CASE REPORT

TUBERCULOUS OTITIS MEDIA IN A 32 YEAR OLD ETHIOPIAN WOMAN

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SUMMARY

Otitis media is one of the commonest upper respiratory tract infections particularly in children. The presence of repeated upper respiratory tract infections could indicate the presence of immunecompromization in adults. Even though the etiologies are mostly bacterial species like S.pneumoniae, H.influenzae and M.catarrhalis for acute ones and many more for the chronic presentations, otitis media can be caused by a number of other etiologic agents. Otitis media as a result of M.tuberculosis is a very rare incident in adults. This is a case report of a 32 year old HIV infected woman from northwest Ethiopia who presented with chronic ear discharge. She was treated repeatedly with different antibiotics which did not bring any improvement until the case was incidentally discovered to have been caused by M.tuberculosis.

Key words: *Ear discharge, otitis media, M.tuberculosis.*

INTRODUCTION

Infections of the ear are considered to be one of the commonest upper respiratory tract infections (URTI). Though the condition is more common in children, it is not uncommon to see adults with discharging ears. Among infections in the ear outstands middle ear infection which is technically called otitis media.[1,2] Otitis media can be caused by a number of microbial agents the commonest being bacterial agents. The three bacterial species which are responsible for the majority of acute middle ear infections are *S.pneumoniae, H.influenzae* and *M.catarhalis*. Many more bacterial species could be responsible for chronic presentations. Apart from bacterial etiologies, fungi, mycobacteria, protozoa and still others could be reasons for the minority of cases. However, these agents are mainly responsible for infections among people with some sort of defects in their immune system.[2]

Though the actual predisposition for chronic suppurative otitis media is not clearly documented, there is some evidence that a number of risk factors could be responsible. Some of these are inadequate antibiotic treatment, frequent URTI, poor living conditions, poor nutrition and poor access to medical care.[2] Co-morbidities like HIV/AIDS, diabetes and malnutrition are also important reasons particularly for unusual forms of middle ear infection. Infection by *M.tuberculosis* is by far the commonest opportunistic disease among HIV infected people. *M.tuberculosis* is special in its capability of infecting virtually any part of our body.

Tuberculous otitis media is considered to be one of the oldest diseases. Involvement of the ears in TB disease is a rare circumstance. It could present as one entity when patients have disseminated tuberculosis.[3,4] The typical presentation is a chronically discharging ear with signs of generalized lack of well-being. Involvement of the cranial nerves and the mastoid bone is suggestive of TB of the ears.[5,6]

REPORT OF OUR CASE

This is a case report of a 32 year old HIV infected female housewife from Gondar town who presented to the University of Gondar Hospital with a six month history of painful discharging left ear without hearing impairment. She was a known HIV patient who was on first line antiretroviral treatment regimen (AZT, 3TC and Nevirapine) and cotrimoxazole preventive therapy for 6 months prior to this presentation.

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For her ear complaints, she visited healthcare professionals several times. She was treated repeatedly with oral antibiotics which she could not tell. Despite the antibiotics, she showed no improvement. She did not have cough, chest pain or previous history of tuberculosis.

In addition to her ear complaints, she then had dyspeptic symptoms like vomiting and epigastric burning sensation and failure to take diet, low grade intermittent fever, moderate to severe weight loss (not quantified). She claimed she was not taking ART appropriately because of the dyspeptic symptoms.
On physical examination, her vital signs were blood pressure of 80/50, pulse rate of 98/min, with normal respiratory rate and body temperature. She was emaciated (chronically sick looking), with left ear full of pus (difficult to visualize the tympanic membrane) and normal right ear. She did not have mastoid tenderness or any lymphadenopathy. In addition she had mild epigastric tenderness. The chest, cardiovascular system, integumentary and central nervous systems were normal on physical examination.

With the working diagnosis of Chronic Discharging Ear with HIV and Dyspepsia, the patient had some tests done. Baseline CD4+ cell count was 54/micro litre of blood while it was 80/micro litre at current presentation. Hematocrit, WBC count and serum K+ were 38%, 4,200/micro litre of blood and 4.1mmol/L.

