

Histopathology of intestinal tissue of host *Capra hircus* caused by anoplocephalidean Cestode *Stilesia*

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Abstract

The present work was conducted to study the histopathological changes in the intestine of *Capra hircus*, naturally infected with the Anoplocephalidean cestode, *Stilesia* (Railliet, 1892). It has been seen that the cestode *Stilesia jadhavae* are not successful in adhering firmly to the intestinal tissue suffering that the worm is not having very close contact but they has developed very weak contact and attached loosely to crypts of Liberkhun. Not much effort is put by the parasite to survive in the intestine and the scolex is not so much helpful. It seems that the environment of the intestine is quite favourable for the worm *Stilesia jadhavae* which is rich in protein, glucose and fat content. So the worm finds it easy to absorb the same through tegument for growth and nourishment.

Keywords: *Capra hircus*, Histopathological observation, *Stilesia*

INTRODUCTION

Cestodes are said to absorb semi digested material from the intestine and it has been assumed that these worms lie in a both of semi digested 'soup' from which they can absorb nutrient, metabolic and in vitro studies suggest that a complex nutritional relationship occurs between cestode and its host. In host parasite relationship host provides a suitable environment to parasites and in turn parasites either directly or indirectly injures host and also deprives host getting required nutritional requirements. The present communication deals with the study of histopathology of Anoplocephalidean cestode *Stilesia* (Railliet, 1892) intestinal tapeworm of host *Capra hircus*.

MATERIAL AND METHODS

To record the rate of infection and histopathological study, intestines of *Capra hircus* were collected from slaughter houses of Aurangabad city and dissected to observe the rate of infection. Some intestines were found to be infected and some are normal. Both infected and normal hosts intestine were dissected and fixed in Bouin's fluid to study histopathological changes. The fixed materials from Bouin's fluid were removed, washed, dehydrated through alcoholic grades, cleared in xylene and embedded in paraffin wax (58-62°C). The blocks were cut at 9µ and slides were stained in Eosin Haematoxylin double staining method. Best slides or sections were selected and observed under the microscope for histopathological study.

RESULTS AND DISCUSSIONS

Histopathology of *Stilesia* (Railliet, A. 1892), infected intestine

of *Capra hircus* has been studied by examining the stained serial sections of the tissue. It has been seen that the cestode *Stilesia jadhavae* are not successful in adhering firmly to the intestinal tissue suffering that the worm is not having very close contact but they has developed very weak contact and attached loosely to crypts of Liberkhun. Not much effort is put by the parasite to survive in the intestine and the scolex is not so much helpful. It seems that the environment of the intestine is quite favourable for the worm *Stilesia jadhavae* which is rich in protein, glucose and fat content. So the worm finds it easy to absorb the same through tegument for growth and nourishment. Similar finding was from intestine of *Gallus gallus domesticus* parasitized by *Davainea* sp (Jadhav et al., 2008).



Fig.1. Healthy intestinal villi of *Capra hircus*

Nasira Khatoon studied the total destruction and necrosis of all layers of the intestinal wall. In some regions, severe destruction occurs only in the mucosa and sub-mucosa *Nesokia indica* parasitized by *Syphacia* sp. Such types of changes were also observed in fishes parasitized by *Anisakis* larvae (Bilqees and Parveen, 1996).

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Fig. 2. Infected intestinal villi of *Capra hircus* by *Stilesia* sp.

Destruction of the epithelium at the point of attachment was observed by some workers and large numbers of detached cells of epithelial and connective tissue origin in the paramucosal lumen (Chaicharn and Bullock, 1967). Similar abnormalities were observed in the present study but here the mucosal layer disintegrated to form granular masses. The damage was severe, resulting in a condition like sessile adenoma, and in some places the mucosal region was thickened, producing a condition like pedunculate adenoma. Some of the infected intestinal sections represent a collapsed mucosal layer; a similar condition has also been reported in other animals (Bilqees and Fatima, 1995). Granulomatous lesions were also observed involving muscularis mucosa. This may be due to the parasite moving deeper into the host tissue, resulting in severe tissue damage. Such types of lesions were also reported by (Bilqees, 1995). Kapustina Kapustina (1978) also noted damage to intestinal mucosa adjacent to the strobila of *K. sinensis*, which was attributed to cestode feeding strategies, migration of the parasite in the gut, and previous sites of attachment.

CONCLUSION

In our investigation the parasite does not cause severe damage to host intestine or tissue. Thus it revealed that, the rich environment of host intestine is favourable for the development and growth of the worm; which does not damage the tissue of the host intestine, but float freely in lumen or sometimes harbour on the intestinal villi.

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