# Histopathological Studies On Infection Of Cestode Parasite, *Senga* Sp. In Intestine Of Freshwater Fish, *Channa Striatus* (Bloch, 1793)

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**Abstract:**

Cestode parasite, *Senga* sp. is found in the intestine of freshwater fish, *Channa striatus* (Bloch, 1793). Cestode parasite brought several histopathological changes in the infected intestine of *Channa striatus*. Histopathological changes such as inflammation, vacuolization, damage the intestinal layer and villi by the infection of cestode parasite. The present paper deals with the histopathological changes in the infected intestine of *Channa striatus*.

**Keywords**: Cestode parasite, *Senga* sp., Histopathology, *Channa striatus*

## 1.Introduction

Histopathology is the microscopic study of tissuesues affected by disease. The structural and biological characteristics of the parasites, the various modification in the organs of the attachment. The health of fish can be affected by environmental factors, nutrition as well as by pathogens. The presence of large population of a particular species of fish provides ample habitats for parasites and the stress conditions associated with such crowding will also affect the health and subsequent susceptibility of the fish to parasites.

Parasites are affected by both the macro and micro environments. The environmental factors are important in the recruitment, transmission, colonization, fecundity and survival of both the adult and larval parasites. [6]

The histological finding obtained the study show that, *Neogryporchynthus cheilancristrotus* is a truly pathogenic species causing degeneration and inflammation intestinal wall, while the majority of cestode inhabiting the gut of fish live in the lumen of the gut and attached more or less firmly to the gut epithelium with scolices, *Neogryporchynthus cheilancristrotus* intrudes into deeper layer of the gut wall and breaking through the epithelium is located in the lamina propria of the mucosa layer. [14]

Cestodes have also been found to infect many fish and cause pathological effects on the host. In some cases the parasites have caused severe changes in the host. Others who have reported on the cestode infection in fishes. [1,19,18,16,4,5,7] It is observed that, the cestodes cause histopathological changes in fresh water fishes. [2,8&9,11,12,13,17,3,21.]

## 2.Materials and methods

Freshwater fish, *Channa striatus* (Bloch, 1793) were collected from Aurangabad District and brought to the laboratory later cut, opened the fish and observed internally taken out the intestine in the normal saline water in petridish, examination carefully for parasites. The cestode parasite were collected from the intestine, worm were kept separately and wash in saline water solution, flattened by using cover glass and slide then preserved in 4 % formalin for taxonomical studies. The slides were prepared by Harri's Haematoxylene stain, dehydrated in alcoholic grades (30%, 50%, 70%, 90%, and 100%), cleared in Xylene, mounted in DPX and the cestode parasite on closer observation & identified as genus *Senga* sp.

The infected intestines were kept intact and small pieces were fixed in Bouins fluid for histopathological studied. The fixed tissues were washed in distilled water, dehydrated in alcoholic grades, cleared in xylene, embedded in paraffin wax with melting point (58-60 $^{O}$C). Block were cut at 8mμ and slides were stained with Haematoxylene counter stained with eosin stain. Best slides were selected, observed under the microscope and photographs are taken.

## 3.Result

On closer observation of the transverse section of healthy intestine of *Channa striatus* (Bloch, 1793), all the layers of intestine were clearly observed which are intact and healthy (**Fig. 1).**

