International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

# Histopathological Changes in the Intestine of Capra Hircus (L.) Infected with *Stilesia globipunctata*, Railliet, 1893 from Nashik Region

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**Abstract:** ***In Capra hircus the mechanism of parasites establishment varies and also depends on the stage of parasite, host tissue and environmental conditions. The investigation was carried out for two years during the period from July 2020 to June 2021 and July 2021 to June 2022. Goat (Capra hircus) intestine were collected from different slaughter houses of Nasik region. On closer observations, the transverse section of healthy host intestine, shows intact histological architecture and all layers are clearly observed, whereas in the transverse section of infected intestine the Stilesia globipunctata, Railliet, 1893 worms scolex is penetrating inside the intestinal mucosa layer and engulfing the cells.***

**Keywords:** *Capra hircus*, scolex, parasites, histological etc

## 1. Introduction

Cestodes live in a hazardous environment where the parasitic movement towards gut and passage of food make the possession of an efficient form of attachment. Taxonomical studies reveal that the hold fast organ is beautifully adopted, which helps them to attach to the mucosa of specific hosts.

The nature of the host diet will affect not only the growth rate of the cestode parasite but also affect the distribution of the parasites. The physiology of cestode parasite is related to the physiochemical condition within the gut and also the actual topology of the gut surface and nature of the related gland. Thus the cestode if it has to survive must be suitably adapted to the morphological, physiological, biochemistry, immunology and ecology of its host.

In *Capra hircus* the mechanism of parasites establishment varies and also depends on the stage of parasite, host tissue and environmental conditions. It is also related to the stage of development of the invading organisms whether it is an adult or larva egg.

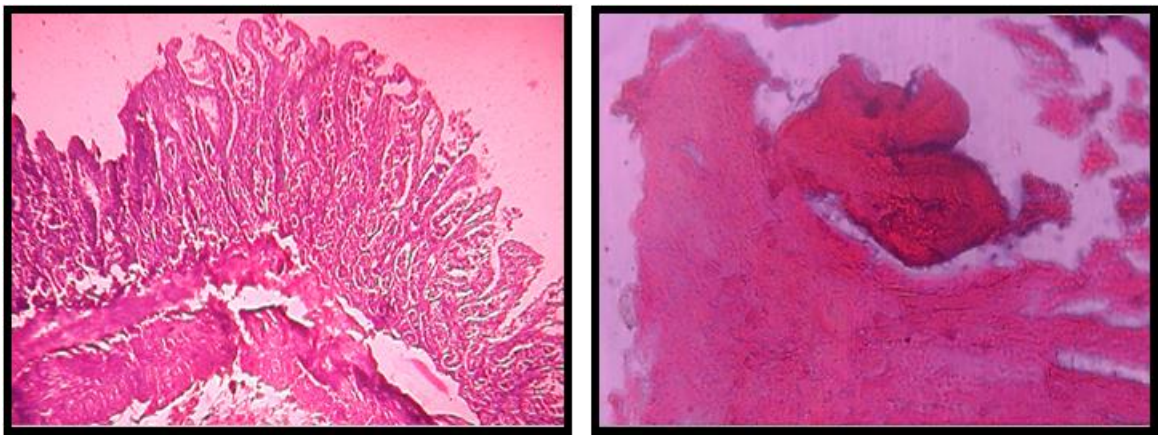
Some scoleces were penetrative type and others were non - penetrative type (Shinde and Mitra, 1980). In penetrative type attachment is very intimate and crypts of Lieberkhun are invaded while in non - penetrative type it is superficially attached to mucosal epithelium of intestinal villi. Important contributions in this direction were made by Joshi and Kamalpur (1971); Mitra and Shinde (1981); Jadhav and Shinde (1981); McDonough and Gleason (1981); Shinde et al., *(*1984); Tuli et al., (1992); Nanware et al., *(*2005); Reddy et al., (2006); Banarjee et al., *(*2006); Patil and Chaudhari (2010, 2011); Humbe et al., (2011); Dhole, et al., *(*2011); Padwal et al., (2011) and Anarse et al., *(*2012).

## 2. Material and Methods

The investigation was carried out for two years during the period from July 2020 to June 2021 and July 2021 to June 2022. Goat (Capra hircus) intestine were collected from different slaughter houses of Nashik region. Intestines of the host *Capra hircus* were dissected and observed for the degree of infection. Most of the intestines were infected by cestode parasites. The worms attached with intestine and uninfected intestine were fixed in Bouin's fluid. The material was later washed in running water, dehydrated through various alcoholic grades, cleared in Xylene, embedded in paraffin wax at (58 - 60°C) and blocks were prepared. The blocks were cut at 5 - 7mμ and slides stained in Haematoxylin eosin double staining method and mounted in the DPX. The photomicrographs were taken with the help of camera.

## 3. Observations

The present study results indicate that the intestines were found heavily infected with cestode parasites. On closer observations, the transverse section of healthy host intestine, shows intact histological architecture and all layers are clearly observed, whereas in the transverse section of infected intestine the *Stilesia globipunctata*, Railliet, 1893 worms scolex is penetrating inside the intestinal mucosa layer and engulfing the cells.



**A** **B**

**Fig.:** A) Non - infected intestine of *Capra hircus.*
B) T. S. of Infected intestine showing inserted Scolex of *Stilesia globipunctata*, Railliet, 1893 inside the mucosa layer and damaged intestinal epithelium

## 4. Result and Discussion

The worm is not only successful in entering into the intestine, but also forming the ulceration in the intestinal wall, the parasite may affect host physiology in many ways that induce stress in the host. The parasitic infections in turn disturb the metabolic pathways (Esch et al., 1977). The present study shows the similar results as previously reported by (Gopal Krishnan, 1968). As the cestodes crosses serially the intestinal layers (internal epithelium, submucosa, muscularis layer) and come close to serosa suggesting that, it is very dangerous and destructive parasite to the definitive host (Hiware, et al., 2008).

When the scolex of the *Stilesia globipunctata*, Railliet, 1893 reaches up to the muscularis externa layer, cellular infiltration occurs. The cells present at the site are invaded by leukocyte, eosinophil and lymphocytes. The parenchymal muscles are broken and appear at damaged region of inner villi of intestine. These cells are adapted for resisting parasites. Redness of intestine appears because of the firmly attachment with the suckers.

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