and ears are extremely dangerous because of the possibility of penetration into the brain ; the fatality rate is approximately 8.0% in such cases.[1] If it is not treated appropriately, chronic inflammation of the external auditory canal, chronic otitis media or bony destruction from chronic suppuration may develop.[7]

Myiasis is also frequently seen in adults especially those who are mentally retarded.[3] Our patient is neither children nor mentally retarded. The clinical spectrum is from maggots in the ear, to otalgia, otorrhea, perforation of drum, bleeding, itching, roaring sound, tinnitus, furuncle of the external ear and restlessness.[1] Aural myiasis is easily detectable by otoscopic examination.

The treatment of aural myiasis is simple in early manifestation stage, such as removal of maggots and cleansing the lesion with 70% ethanol, 10% chloroform or normal saline.[8,9,10] Preventive measures should be adopted to reduce the incidence of this infestation.[11]

We used turpentine oil topically to kill maggots. Turpentine oil was soaked in a cotton ball and kept in the infected cavity for 8 hours and then removed. The dead maggots were then removed manually. Prophylactic antibiotic therapy may prevent secondary infection. In our case Pseudomonas was cultured from the pus present in the cavity and patient developed perichondritis in his immediate post operative period. This may be because the patient was taken up for revision surgery before the mastoid cavity infection was controlled adequately even though the cavity was free from maggots. Hence we feel that antibiotics should have been continued for some more time and the deep seated infection, which may have been there due to the maggots, controlled before taking up the case for surgery. Mere maggots free cavity should not be a criterion to attempt surgical intervention. More over it is not clear whether pseudomonas infection attracts flies leading to maggott infestation.

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Fig. 1. Showing maggots after removal from mastoidectomy cavity