After admission, antacid, fluid supplementations and vitamins were given. In the meantime she was being investigated for the discharging ear. The usual discharge analysis was ordered. In addition to Gram staining, Culture and Cytology tests, the intern medical doctor in charge of the patient incidentally ordered an Acid Fast Bacilli (AFB) test. While the Gram staining and culture turned out to be negative and the cytology revealed lymphocytosis, the discharge came out to be positive for AFB which was confirmed upon a repeat test. Although this patient did not have signs and symptoms suggestive of pulmonary tuberculosis like cough and chest pain or chest findings on physical examination, chest x-ray was not done during the management of this patient for unknown reason.

Finally she was put on anti-TB (RHZE regimen for the intensive phase) after switching the nevirapine to efavirenz. She was being followed at the ART clinic of the UoG Hospital after discharge. After initiation of the anti-TB, the patient was found to show dramatic clinical improvement including the discharging ear.

DISCUSSION

Discharging ear is not that common in adults; it is mainly a disease of children. Chronic ear discharge as a result of *M.tuberculosis* is even rarer. And when it occurs it mostly does in children. It is usually considered as an old disease.[1,7,8] However, tuberculous otitis media (TOM) is now getting more and more attention as its frequency has risen in developing countries because of the HIV epidemic.[9] Our patient could be more likely to develop any infection in general, and tuberculosis in particular, because of severe defect in her immunity as a result of HIV infection.

Though our case was finally detected as having TOM, there was a significant delay in the diagnosis. It is an example of mismanagement in two aspects. On one hand, she should not have been treated with different antibiotics while she was known to have chronic ear discharge which does not usually respond well to oral antibiotics. The main stay of treatment should have been dry mopping of her ear followed by topical antibiotics or antiseptics.[2,10] On the other hand, early in her course, the patient should have been referred to a setup where she could get an Ear-Nose-Throat (ENT) specialist as recommended by guidelines. In addition, failure to respond to any treatment modality (like antibiotics and drying) should alert on the possibility of other etiologies. The presence of severe defect in immunity should prompt discharge analysis for less commoner causes like AFB.[11] A patient with a chronically discharging ear normally requires an ENT consultation with a specialist before being managed. However, this is not practical in most Ethiopian cities, and a general medical practitioner or other professionals who have not specialized in ENT handle such cases. This could be why our patient was not picked earlier.[2]

Although we were lucky in settling the diagnosis of this patient because of positive AFB test, generally, diagnosis of TOM is not a simple and straight forward one. High index of suspicion and the use of multiple modalities of investigation are recommended to see if tuberculosis is the cause.[12,13]

A high index of suspicion is required cognizant of the fact that cases might not be uncommon in a set up where TB occurs rampantly.[14] Patients typically have a chronic tympanic membrane perforation and ear discharge associated with progressive and profound hearing loss. The presence of TB in other parts of the body, or the presence of facial palsy is highly indica-

tive of TOM.[5,6] In our case, it was not possible to visualize the tympanic membrane because of profuse discharge, but the absence of hearing loss may suggest the absence of severe damage to the tympanic membrane. Symptomatically, our patent had low grade fever, no lymphadenopathy and no mastoid involvement. Mostly fever is unknown in patients with TOM. Regional lymphadenopathy is seen only in a few cases, mainly children. Tuberculous involvement of the mastoid is not uncommon.[14]

Our case improved very well with the start of anti-tuberculosis treatment which signifies that there is no need for surgical intervention in most cases. Surgery is needed in some cases like involvement of the mastoid bone.[5]

The main issue in this case report that can be seen as a limitation in making the diagnosis is that the patient might not have passed through complete evaluation and investigations. This could raise the possibility of disseminated TB involving the affected ear that responded to the anti-tuberculosis treatment.

CONCLUSIONS AND RECOMMENDATIONS

Our case is a very good evidence of the need for high index of suspicion for TOM in situations when a chronically discharging ear is unresponsive to repeated antibiotic therapy and mopping, particularly in patients with some sort of immunosuppression. As there is high prevalence of HIV in Ethiopia, the possibility of facing a patient with TOM should not be out of site.

CONFLICT OF INTEREST

There is no conflict of interest.

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