Short Communication

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Pathomorphological Investigation on Vulvar Fibrosarcoma in A Buffalo

Gauri Arvind Chandratre*, Sushma Kajal, Deepika Lather and Gulshan Narang

Department of Veterinary Pathology, Lala Lajpat Rai University of Veterinary and Animal Sciences (LUVAS), Hisar-125004, Haryana, India

ABSTRACT

Fibrosarcoma a malignant mesenchymal tumour, is rarely reported in external genitalia of buffalo. A biopsy tissue sample of 6 years old female buffalo with a history of large round shape growth approx 250gms attached to dorsum of vulvar lips was received at Department of Veterinary Pathology, LUVAS, Hisar. Biopsy sample was processed for cytological and histopathological examinations which indicated fibrosarcoma. Masson's Trichrome special stain (for fibers demonstration) and AgNOR (to confirm number of nucleoli in the nucleus) staining confirmed fibrosarcoma.

Key words: AgNOR, Buffalo, cytology, fibrosarcoma, tumour, vulva.

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INTRODUCTION

Neoplasm is basically occurring due to alteration of normal cell cycle progression. The studies on bovine tumours are of clinical concern as they may cause economic losses due to negative impact on productivity, animal health and found to be in ascending in tendency (Marosfoi *et al.,* 2009). The occurrence of neoplasm in bovines was found to be 80.76% and more in females than males in bovines (Sharma *et al.,* 2019). Among the various neoplasms, fibrosarcomas are slow growing, malignant tumours mostly found in the connective tissue that connects supports or surrounds other structures and organs of the body. It is a composed of malignant fibroblasts in a collagenous background (Vegad, 2007). Fibrosarcomas have been reported in all species and can be found in any location in the body (Moulton, 1990; Jones *et al*., 1997). However, they are unusual mesenchymal tumours of the bovine vulvar region. The purpose of this report was to describe cytological, histopathological findings along with special and AgNOR staining of a vulvar fibrosarcoma in a buffalo, which is rare in occurrence.

CASE HISTORY AND OBSRVATIONS

A biopsy tissue sample of 6 years old female buffalo with a history of large round shape growth (approx 250 gm) attached to dorsum of vulvar lips was presented to Department of Veterinary Pathology, LUVAS, Hisar. Touch impression smears were taken from various cut surfaces of the growth, fixed in methanol and stained with Field's

*Corresponding author.
E-mail address: chandratre.gauri@gmail.com (Gauri Arvind Chandratre)
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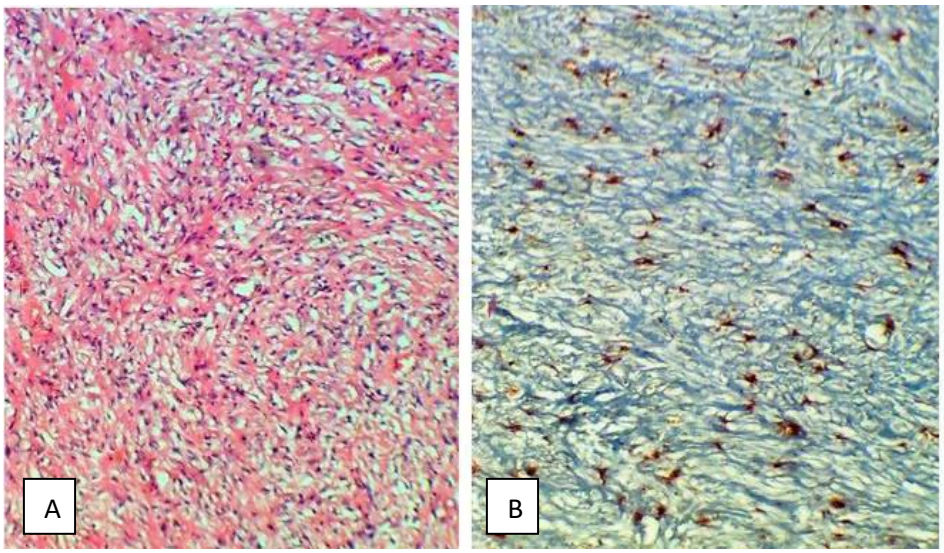

Fig. 1: (A) Haphazard arrangement of tumour cells with high cellularity and loss of polarity H & E stain x100; (B) Blue staining in the tumor tissue, Masson's Trichrome x100.

stain. The small pieces of growth samples were fixed in 10% buffered formalin for histopathology. After proper fixation, tissues were washed in running tap water, dehydrated in ascending grades of ethanol, cleared in benzene and embedded in paraffin. The paraffin embedded tissues were cut into 4 µm thick sections and stained with hematoxylin and eosin as per conventional procedure. Duplicate sections were stained for demonstrations of collagenous stroma by Masson's Trichrome stain (Luna, 1968). The section was also stained for AgNOR by using the method with some modifications as described earlier (Crocker *et al.,* 1989).

TREATMENT AND DISCUSSION

Grossly, growth was ulcerated hard in consistency and whitish in colour. Cytological examination of impression smears showed mesenchymal cells with multiple prominent nucleoli, coarse chromation, anisocytosis, pleomorphism and increased nucleus to cytoplasm ratio. Microscopically, the tissue was composed of spindle-shaped tumor cells forming interlacing and intersecting bundles of immature atypical type neoplastic fibroblasts and moderate number of collagenous fibers (Fig. 1A). The neoplastic cells showed nuclear and cellular pleomorphism with hyperchromatic nuclei. Most of nuclei were elongated to form oval shapes and contained one or more prominent nucleoli. The tumor cells had a scant amount of cytoplasm. The cell boundaries were ill-defined. Mononuclear and multinucleated tumour giant cells (bizarre cells) with large nuclei and prominent nucleoli were generally seen. Similar histological changes were observed in vaginal fibrosarcoma in cows (Musal *et al.,* 2007; Mushap, 2016). Small lymphocytes and plasma cells foci were scattered throughout the tissue. AgNOR staining revealed more than five large bizarre dots in the nuclei of the fibroblasts confirming its malignant nature. Special staining with Masson's trichrome method also demonstrated the positive staining of fibroblasts and collagen rosettes (Fig. 1B). Similar findings were also reported in cow (Musal *et al.,* 2007; Mushap, 2016). Based upon histopathological findings, special and AgNOR staining the tumour was diagnosed as a fibrosarcoma. Similar work was carried out on genital track abnormalities of buffalo stating occurrence of fibroma in genital tract (Saxena *et al.,* 2006) however fibrosarcoma of vulva in buffalo is not reported previously. The present study is very helpful in research on tumors of buffaloes since it is describing pathomorphological changes in vulvar tumor of buffalo.

CONCLUSIONS

Our results may contribute to the veterinary medicine literature by summarizing of findings in a 6-year-old female buffalo diagnosed with vulvar fibrosarcoma using cytological histopathological and special staining investigations. We also believe that a surgical treatment will be useful in the field of veterinary medicine. It will further add in the buffalo tumor research and their diagnosis.

CONFLICT OF INTEREST

None.

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