

RRST-Zoology

# Histopathological Observation of the Intestine of *Capra hircus* (L.) Infected with *Cotylophoron cotylophorum* (Stiles et Goldberger, 1910)

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Article Info	Abstract
<p><b>Article History</b></p> <p>Received : 04-02-2011                  Revised : 23-03-2011                  Accepted : 23-03-2011</p> <p><b>*Corresponding Author</b></p> <p>Tel : +91-9422051222                  Fax : +91-9422051222</p> <p>Email:                  ni3_padwal@yahoo.co.in</p> <p>©ScholarJournals, SSR</p>	<p>The present investigation deals with the histopathological observation of the intestine of <i>Capra hircus</i> (L.) infected with the trematode parasites <i>Cotylophoron cotylophorum</i> [11] is having muscular sucker which is used for attachment to the intestine of host <i>Capra hircus</i> (L.). In T.S. of intestine of <i>Capra hircus</i> (L.), it has been observed that the <i>Cotylophoron cotylophorum</i> attached to the different layers of intestine and slowly damaged the hosts intestinal tissue and it destroys the intestinal epithelium of villi showing trematodes are highly destructing the intestine of <i>Capra hircus</i> (L.).</p> <p><b>Key Words:</b> Histopathological observation, <i>Capra hircus</i> (L.), <i>Cotylophoron cotylophorum</i></p>

## Introduction

The host parasitic relationship in cestodes is complex one involving inter actions between at least two and some times more genital systema namely those of the parasites it's intermediate and it's definitive host. Thus a cestode if it has to survive must be suitably adapted to the morphology physiology biochemistry immunology and ecology of its hosts.

During the life cycle of cestode, it is accomplished twice in different host. In *Capra hircus* (L.) and *Ovis bharal* (L.); the mechanism of parasites establishment varies from species to species and also depends on the stage of parasite, host tissue and environmental conditions. The degree of the response by each host to this tissue contact is related to the nature of the tissue site invasion and also to the intimacy of the host or parasite contact it is also related to the stage of development of the invading organisms whether it is an adult or larva eg. the host parasitic contact established in the life cycle of *Taenia saginata*.

The host parasite relationship has studied by various authors. The development and experimental pathology of *Echinococcus multilocularis* and alveolar hydatid [1,2] and helminthic disease in ruminants [3]. Mukherjee et. al [4] reported massive infection of a sheep with amphistomes and the histopathology of parasitized rumen. Nobel [5] studied histopathology of *Paramphistomiasis*. Sharma et. al [8] studied on the pathogenecity due to immature Paramphistomes among sheep and goats. Singh [9] observed histopathology of the duodenum and rumen during experimental infection with *Paramphistomum cervi*. Srivastava [10] reported the study on life history and pathogenecity of *Cotylophoron cotylophorum*

[11] of Indian ruminants and a biological control to check infestation. Biology and pathogenecity of *Cotylophoron cotylophorum* is also reported [12].

A successful parasite usually does not cause death to the host must cause diseases and the same time produce a low degree immunity so that the host become susceptible to the same infection over and over again. The researchers not yet area of host-parasite relationships will become more aware of the special approaches, difficulties and challenges which characterize this field.

## Material and Methods

For the histopathological study, intestines of goats were dissected to observe the rate of infection. Some goats were found to be infected and some uninfected. Both infected and uninfected hosts intestine were dissected and fixed in Bouin's fluid to study histopathological changes. The fixative inhibits the post mortem changes of the tissues. Then tissues were washed, dehydrated through alcoholic grades, cleared in xylene and embedded in paraffin wax (58-62°C).

The blocks were cut at 7μ 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

Parasitism of cestodes with their respective hosts is shown in the histopathological studies. This study is carried out with micro-technique where the sections were cut at 7μ on a rotary microtome and stained with Haematoxylin & Eosin stain.

The worm *Cotylophoron cotylophorum* [11] is having muscular sucker which is used for attachment to the intestine of host *Capra hircus*.

In T.S. of intestine of *Capra hircus*, it has been observed that the *Cotylophoron cotylophorum* [11] attached to the

different layers of intestine and slowly damaged the hosts intestinal tissue and it destroys the intestinal epithelium of villi showing trematodes are highly destructing the intestine of *Capra hircus*(L.) Plate I a) T.S. of infected Intestine of *Capra hircus*. b) T.S. of non-infected Intestine of *Capra hircus*.

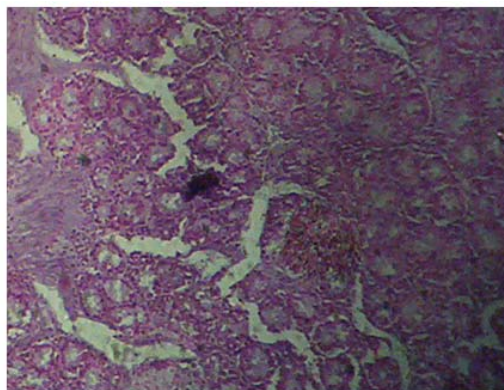
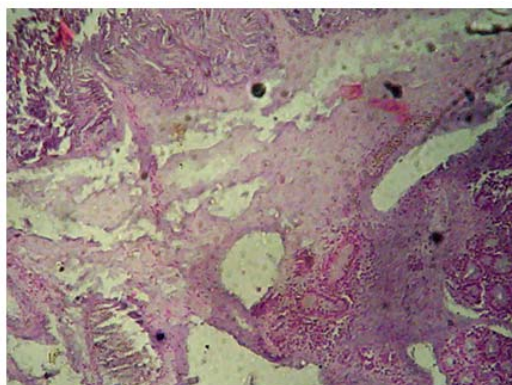


Photo plate: A- Normal intestine of *Capra hircus* (L.)



B- Infected intestine of *Capra hircus* (L.) with *Cotylophoron cotylophorum* sp.

Healthy intestine showed, healthy villi and all layers are clearly observed, where as infected intestine has been observed that the worm attached to the mucosal layer of intestine and slowly invades to the deeper layers of the host tissue.

Parasites when make contact with a host at cellular level, the host reacts bringing into cellular and serological reaction, which is an inflammatory reaction. It is thought that the host is able to distinguish between self and non-self material, it is not clear as to how these recognition is carried out at molecular level. Recognition must occur on or near the surface of the susceptible cells and probably it may require contact between the material and the recognizing cells. Sprent has given an excellent account about it the onset of inflammation is characterized by local dilation of the capillaries (vasodilatation). The host-parasites relationships in case of helminth parasites result into large scale damage at the site of attachment [6].

Pathogenecity and histochemistry of experimental infection in *Cotylophoron cotylophorum* in goats is reported previously [6]. Such type of result also observed on the present investigation.

Helminths particularly the *Cotylophoron cotylophorum* [11] live in a hazardous environment where the parasitic movement towards gut and passage of food make the possession of an efficient form of attachment is a prerequisite for survival. Taxonomic studies reveals that the hold fast organ is beautifully developed and adapted which are help them to attach the mucosa of specific hosts they suck or observed nutritive material from host body where as there are other parasitic species (Cestodes) which are having weakly developed scolex. They do not prove to reside in any particular host intestine but have a wide host spectrum; there is increasing evidence in the genus *Echinococcus* at least such strains occur in different hosts.

#### Conclusion

From above histopathological discussion it can be concluded that trematodes parasite *Cotylophoron cotylophorum* [11] finds the nutritive material from the intestine of hosts *Capra hircus* which is essential for their nourishment and growth.

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