Uterine Lymphosarcoma with Adenocarcinoma in Genitalia of Buffaloes (*Bubalus bubalis*)

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Sub-fertility is a worldwide concern as herd fertility rates have been declining annually (Noakes et al. 2009). Infertility in bovines could be attributed to a number of conditions affecting the genital tract *viz.*, anatomical, hormonal imbalance, infectious, nutritional, climatic and managerial causes. Of course, uterine tumours as one of the causes of infertility have been established long back. In the present study, the incidence of uterine lymphosarcoma with adenocarcinoma in slaughter house buffalo genitalia were recorded and described.

Materials and Methods

73 genitalia of Murrah graded buffaloes were collected from slaughter house located at Vijayawada in Krishna District of A.P. Genitalia were kept in individual self-locking polythene covers to avoid mixing of secretions between genitalia and transported to laboratory in air tight containers within 15-24 h by maintaining cold chain. Upon receiving at laboratory, genitalia were examined for gross morphological changes. After incising the horns, impression smears for cytological examination were obtained, fixed and stained with Leishman's stain. Representative tissue samples for histopathological studies were fixed in 10% buffered formalin and processed for histopathological examination. Four to six microns thickness sections were made and stained with haematoxylin and eosin (Brar et al., 2002) and AgNOR (Krishnamurthi and

**Fig 1.** Lymphosarcoma: Masses of variable size in external os, body of uterus, uterine horns.

**Fig 2.** Lymphosarcoma: Cytological smear – numerous pleomorphic lymphoblasts with hyperchromatic nucleus and several nucleoli – Leishman’s stain X 1000

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Results and Discussion

Out of 73 genitalia, lymphosarcoma with adenocarcinoma was noticed in 12.32% (9/73) genitalia, in which 11.11% (1/9) showed lymphosarcoma with scirrhous adenocarcinoma. Grossly, neoplastic masses of small to big size were noticed in 11.11% (1/9). The masses were grayish white in colour, firm of variable size identified on external os, in uterine body, uterine horns and at utero-tubal junction. Rebhun (1995) described lymphosarcoma as firm umbilicated masses in the uterine wall that appeared similar to residual maternal caruncles. Other gross changes were whitish foci in the mucosa in 22.22% (2/9), darkly congested mucosa in 33.33% (3/9), perimetritis in 33.33% (3/9), thickened uterine wall in 11.11% (1/9) and cystic endometrium in 11.11% (1/9) genitalia. Cytological examination revealed numerous lymphoblasts showing marked pleomorphism, hyperchromatic nucleus, non granular cytoplasm and several nucleoli (Jiménez-Ayala and Jiménez-Ayala Portillo 2008) and clusters of neoplastic endometrial cells showing pleomorphism, anisokaryosis and prominent nucleoli were observed (Atkinson 2004).

Histopathologically clumps of lymphoblasts infiltrated in the endometrium and mucularis in 11.11% (1/9) genitalia. In 22.22% (2/9) samples lymphoblasts were found scattered throughout the endometrium. In 55.55% (5/9) samples infiltration of lymphoblasts focally in subepithelial areas was observed. They were discrete, round with homogenous non-granular cytoplasm and deeply stained, round, centrally located nucleus (Tafti and Darahshiri 2000). In addition to above changes in all cases proliferative endometrial glands were lined by anaplastic epithelial cells arranged in variable number of layers containing eosinophilic cytoplasm, oval to round nucleus and prominent nucleoli (Iglesia et al. 1995). In lymphosarcoma with scirrhous adenocarcinoma clumps of lymphoblasts infiltrated the endometrium, in lamina propria and submucosal areas. Presence of more amount of connective tissue proliferation with less number of glands was observed. Glands were lined by cuboidal epithelial cells with round to oval nuclei and prominent nucleoli. The mean AgNOR count for lymphosarcoma with adenocarcinoma was 6.58 and differed significantly (P ≤ 0.05) over 3.08.
recorded in normal genitalia.

Summary

Seventy three Murrah graded buffaloes genitalia were examined. Lymphosarcoma with adenocarcinoma was noticed in 12.32% (9/73) genitalia, in which 11.11% (1/9) showed lymphosarcoma with scirrhous adenocarcinoma.

References


An Outbreak of Gangrenous Dermatitis in a Commercial Layer Farm and its Management

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Gangrenous dermatitis is a disease of young birds causing mortality between 1% and 60% in the age group of 4 to 20 weeks in pullets and broilers (Cynthia, 2011) and is of great economic importance. The present study describes an outbreak of gangrenous dermatitis and its successful management in an organized poultry farm in Sirsi, Uttara Kannada district of Karnataka.

Materials and Methods

Sudden onset of mortality (1% per day) in a batch of 4000 White Leghorn pullets of 12 weeks age in an organized layer farm during late summer of 2011 was reported. Detailed clinical examination of the ailing birds was done. The case was diagnosed as gangrenous dermatitis. The symptoms observed were dullness,