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EVALUATION OF MORPHOMETRIC FEATURES AND MOLECULAR CHARACTERIZATION OF ITS2 AND 28S GENES OF *ANOPLOCEPHALA* SP. FROM A SRI LANKAN ELEPHANT

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Cestodes of Anoplocephalidae family infect a range of vertebrates that include ruminants, horses, primates, and elephants. Only a few previous studies report the presence of *Anoplocephala* sp. in elephants. As there is no data available on the biology and molecular taxonomy of this species in Sri Lanka, the present work is the first detailed morphological and molecular description of *Anoplocephala* sp. in elephants. Adult worms were recovered at the necropsy of a wild elephant in Udawalawe, Sri Lanka that had severe cestode infection in the small intestine. The tapeworms were tightly attached to the intestinal mucosa. The intestinal mucosa showed hyperaemia, mild ulceration, mucosal thickening and irregular well-demarcated multifocal nodules of variable sizes. Macroscopic and microscopic morphometrics of the worms were obtained and the values are expressed as means (± SEM) and ranges. The length of the strobila was 5.94 ± 0.24 cm and the width ranged from 0.7- 1.8 cm. The mean circumference and the diameter of the scolex were 1.75 ± 0.07 and 0.69 ± 0.01 cm, respectively. The scolex comprised four anteriorly directed oral suckers with a diameter of 0.1 cm. We described the oval-shaped ovary, longitudinal sacculated uterus, numerous transversely arranged testes, osmoregulatory canal, unilateral genital pore, genital atrium, genital papillae, cirrus pouch, internal and external seminal vesicles and ventral longitudinal canal. No lappets were observed beneath the suckers as found in *Anoplocephala perforliata*. We amplified nuclear ribosomal genes (the ITS-2 region and a portion of the 28S gene) and the PCR products obtained were approximately 750 and 1200 bp, respectively. We obtained 598 and 404 bp DNA sequences for the ITS and 28S regions respectively. We compared these DNA sequences with *Anoplocephala perfoliata*, a parasite of horses, as there were no elephant-derived *Anoplocephala* nucleotide sequences available in GenBank. The nucleotide BLAST search revealed that the identity of the ITS2 region characterised (598 bp) is 99% (for a portion, 132/134 bp) between *Anoplocephala* sp. found in this elephant and *A. perfoliata*. The same sequence showed 98% (for a portion, 129/131 bp) similarity with *A. mammilana* (horse). Analysis of the large ribosomal sub unit 28S gene indicated 95% similarity between *Anoplocephala* sp. in this elephant and *Anoplocephaloides dentata, Paranoplocephala kalelai* and *Paranoplocephala blanchardi*. We suggest that further studies are needed to determine the species of elephant tapeworms that occur in Sri Lankan elephants.