Histopathological Changes of the Rumen of Sheep Infected with: *Paramphistomum* Spp

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ABSTRACT

The present study incorporated examination of the rumen of sheep infected with *Paramphistomum* SPP. On microscopic examination, it was found that, in the ruminal sections infected with mature *Paramphistomum* spp changes were observed only in the number of ruminal papille. But the sections infected with immature worms, hemorrhagic lesions and necrosis of the mucosal cells were observed. The mucosa was found thickened swollen, rugous and ulcerated. Thus it is concluded that the immature forms of *paramphistomum* spp caused more severe damage to the ruminal tissue whereas adult form inflicted mild tissue damage in the rumen of sheep.

**Keywords**— *Paramphistomum* SPP, histopathology, trematoda

I. INTRODUCTION

In all over the world ruminants are generally victimised by variety of parasites. In India Paramphistomiasis is a serious helminthic problem. Affected animals suffer seriously due to pathogenecity caused by these parasites. The amphistome flukes widely prevalent in domestic stock in our country are often incriminated in serious out - breaks. Paramphistominiae and Gastrothylacinae are believed to be innocuous, following heavy metacercarial ingestion, massive invasion of excysted juveniles in the initial regions of the intestine, on their way to rumen, causing pathogenecity. Extensive work has been carried out in this field. Notable contributions are of Seyfarth (1938), Bawa(1939), Maqsood (1944), Guilhon and Pricuzeau (1946), Audi (1946), Srivastava (1948), Podberezski (1951), Damiano (1965), Aahisava et al (1969), Mikhailova et al (1972), Singh and pande (1972), Singh and Dutt (1978), Singh et al (1979), Burik (1980), Vartic et al (1982), Singh et al (1984), Nikander (1991), Rolfe et al (1994), Ghoshi and Chauhan (1994), Misra et al (1996), Cheema et al (1997).

The present study deals with the histopathology of naturally occurring *paramphistomum*spp in the infection of rumen in sheep.

II. MATERIAL AND METHOD

For the histopathological studies of infected rumen in sheep were obtained from the local abbatoirs.

Tissue samples were fixed in 10% formalin. These samples were then processed through conventional methods of washing, dehydration, cleaning and embedding, 6 um thick paraffin sections were cut by rotatory microtome and stained simultaneously with haematoxylin and eosin. Photomicrographs were taken by the help of Leica GMBH camera.

III. RESULTS
Fig. 1: In the ruminal sections infected with mature Paramphistomumspp changes were observed in the number of ruminal papillae, hemorrhagic lesions in mucosa and necrosis of mucosal cells.

Fig. 2: sections of rumen infected with 200-300 immature paramphistomumspp the changes observed in mucosal layer decreased in number of ruminal papillae, hemorrhagic lesions in mucosa and necrosis of mucosal cells.

Fig. 3: Sections of rumen infected with more than 2000 immature flukes, the changes observed in the shape, size, color and orientation of the ruminal villi, thickening and necrosis of the mucosal layer lesions were found in submucosal layer. There was complete damage of ruminal papillae has been observed, with unaffected serous layer.
IV. DISCUSSION & CONCLUSION

The microscopic changes resembled with the findings of Burik (1980) who has reported changes in color, shape, orientation and size of ruminal villi. The authors have also observed the destruction of mucosal layer, necrosis of cells and strangulation.

Darmono (1983) also reported similar changes in his findings. The examination of the affected rumen revealed markedly thickened mucosa and submucosawith severe changes of mucosal cells by immature Amphistomes which was found to be embedded in the mucosa. Rolfe et al. (1994) also observed similar destruction of the mucosa in their findings. The author has reported that the adult fluke caused atrophy of the papillae on the rumino-reticular fold by attaching with the acetabulum. These findings were in accordance with the (Nikander 1991). The author also agreed with (Singh et al 1984) who observed no change in serosal layer and pointed out that the immature flukes were more injurious than adult flukes.

In Summary the authors concluded that immature forms of Paramphistomum spp. appear to cause more severe damage in the ruminal tissue whereas adult forms inflicted mild and superficial damage in the rumen.

REFERENCES