Otoacarisis a preventable painful aural condition affecting the farming population of South India

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ABSTRACT

Background: Tick in the ear is a very common acute painful and distressing condition in the flowering months in south India. The mouthparts of the tick attach firmly to the skin of the external auditory canal or the tympanic membrane, sucks blood and swells up.

Methodology: All patients with intra-aural tick infestation who presented with excruciating pain in ear were studied. All the patients managed as outpatients were observed for an hour and advised antibiotics, analgesics for one week. Patients managed under general anaesthesia were observed for a day and discharged on the next day with antibiotics and analgesics. No other complications were seen in the rest of the cases.

Conclusion: Intra-aural tick infestation is an acute painful condition which needs prompt management which resolves with its removal. Facial nerve paralysis is a known complication resulting from local spread of toxin to the nerve while no evidence of tick borne diseases reported in our study inspite of being a potential endemic area for these diseases.

Keywords: Intra-aural tick, otalgia, zoonoses, toxin.

Introduction:

Intra-aural tick infestation is a common condition seen in rubber growing areas during the flowering months of October to March. Intra aural ticks amounts to the rare animate foreign bodies of ear while the inanimate foreign bodies account for about 84%. Patients come with intense otalgia seen in all ages and seen as globular organism attached to mucosa or its blackish fecal particle. Excrutiating otalgia is due to gripping of the ear canal skin and tympanic membrane by its mouthparts. Children and sometimes anxious adults not willing for otoscopy may need general anaesthesia by otomicroscopic removal to relieve pain.

Methodology:

A retrospective study of patients who had intra-aural tick infestations over a period of 10 years were included in the study which ranged from November 2006 to November 2016. All patients with intra-aural tick infestation who presented with excruciating pain in the ear were included.

Tick removal was done under 4% topical anaesthesia in cooperative adult patients in the outpatients clinic while with...
The embedded in the skin. Forced leaves the attached like secretion. Is also attached with a cement- only is embedded in the skin but host with its mouthpart, which not ticks). 

(Soft ticks) and Argasidae (soft shield called scutum i.e, Ixodidae) are isolated based on the presence or absence of a hard shield. 

All ticks located on the tympanic membranes were removed under general anaesthesia with oto-microscopy. Small perforations were seen after removal of the ticks located on the tympanic membranes. No other complications were seen in these cases.

Discussion:

Currently most emerging infectious diseases arise from zoonotic pathogens, many of them are transmitted by tick vectors. Ticks are the most competent and versatile vectors of pathogens ranking second to mosquitoes as vectors of human pathogens, like viruses, bacteria, rickettsia, spirochetes and the most important vector of pathogens affecting cattle worldwide.

Ticks are obligate blood-sucking arachnids which are easily transmitted through domestic animals and pets to humans. Two types are isolated based on the presence or absence of a hard shield called scutum i.e, Ixodidae (hard ticks) and Argasidae (soft ticks). Soft tick attaches to its host with its mouthpart, which not only is embedded in the skin but is also attached with a cement-like secretion. It can voluntarily detach from its host, but when forced leaves the attached mouthpart embedded in the skin. Mouthparts are a source of tick borne diseases even if the organism falls off. Tick swells on feeding blood and becomes visible in the ear canal even in hidden areas.

Ticks are known to cause Rocky mountain fever, tularemia, Lyme disease, Crimean-congo hemorrhagic fever (CCHF), Kyasun forest disease with variable morbidity and mortality. Complications of intra-aural foreign bodies include canal abrasion, laceration or bleeding and sometimes otitis externa, perforation or rupture of the tympanum and supplicative otitis media. Wax if present may hinder the tick removal as it may camouflage the appearance along with the dark brown color of the tick fecal matter which is digested blood. Removal from the canal is better, if complete while remaining mouth parts may result in infection and constant irritation. Facial nerve paralysis has been reported due to intraural tick but tick paralysis is not reported as immunity is reported. A neurotoxin has been isolated from the saliva which is released at the site of attachment which may interfere with the liberation or synthesis of acetylcholine at the motor end plate of muscle fibre.

A perforated tympanum can allow toxin to pass to the middle ear which can paralyse the facial nerve if any dehiscence is present. India being an agricultural country with about 70% people are dependent on income from agriculture where farmers are keeping animals for milk, meat, wool, hide and for farm utilities. 100 tick species are seen in India while identified vectors are genera Rhipicephalus and Hyalomma.

Indian tick typhus (ITT) is a type of rickettsial spotted fever similar to rocky mountain spotted fever (SF) and is caused by Rickettsia conorii which has been reported in Maharashtra, Tamil Nadu, Karnataka, Kerala, Jammu and Kashmir, Uttarakhand, and many other states. Crimean-Congo haemorrhagic fever (CCHF) was not reported in India before the outbreak in Gujarat.

Kyasanur forest disease (Monkey disease) is caused by Kyasanur forest disease virus (KFDV), a member of the family Flaviviridae isolated from a sick monkey from the Kyasanur forest in Karnataka state, India. The disease is localized in five districts (Shimoga, Chikamagalur, Uttar Kannada, Dakshina Kannada and Udupi) of the state and occurs as seasonal outbreaks during December to May when the nymphal activity of the vector ticks in the forest is maximum. The main hosts of KFDV are small rodents, but shrews, bats and monkeys may also carry the virus and transmitted through the bite of an infected tick while the transmission to humans is through the bites of nymphs or by contact with an infected animal.

Theileriosis caused by T. annulata and T. orientalis is the most important tick (H. anatolicum) borne disease affecting cattle and buffaloes and has a significant adverse effect on the productivity and also proves to be fatal if left untreated.

Babesiosis or tick fever, is a febrile disease of domestic and wild animals characterized by extensive erythrocytic lysis leading to anaemia, icterus and haemoglobinuria. The disease is caused by protozoan parasites of the genus Babesia, an intraerythrocytic protozoan parasite transmitted mainly by Rhipicephalus microplus.

Anaplasmosis is an economically important rickettsial disease affecting ruminants and is principally transmitted by Rhipicephalus microplus. It is an infectious, non-contagious
haemotropic disease characterized in acute form by fever, anaemia, weakness, constipation, yellowing of the mucous membranes, lack of appetite, depression, dehydration and laboured breathing.\(^{17,18}\)

In our country, the allotted resources on livestock rearing and research are minimal and so control on zoonoses and tick control are not taken on a noticeable scale. In our study no major tick related diseases are co related with intraaural infestation, so a major controlled study is a need of the hour.

**Conclusion:**

Intra-aural tick infestation is an acute painful condition which needs prompt management resolving with its removal. Facial nerve paralysis is a known complication resulting from local spread of toxin to the nerve while no evidence of tick borne diseases reported in our study inspite of this area being a potential endemic area for these diseases.

**REFERENCES:**