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Histopathological Changes in the Intestine of Marine Fish Dasyatis Walga (Muller& Henle, 1841) Due To Tylocephalum Parasite

Vasant Dongare
Department of Zoology, Sundarrao More College of, Arts, Commerce & Science Poladpur-Raigad 402303.
Corresponding author- Vasant Dongare
Email- drvkdongare@gmail.com

Abstract
The studies of histopathological effects in the intestine of Dasyatis walga (Muller & Henle, 1841) with infection of cestode parasite Tylocephalum from At. Borli, Dist. Raigad (M.S.) India. This parasite caused significant histological effects in the fish intestine, The severe infection was evidenced by the total eruption of villi from the mucous membrane which resulted to a major disruption of the structural organization of the intestine which might have a profound influence on the nutrition and digestion process of the fish

The present paper deals with the histopathological changes showed the intestine of marine water fish Dasyatis walga infected with cestode Parasite Tylocephalum.
Keywords: Marine fish, Dasyatis walga, Infected Intestine, Cestode Tylocephalum

Introduction:
Gastrointestinal parasite infections are a worldwide problem for both marine and fresh water fishes. Economic losses are caused by gastrointestinal parasites is a variety of ways. They cause losses through lowered fertility, reduced work capacity, involuntary ruling, a reduction in food intake and lower weight gains lower production and treatment cost & throatily is heavily parasitized animals. There is a considerable body of information regarding the effects of helminth infection in animals and several well documented cases on the influence of enteric worms on host gut neuroendocrine and immune system (Fairweather, 1997; Bosi et al., 2005).

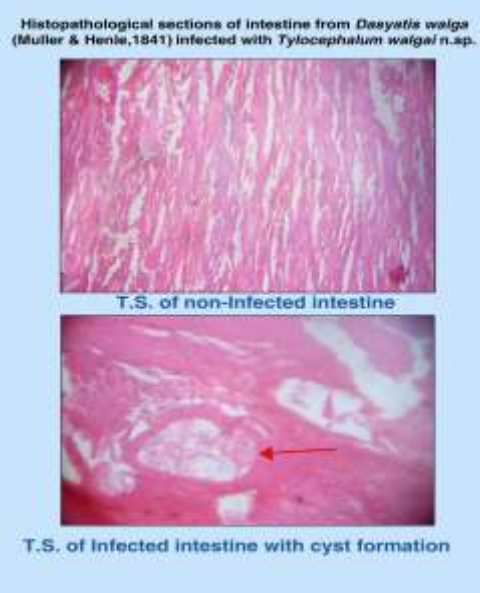
Several studies on the effect of intestinal parasites have shown that the main detrimental consequences for the host species are localised at the site of infection (Hoste, 2001). Although most investigation have focused on parasitic infections in mammal (Fox 1997; Roberts et al., 1999; Eysker & Plocalised, 2000; Mercer et al., 2000), there are a few fish parasite-based records. The degree of pathogenicity and damages were depended on the intensity of infection.

Material & Methods:

Marine fish Dasyatis walga (Muller & Henle, 1841) were brought to the local laboratory alive and sacrificed just before examination. During the parasitological examination, the intestines were cut open and examined under stereomicroscope to see the degree of infection. The tapeworms were collected, placed in saline solution, freed from the adhering mucus by gentle shaking, they were flattened, processed and stained for morphological studies and was identified as, Tylocephalum walgai n. sp.with in short time 2 to 3 cm long pieces of proximal intestinal segments containing tapeworms were fix in Bouin's solution for 24 hrs, as the tissue undergoes autolysis rapidly after death and rapid fixation is essential. The fixed material was transferred and processed through ascending grades of alcohol, dried in a wax miscible agent and impregnated in wax (M. P. 58º-60ºC). Sectioning was carried out on a rotary microtome at 6µm. Sections were floated on warm water at 48ºC and mounted on chemically cleaned slides coated with egg albumin.

The mounted, unstained sections were dewaxed in three stages of xylene at 1 minute each and stained with most widely used standard haematoxylin and eosin stain, staining was carried out using haematoxylin and eosin staining technique (Bullock, 1978). This stained is often sufficient for identification of larger parasites such as helminthes, in this method the nuclei of cells are stained by the haematoxylin; the cytoplasm is coloured by the eosin. 139 Stained mounted sections were examined under light microscope for good ones that were selected for photomicrography.

Result & Discussion:



Histopathology of Tylocephalum walgai n. sp infection of the intestine Dasyatis walga (Muller & Henle, 1841) The worm Tylocephalum walgai n.sp is having non- penetrative type of scolex, hence, they have only close intimate contact with intestinal tissue of its host Dasyatis walga. In transverse section of intestine of Dasyatis walga, it has been observed that the cyst attached to the mucosa layer of intestine and slowly invades the host tissue, causing less damage but destroys the intestinal epithelium showing that the cyst is moderately pathogenic.

The cysts are not only successful to adhere to host tissue but also quite successful to enter into the intestine forming the ulceration to their intestinal wall, causing damage to the host tissue. Thus, it can be concluded that the rich environment of host intestine, is favourable for the development and growth of the worm. Hence, the parasites maintaining good host pathological relationship with its host.

References:

1. Fairweather, J. Peptides., (1997): An emerging force in host response to parasitism, in pathogens: effects on host hormones and behavior. Beckage N.e.9ED0, Chapman & Hall, New York,113-139.
2. Bosi G., Domeneghini C., Arrighis., Giari L., Simoni E. & Dezfuli B. S. (2005): Response of
3. neuroendocrine system of the intestine of Leuciscus Cephalus (L., 1758) naturally infected with
4. Pomphorhynchus laevis Muller, 1776 (Acanthocephala). Histology & Histopathology, , 20, 509-518.
5. Hoste H. (2001): Adaptive physiological processes in the host during gastrointestinal parasitism. International Journal for 228 Parasitology, 31, 231-244.
6. Fox, M. T. (1997): Pathophysiology of infection with gastrointestinal nematodes in domestic Ruminants: recent developments.Veterinary Parasitology, 72, 285-308.
7. Eysker, M. & Ploeger H. W. (2000): Value of present diagnostic methods for gastrointestinal nematode infection in ruminants.Parasitology, 120, S109-S119.
8. Mercer, J. G., Mitchell P. I., Moar, K. M. Bissett a., Geissler s., Bruce K. and Chappell, L. H. (2000): Anorexia in rats infected with the nematode, Nippostrongylus brasiliensis: experimental manipulations. Parasitology, 120, 641-647.