

## Gross and histopathological study of tubular adenoma in buffalo intestine

Archana shringi

Vijay Mandovera

Ramesh Saini

**ABSTRACT**

*Tubular adenoma has been studied in present study where it is found in only 1.05% cases. It is studied grossly as well as microscopically. Grossly tan colored, firm and polypoid masses were found on mucosal surface of small intestine of approx 0.5 cm in diameter. Microscopically irregularly shaped acinar structures were present. These structures were lined by closely packed, tall, columnar epithelial cells and large numbers of goblet cells. Epithelial cell nuclei were elongated. In one case, pedunculated adenomatous polyp was also found. There was numerous growth of intestinal glands in this polyp.*

**KEYWORDS :**

Buffalo husbandry has great importance in agricultural activities due to its enormous potential to bring about increased productivity and rapid economic growth. Buffalo has been an integral part of livestock in India, producing draft power, milk, meat and hides.

The intestine has major importance in gastrointestinal tract with respect to clinical and pathological aspect. Intestinal tract serves useful function in the digestion and absorption of nutrients. Any change in the nature of intestinal wall will obviously affects these functions, well being of the animal and its productivity.

The specimens of buffalo intestine for the proposed investigation were collected from the carcasses of buffaloes irrespective of sex, age and breeds. The samples were procured from various slaughterhouses of Bikaner, Jodhpur and Kota districts. During post mortem examination, the samples were thoroughly examined visually and manually for various pathological abnormalities such as colour, consistency, shape and size, presence of tumors and ulcers.

The study was conducted from November 2007 to March 2008. . During this period, 750 intestines of buffalo were examined and out of these 189 samples, showing frank macroscopic lesions were collected for further histopathological examination.

For histopathology the fixed tissues were processed mechanically for paraffin embedding by Acetone and Benzene technique (Lillie, 1965). The sections of 4-6 microns thickness were cut and stained with routine Hematoxylin and Eosin staining method.

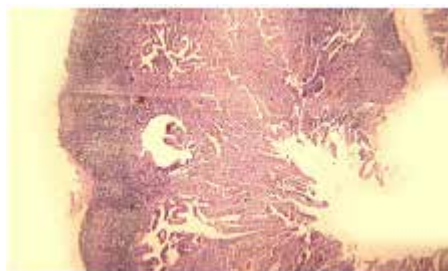
Tubular adenoma was present in 2 (1.05%) cases.

**Grossly**, tan coloured, firm and polypoid masses were recovered on mucosal surface of the small intestine. These masses were about 0.5cm in diameter (Fig.1).



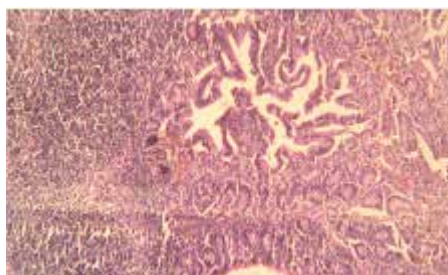
**(fig 1: showing firm and polypoid masses on mucosal surface)**

**Microscopically**, irregularly shaped acinar structures were present (Fig. 2).



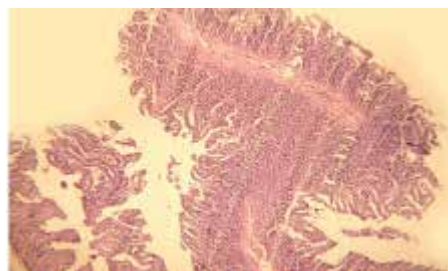
**(fig 2: showing irregularly shaped acinar)**

These structures were lined by closely packed, tall, columnar epithelial cells and large numbers of goblet cells (Fig. 3).



**(fig 3: showing packed, tall, columnar epithelial cells and large numbers of goblet cells.)**

Epithelial cell nuclei were elongated. In one case, pedunculated adenomatous polyp was also found (Fig. 4). There was numerous growth of intestinal glands in this polyp.



**(fig 4 : showing pedunculated adenomatous polyp)**

Damodaran and Parthasarathy (1973) reported adenoma in intes-

tine. Histopathologically, the neoplasm was made up of acini lined by short or tall columnar epithelial cells. Some of the acini show cystic distension.

Van *et al.* (1982) observed tubular adenomas of intestine. Microscopically, there was moderate to severe dysplasia.

Patterson-Kane *et al.* (2000) studied small intestinal adenomatous polyposis. Grossly, 0.5 to 5cm diameter, raised, multinodular, purple to tan, moderately firm to friable, polypoid masses were present in jejunum and ileum. The masses were generally pedunculated. Microscopically, irregularly shaped acinar structures were present, which were lined by closely packed tall columnar epithelial cells and large numbers of goblet cells. Epithelial cell nuclei were elongated.

Jubb *et al.* (2007) also described tubular adenoma in cattle. Grossly, the tumors are raised, often pedunculated, gray to brown masses on the mucosal surface. They may occur singly, in grape like clusters or they may be scattered. Microscopically, tubular adenoma is characterized by branching crypts that are lined by generally well differentiated columnar to cuboidal pseudostratified epithelial cells.

The gross findings of tubular adenoma recorded in 1.05 per cent cases are in close approximation to the findings recorded by Patterson-Kane *et al.* (2000) and Jubb *et al.* (2007) found gross appearance as tan coloured, firm and polypoid masses on mucosal surface, measuring about 0.5 cm in diameter.

The microscopic findings showing irregularly shaped acinar structures lined by closely packed, tall, columnar epithelial cells, which have elongated nuclei correspond well with the earlier reports of Patterson-Kane *et al.* (2000) and Damodaran and Parthasarthy (1973).

Tubular adenoma and adenomatous polyps are usually an incidental finding, except in those cases where they are large enough to cause partial obstruction. Adenomatous hyperplasia occurs as a focal tubular proliferation of epithelium anywhere in gastrointestinal tract (Jubb *et al.*,2007).

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