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Thelazia spp. in native and cross bred cows of hilly tracts in Vellore district of Tamil Nadu: A report of 51 cases

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Abstract

Many health care challenges of native cattle exist and remain unattended due to constraints on many fronts. One such challenge was that of thelaziasis in native hilly cattle of Vellore district was documented. Fifty-one cases of cattle eyeworms were diagnosed in hilly cattle, in a retrospective study of 1500 dairy animal and indigenous cattle, which were presented for field veterinary in and around the villages of Vellore district of Tamil Nadu. Among the various ailments presented, 28 cross breed Jersey and 23 non-descript cows reared in hilly regions and adjoining areas were clinically diagnosed to have the eyeworm *Thelazia* spp. Selected animals had inappetance, conjunctivitis, unilateral or bilateral lacrimation and corneal opacity. Live worm scrolling over the cornea and conjunctiva was observed. Majority of the eye worm affected animals were from the hilly regions of Vellore (60.78%) than from plains (39.21%). Prevalence of eye worm was higher (68.62%) during summer followed by monsoon periods (31.37%). Non-surgical management using Ivermectin @ 0.2 mg per kg at weekly interval SC, inj. Placentrex (placental extracts) 2ml sub-conjunctivally and supportive care helped in uneventful recovery.

Keywords: Cattle, eye worm, prevalence, Tamil Nadu

Introduction

Native cattle health care is a critical part of conservation of indigenous germplasm. Many health care challenges of native cattle exist and remain unattended due to constraints on many fronts. When access to veterinary health care is less, avoidable diseases easily flare up and alters farmer's economy. One such challenge was that of thelaziasis in native hilly cattle of Vellore district. The present study documented the incidence of eye worm infection of cattle in a remote rural hilly region of Vellore district, Tamil Nadu, India.

Materials and Methods

The study involved veterinary health assessment of a population of 1500 dairy animals and indigenous cattle, which were presented for field veterinary services offered at the rural hamlets by procurement agencies in and around the hilly villages of Vellore district, Tamil Nadu, during the period of April, 2016 – April, 2017. Among the various ailments diagnosed, 28 cross breed Jersey and 23 native cows were diagnosed to have the eye worm *Thelazia* spp. Based on history further clinical examinations were done. The animal's conjunctival sac and corneal surfaces of eyes were gently examined by manipulating orbital membranes to check for eye worms. Live worm scrolling over the cornea and conjunctiva was observed (Fig.1). Some animals had more than 2 worm infestations in either unilateral or bilateral eye. The diagnosis was confirmed by finding adult worms in eyes of all these 51 cases.

Animals were found to be treated with Inj. Ivermectin @ 0.2 mg per kg body weight SC weekly once, two doses. Ophthalmic antibiotic solutions either Enrofloxacin or Gentamicin at the rate of 3 to 5 drops were instilled twice a day in such cases Inj. Placentrex (placental extracts) – 2ml was given sub-conjunctivally for those animals had corneal opacity. Supportive therapy with inj. Meloxicam 0.2 mg per kg Body weight IM, inj. Chlorpheniramine maleate 0.5mg per kg Body weight IM were practiced for 5 days and inj. Vitamin AD₃E - 5ml IM alternate days for 2 doses were also given.



Fig 1: Live worm scrolling over the cornea and conjunctiva (arrow)



Fig 2: Corneal opacity (arrow) in eye worm affected cattle

Results

While majority of the rural cattle were apparently healthy in this study. However, many farmers / owners were unaware of the presence of eye worms in those cattle. Many have taken it as epiphora and neglected prompt veterinary care. On veterinary assessment we found eye worm challenges in 51 cases. Even if it is a single case, it is a biggest veterinary challenge, given to the complexity of treatment and owner compliance involved in cases with eyeworms. Those Cows were presented with a history of inappetence, conjunctivitis, unilateral or bilateral lacrimation and corneal opacity. Vitals signs were found to be within normal levels. Ocular examination of affected animals revealed mild to moderate conjunctivitis, unilateral or bilateral serous lacrimation, and corneal opacity. Live adult worm scrolling over the cornea and conjunctiva with lacrimation was observed in all these cows. These observations agreed with the previously reported studies [1]. More than 2 worms were observed in one eye in this case. Maximum of 90 parasites observed in one eye by Soulsby, (1982) [2]. Majority of the eye worm affected animals were from the hilly regions of Vellore (60.78%) than from the adjoining plains (39.21%). Prevalence of eye worm was higher (68.62%) during summer season followed by monsoon periods (31.37%). Native cattle (Hilly cattle) were found to had high incidence of eye worm infestation than cross breed animals.

After the treatment all the affected animals recovered following two weeks of continuous clinical care and treatment. Animals showed improvement in feed intake, pink and moist conjunctival membrane, reduction in lacrimation, transparency of cornea and absence of worms were observed in recovered animals.

Discussion

Thelaziasis a round worm parasitic infestation occurring in all domestic animals, birds, wild animals, humans and other

livestock is a challenge to farmers. Tear feeding face fly act as an intermediate host to transmit the eye worm parasite *Thelazia spp.*, from one animal to another animal. Seasonal prevalence was encountered worldwide and clinical occurrence of *Thelazia* infection is maximum during the *Musca* fly activity. Sometimes livestock and wildlife interface areas also got clinical occurrence of Thelaziasis throughout the year. The same way 2 cases of *Thelazia rhodesi* infection reported in the African buffalo in the wild and livestock interface area of the Kafuc basin in Zambia [3].

Vellore district (12°54'40" N 79°8'10"E) in Tamil Nadu, India lies in the Eastern Ghats region and Palar river basin. The topography is almost plain with slopes from west to east. Study area villages comprises of hamlets named, Ariguvarpalli, Palayam, Kothur, Putuwaripalli, Reddiarpalli, Varadhareddypalli, Motur, Gudiyatham, and are located in the altitude of 912 feet. Vellore is located in an interstate border area of Tamil Nadu and Andrapradesh states of India. Average Temperature in this district was 45 °C in summer and 29 °C in winter season. In these areas livestock farmers practicing free range grazing of cattle in the forestry areas, which do have active wild life movements. This could be a reason for the eye worm infestations affecting the cattle in these hilly areas.

Affected animals had mild to moderate conjunctivitis, unilateral or bilateral serous lacrimation, and corneal opacity. The same clinical signs were also reported by various authors [1, 4, 5] in cows which had *Thelazia sp.*, in eye and conjunctiva. Levamisole @ 5 mg/ kg, SC, Ivermectin and Doramectin, both at 0.2 mg/kg, SC or IM, were effective against *Thelazia sp.*, in cattle [6]. In the present study Ivermectin @ 0.2 mg per kg body weight SC was used at weekly interval and was found to be effective. All of them made uneventful recovery, this could be possible due to early identification and interventions.

Many literatures reported that eye worm infestations in cattle were treated surgically and had post-operative complications. The present study reports of successful non-surgical management of eye worm infection in cattle. As this study documented the higher incidence of eye worm infection in hilly cattle of Vellore district, Tamil Nadu, it calls for preventive measures to safeguard indigenous cattle from such threats. It also underscored the need for promotion of rural awareness and intervention programmes, so as to prevent economic losses to poor farmers.

Conclusions

Cattle eyeworm incidence in 51 hilly cattle of Vellore district was documented. Non-surgical management using Ivermectin therapy was found to be successful in the affected animals and all had made uneventful recovery. Early diagnosis can help successful management of eyeworms with only medical therapies and without any need for surgery.

Conflicts of interest: There is no conflicts of interest

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