OCCURRENCE AND PATHOLOGY OF COCCIDIOSIS IN SMALL INTESTINE OF CATTLE IN RAJASTHAN[#]

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ABSTRACT

A total number of 518 samples of small intestine were examined from cattle of different age groups, breeds and either sex. Out of these 151 samples showing gross lesions were collected and tissue sections from these were subjected to histopathological examination with objective to find out the occurrence, etiology, type, pattern and morphology of various pathological conditions of small intestine of cattle in Rajasthan.

***Key word*:** Coccidiosis, small intestine, cattle, Rajasthan

Introduction

Bovine coccidiosis occurs in all parts of the world and serious outbreaks may occur in dairy herds (Soulsby, 2005) via affected or carrier animals (Sastry and Rao, 2005) because of when animals are in crowded conditions associated with poor sanitation, faecal-oral transmission of large numbers of organisms can occur (McGavin and Zachary, 2007).

Materials and Methods

Collection of samples

A total of 518 samples were procured and examined from small intestines between May to October 2010 from various municipal areas of Bikaner, Jodhpur and Kota districts from the carcasses of cattle irrespective of sex, age and breeds. The samples were also collected from the carcasses submitted to the Department of Veterinary Pathology for routine post-mortem examination. The samples were thoroughly examined visually and manually for various pathological abnormalities such as colour, consistency, shape and size, presence of tumours and ulcers. Out of 518 samples, 151 showing frank macroscopic lesions were collected for further histopathological examination. The fixed tissues were processed mechanically for paraffin embedding by acetone and benzene technique (Lillie, 1965) and the sections of 4-6 microns thickness were cut and stained with routine hematoxylin and eosin staining method. The duplicate sections were stained with special stain Periodic acid Schiff for parasites (Culling, 1974) wherever necessary. The results were recorded by gross and photomicrographs.

Results and Discussion

Occurrence

In the present study, overall occurrence of coccidiosis in small intestine of cattle was recorded as 3.31 per cent. This condition was noted in 5 (3.31%) cases. Grossly, variable hyperaemia and haemorrhages were seen in the intestine. Microscopically, the small intestine showed hyperemia, destruction of epithelium, leukocytic infiltration and edema (Fig. 1). Coccidia were visible in the epithelial cells of crypts of Liberkuhn (Fig. 2).

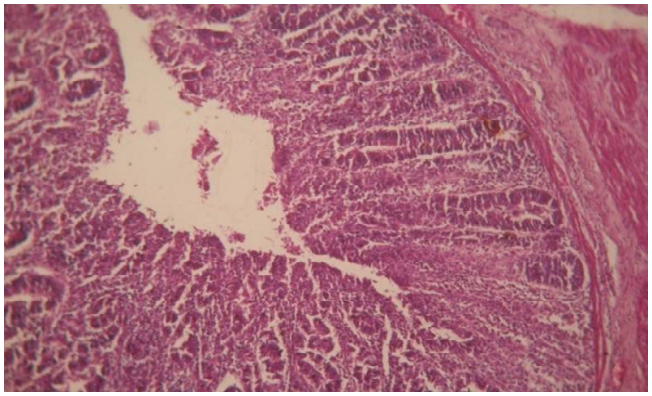

Fig.1: Photomicrograph showing destruction of epithelium with leukocytic infiltration and oedema in mucosa of small intestine (H&E, 100X).

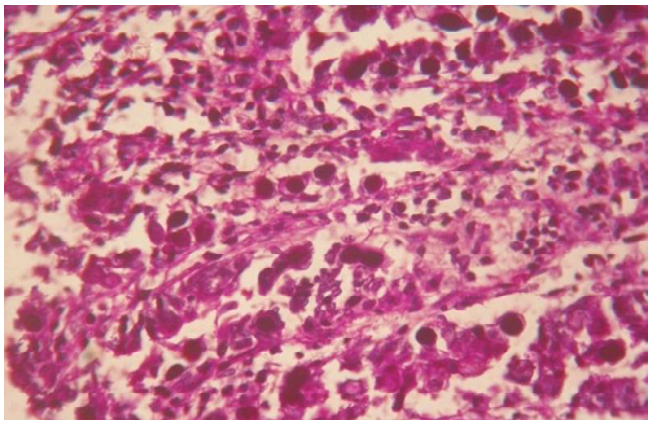

Fig.2: Photomicrograph showing stages of development of Eimeria species in crypts of Liberkuhn. Periodic acid Schiff (PAS), 400 X.

This condition was recorded in five cases in present study, is in close approximation to the earlier reports of Shirale *et al.* (2008) recorded 3.14 per cent infection occurrence and Barua *et al*. (2009) recorded 3.33 per cent infection occurrence.

The gross findings such as hyperaemia and

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haemorrhages in the intestine are in close approximation with earlier reports of Thomson (1989) and Chauhan (2003).

The Microscopic findings showing coccidia in the epithelial cells of crypts of liberkuhn in terminal part of ileum along with destruction of epithelium, leukocytic infiltration and oedema are in accordance with the findings of Soulsby (2005) and Jubb *et al.* (2007).

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