

Study on inflammatory conditions of uterus in Buffalo (*Bubalus bubalis*)

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ABSTRACT

In the present study 266 genitalia of buffalo were examined, out of which 52 genitalia revealed inflammatory conditions in uterus and they were classified into endometritis (30 cases) and metritis (22 cases). Endometritis was further subdivided into acute (1 case), subacute (5 cases) and chronic endometritis (24 cases). Gross and histopathological features are described in present paper.

Key Words - Buffalo, endometritis, metritis

Uterine disorders are frequently encountered in the reproductive cycle of different species of domestic animals, uterine inflammation is one of them. Chronic endometritis is most common condition in domestic animals (Cohrs, 1967). Inflammation of uterus either endometritis or metritis are responsible to some extent for failure of conception (Roberts, 1986). Mild histopathological changes without signs of endometritis can cause infertility (Theus *et al.*, 1979).

The genital organs of buffalo slaughtered in various slaughter houses of Jaipur, Bikaner and Tonk irrespective of age groups and breeds were used in the study. During gross examination tissue samples were thoroughly examined visually and manually. The pieces from grossly affected genital organs or suspected to have microscopic lesions were collected in 10% formal saline for routine histopathological examination. The preserved tissues were processed mechanically for paraffin embedding by Acetone and Benzene technique (Lillie, 1965). The tissue sections were stained with routine Haematoxylin and Eosin staining. Sections were also stained with Masson's Trichrome stain to reveal connective tissue (Luna, 1968).

Inflammatory conditions of uterus were found in 52 (19.55%) genitalia which include acute endometritis, subacute endometritis, chronic endometritis and metritis.

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Acute endometritis was observed in 1 (0.38%) case. The affected uterus appeared flabby with hyperemic mucosa. The cotyledonary surface was eroded and had irregular necrotic patches. The lumen contents were dirty yellowish brown mixed with small irregular flakes. Microscopically capillaries were dilated and congested especially at cotyledonary area (fig 1). Neutrophilic infiltration was present in endometrium and few glands also revealed neutrophils in their lumen. Besides infiltration of neutrophils in the mucosa and intraluminal glands, Tafti and Darahshiri (2000) also reported degeneration and necrosis of surface epithelium which



Fig. 1 Microphotograph of uterus revealing congested and dilated blood vessels in endometrium H. & E. 100x.

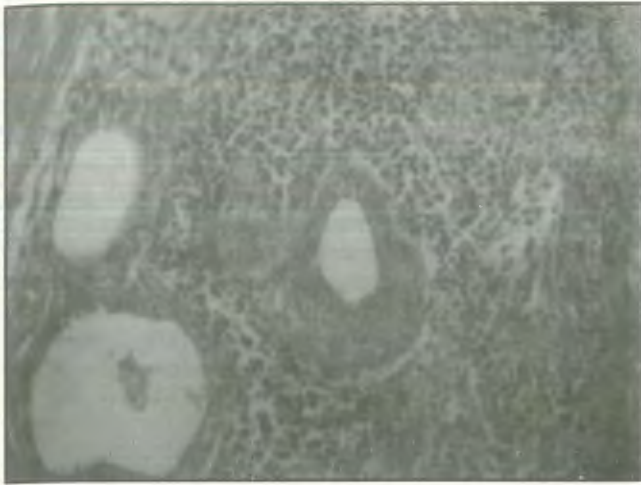


Fig. 2 Endometrium showing periglandular cellular infiltration. H. & E. 100x.

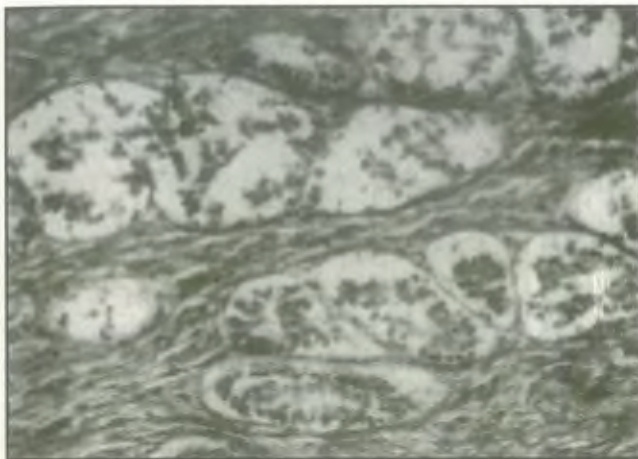


Fig. 3 Endometrium showing green coloured fibrous stroma and read coloured glandular epithelium Masson's Trichrom 200x.



Fig. 4 Photograph of genital tract showing thick and congested uterine wall.

Sharma *et al.* (1993) described degeneration of glandular epithelium, severe congestion and oedema in acute endometritis. Subacute endometritis was seen in 5 (1.88%) cases. The affected uteri were comparatively oedematous with dark brownish mucus containing irregular small flakes in the lumen. The mucosa was eroded and had yellowish, soft, necrosed mass with congested spots on the cotyledonary surfaces. The mucosa on intercotyledonary spaces also had linear congestion. Microscopically, epithelium was desquamated at some places. There was subepithelial lymphocytic infiltration, plasma cells and macrophages were also evident. Prevascular and periglandular cellular infiltration was noticed in these cases (fig 2). Similar observations were described by Sharma *et al.* (1993) and Tafti and Darahshiri (2000) but Sharma *et al.* (1993) described periglandular and perivascular infiltration in chronic endometritis. Chronic endometritis was presented in 14 (9.02%) cases. The uteri revealed slight asymmetrical enlargement of affected horn. Microscopically, this condition was characterized by fibrotic changes, which were most readily recognized around the glands and vessels. Connective tissue stroma of endometrium was also thick and fibrocellular. The uterine glands varied in number, size and shape alongwith severity of stromal and periglandular fibrosis. Desquamated and denuded glandular epithelium and cystic changes in glands were associated with periglandular fibrosis (fig 3). In some cases, mucosal epithelium was desquamated and in other cases, hyperplastic epithelium revealed nuclear pseudostratification. Myometrium and perimetrium were apparently normal. These observations were in line with those recorded by Tafti and Darahshiri (2000). Metritis was observed in 8.27% cases. Grossly, metritis was observed as congestion and inflammation of perimetrium, myometrium and endometrium. These changes were associated with little or no fluid in the lumen. The wall of uterus was thick and congested (fig.4). Gross changes of metritis in present study were in accordance with Sharma *et al.* (1967). Microscopically, epithelium was markedly desquamated. Leukocytic infiltration was severe, particularly in the superficial parts of the mucosa. The uterine glands appeared inactive and dilated. Myometrium revealed areas with cellular infiltration and serosa was thickened due to fibrous tissue. Present

observations revealed that in case of metritis, all layers of uterus were affected. Jubb *et al.* (1993) also described metritis as inflammation of the entire thickness of the wall of uterus.

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