

Short Communication

PREVALENCE OF BOVINE AORTIC ONCHOCERCIASIS IN KERALA

Aortic onchocerciasis is one of the most common spontaneous affections of bovines in India (Patnaik, 1962). At times it causes aneurysm which ruptures with fatal outcome (Kolte *et al.*, 1976). Patnaik (1962) has reported signs of fits in some of the Red-Sindhi and Haryana bulls of Orissa. The signs were sudden in onset, the affected animals falling down with a thud after slight tremors. The animal stretches its neck while in recumbancy and straightens all four legs and gets up after 2-3 minutes as if nothing had happened. Very high microfilarial count has also been recorded in such animals. Nasser *et al.* (1983) reported that out of 100 cattle examined, 98 had aortic onchocerciasis. In Kerala no study has been conducted on aortic onchocerciasis. In the present study, aorta of 118 animals were examined, which included 106 cattle, 8 buffaloes and 4 dwarf cattle of Kerala.

The aortic tissues for the present study were collected only from the local cattle of Kerala, as majority of the cattle slaughtered in Kerala are brought from outside the state, especially Tamil Nadu.

The samples from one hundred and one out of the 106 cattle had lesions in the aorta and showed the presence of worms. None of the buffaloes or dwarf cattle examined had any lesions or worms in the aorta.

The gross lesions due to the worms in the aorta were zig-zag migratory tracts not distinctly raised from the adjacent intimal surface and small cyst like or nodular

swellings. The worms could be dissected out from the worm tracts and nodular swellings but the contents of the cyst like swellings were calcified materials. It was difficult to get complete worms but few male worms could be collected intact. The female worms embedded in the tortuous worm tracts under the intima could be dissected out only as four or five fragments.

Description of the parasite

The worms were filiform and whitish in colour, the males being shorter and slender than the females. Three males dissected out as entire worms were 69.5 to 78.2 mm long with a maximum breadth of 0.21 to 0.24 mm at about the middle region. Cuticular striations were less prominent in males. The oesophagus showed distinct division into an anterior muscular and posterior glandular part. The tail end was coiled ventrally and possessed caudal alae and 7 pairs of caudal papillae. The spicules were unequal, left one 0.282 to 0.303 mm long and 0.023 mm broad and ended in a sharp point. The right spicule was 0.132 to 0.152 mm long and 0.013 mm broad, bend like a bow and ended distally like a hook. The female worms which could be measured only as fragments of a worm were more than 123 mm in length and 0.049 mm in breadth. The cuticular striations were prominent towards the posterior region and the vulva was 0.79 mm from the anterior extremity. Unsheathed microfilariae could be dissected out from the uteri of gravid female worms and their fixed points were studied by modified Knott's technique. The measurements from 20 microfilariae were as follows:

Characters	Range with mean distance from anterior end in brackets	Mean percentage distance from anterior end
Total length	0.279 to 0.286 mm (0.284)	-
Cephalic space	0.005 to 0.006 mm (0.0057)	2.0
Nerve ring from anterior end	0.078 to 0.092 mm (0.089)	31.3
Excretory pore	0.122 to 0.128 mm (0.125)	44.0
Excretory cell	0.162 to 0.169 mm (0.167)	58.8
G1 and G2 cells	0.183 to 0.193 mm (0.189)	66.5
G3 and G4 cells	0.229 to 0.236 mm (0.232)	81.6
Anal pore	0.251 to 0.259 mm (0.258)	90.8
Last tail nucleus from tail tip	0.009 to 0.011 mm (0.010)	-

Based on the measurements of the worms and the microfilariae, the worms were identified as *Onchocerca armillata*.

The aortic tissues were fixed in 10% neutral buffered formalin and paraffin sections were taken at 5 μ thickness.

Microscopically, fibrous rings were seen around the migratory tracts located sub-intimally in the tunica media (Fig.). Inflammatory reactions of varying intensity were noticed around the worms. Eosinophils were the predominant cells noticed, followed by lymphocytes. Calcification of the media was also a feature in such tissues. Inflammatory reactions were absent in some tissues.

Histological examination of the nodular swellings showed focal areas of calcification in the tunica media. Extensive fragmentation of elastic fibres with compensatory fibrosis was the salient feature of tunica media.

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Aortic bovine Onchocerciasis



Microphotograph of aorta and worms