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FACIAL NERVE PALSY AND MIDDLE EAR EFFUSION FOLLOWING INTRA-AURAL TICK REMOVAL: THE IMPORTANCE OF EAR TOILET.

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ABSTRACT

Intra-aural tick, also known as otoacariasis is commonly seen in Otorhinolaryngology (ORL) clinics, both in paediatric and adult patients. Patients mainly complain of otalgia or ear discomfort. Facial nerve paresis complicating of intra-aural tick is a rare condition. We report a three-year-old girl, who presented with left unilateral facial nerve palsy and middle ear effusion three days after removal of intra-aural tick.

Keyword: Ear canal, Facial nerve palsy, Otoacariasis, Paediatric, Tick paralysis.

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Intra-aural tick, also known as otoacariasis is commonly seen in Otorhinolaryngology (ORL) clinics, both in paediatric and adult patients. Patients mainly complain of otalgia or ear discomfort. Facial nerve paresis complicating of intra-aural tick is a rare condition. We report a three-year-old girl, who presented with left unilateral facial nerve palsy and middle ear effusion three days after removal of intra-aural tick.

Keyword: Ear canal, Facial nerve palsy, Otoacariasis, Paediatric, Tick paralysis.

INTRODUCTION

In northern part of peninsular Malaysia, due to its hot weather, intra-aural tick infestation is commonly seen in Otorhinolaryngology (ORL) clinic throughout the year. Most of the patients are children and commonly present with ear pain. Some cases may be complicated by facial nerve palsy attributed to its toxin. In most of the cases, the tick is seen in the ear canal during the onset of facial nerve palsy.[1-3] However, in this case, only tick fecal material was found as the tick was removed by a general practitioner (GP) earlier and the patient had middle ear effusion together with the onset of facial asymmetry.

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CASE REPORT

A three-year-old girl was referred to ORL clinic with left facial asymmetry of two days duration. Three days prior the onset of left facial asymmetry, she had history of left ear tick foreign body, which was removed by a GP. However, the left ear pain continued until her parents noticed that she drools while drinking. Otherwise she had no associated ear discharge, no fever, no rhinitis or other upper respiratory tract infection symptoms.

On examination, she was alert, conscious and obeying command. On facial examination, she was unable to close her left eye completely and there was a loss of left nasola-

bial fold and wrinkle when she frowned (House Brackmann grade 3) (Figure 1). Otoscopy examination revealed blackish tick fecal material. Examination under microscope of her left ear confirmed that the tick was removed, and only fecal material remained. However the tympanic membrane was dull and bulging with air-fluid level seen. Right ear examination showed normal findings. There was no tragal or mastoid swelling or tenderness. Other systemic examinations were unremarkable.

She was diagnosed with left acute otitis media with effusion and left facial nerve palsy grade 3. She was admitted for parenteral antibiotic ampicillin-sulbactam and underwent left myringotomy with grommet insertion for otitis media effusion. Intraoperatively, serous fluid was drained and grommet size 1.14 inserted.

Figure 1: Left Facial nerve palsy [House Brackmann Grade 3].

Figure 2: Resolution of Left Facial nerve palsy after treatment.

Her left ear pain and facial nerve palsy remarkably improved on day one post operation (Figure 2). Patient was discharged well from the ward.

DISCUSSION

In Malaysia, tick species that has been identified in causing isolated nerve palsy belongs to Ixodidae family.[1] The tick saliva contains a toxin with paralysing effects.[4] This paralysing effect is reported to be associated with the duration of tick attachment. A study by Sood *et al* mentioned that tick attachment beyond 72 hours increased the risk of developing Lyme's disease.[5] Longer infestation period increases the chance of toxin transmission to middle ear. In an intact tympanic membrane, the inflammation process extend to the facial canal via its pre-existing dehiscence or causing oedema and inflamed nerve within the intact canal.[4,6]

In most of the reported cases, the tick is found in the external auditory canal or

near to tympanic membrane when patient presented with facial asymmetry.[1-3]. However, in our case, the tick had already been removed earlier, but the inflammatory process continued due to the presence of the tick fecal matter. The fecal product that was left behind during removal of the tick was likely to be contaminated by tick saliva that contained the neurotoxin. It is likely that the presence of a dehiscence facial canal in our case facilitated the progression of the inflammation to involve facial nerve. This explains the persistence ear pain experienced by patient despite removal of tick. Subsequently, without proper treatment and antibiotic, the inflammation progressed to the middle ear causing otitis media with effusion. Facial nerve compression due to the pressure exerted from the effusion can also lead to facial nerve palsy.

For the management of otoacariasis, the removal of tick is quite challenging especially in paediatric patients compared to adult patients as they have lesser threshold for pain. Usually the ORL doctor will instil sodium bicarbonate ear drop to kill the tick before removing it. Patient will be restrained firmly to prevent any sudden movement, and removal under microscope will be the best method for complete removal of tick and minimizing complication such as trauma to external auditory canal or perforation of tympanic membrane. However, if this procedure fails, then removal under general anaesthesia is the option. Ear canal and tympanic membrane should be cleared from any tick fecal material at the same setting before patient can be discharged home as the tick fecal material, although unknown, may contain a minute amount of neurotoxin. Covering with antibiotics is advisable regardless of duration of tick infestation unless complete removal of tick and its fecal material can be ensured to prevent infection.

There are a few methods of clearing contaminated tick fecal material and body fluids in the ear canal. We would like to suggest in a medical facility without ORL specialty, ear syringing is the easiest method to ensure complete removal of potentially infective material and followed by otoscopic examination post procedure. Referral to ORL clinic is encouraged if complete clearance of the ear canal cannot be achieved. In ORL clinic, ear toileting is best performed under microscope.

CONCLUSION

Tick in the external auditory canal can be a simple case to handle or it may present with sinister complications. We would like to highlight the importance of ear toileting to remove all the remnant of tick and its fecal material in the external auditory canal by any practitioner who encounters the case to prevent the complications. Removal of the intra-aural tick can only be done by a trained professional in a clinic with adequate facilities. The case can also be referred to ORL if complete removal of tick cannot be ensured.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

DECLARATION

Consent for publication including use of photo obtained from patient.

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