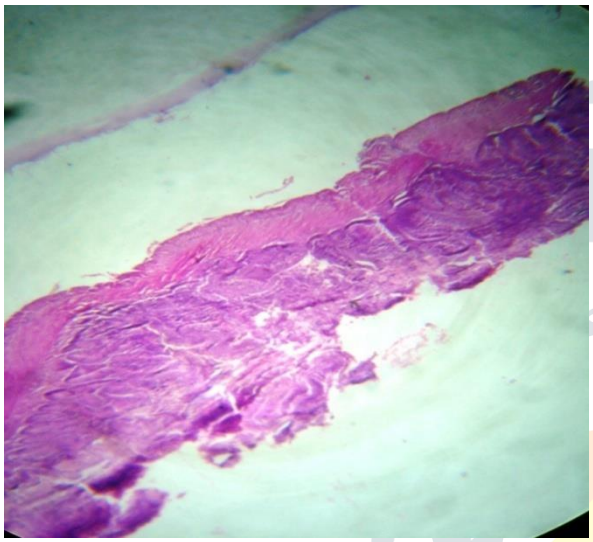

**Fig.1:** T.S. healthy intestine of *Channa striatus*

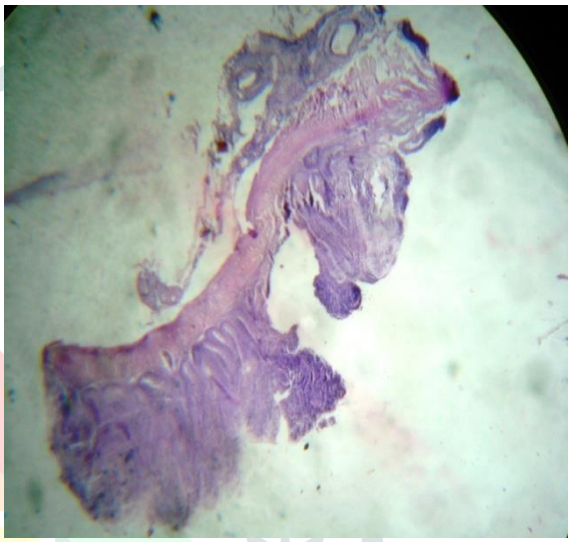

**Fig.2:** T.S. infected intestine of *Channa striatus*

Whereas, in the intestine infected by cestode parasite, *Senga* sp. The colour changes of the infected intestine from whitish to yellowish**.** Histopathologically, causes inflammation and vacuolization, damage the intestinal layer and villi **(Fig. 2).**

In the transverse section of infected intestine of *Channa striatus* was clearly observed, the worm deeply penetrates through the intestinal villi and damage the epithelium, plasma cell, ruptured the sub-mucosal, mucosa layers and vacuolation occurs in the layer of the intestine (**Fig. 2).**

The effects of parasites get serious of change which ultimately reduces the absorption rate and interrupts the other metabolic processes.

## 4.Discussion

The presents result showing that, *Senga* sp.is highly pathogenic parasite to the host, *Channa striatus* (Bloch, 1793). This pathological result is resemblance and discussed with the previous record, inflammatory response in submucosa and serosa of *Clarias batrachus* infected with *Lytocestus indicus* and *Diphyllobothrium penetra.* [19]

Histopathological changes in common carp, *Cyprinus carpio* (L.) infected with *Atractolytocestus huronensis* and shown that the cephalic part and neck of the *Atractolytocestus huronensis* is found in the deeper layer of the

intestinal mucosa, the scolex was surrounded only by the basement membrane which separated it from the lamina propria of the intestinal mucosa, worm penetrating into the deep layer of the mucosa containing intestinal crypts and damage of the epithelium layer.[15]

Histopathological studied on infected intestine shows that, the worm attached to the mucosal layer of intestine and slowly invades to the deeper. The worm *senga* sp. damages the various layer of the intestine from mucosal membrane to muscularis layer and submucosal membrane totally shrinked. *Senga* sp damage the epithelial layer and intestinal villi[10.] Scolex of cestode parasite, *Circumoncobothrium* sp. deeply penetrated through layers causing heavy mechanical injury to mucosa, sub mucosa, come to lie near the muscularis mucosa.[20]

## 5.Conclusion

The present investigations concluded that, the cestode parasite found in the intestine of freshwater fish, *Channa striatus* and damage the intestinal tissue causes disturb in physiological activity, reducing flesh quality, loss of fish productivity, economically loss in fish industry.

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