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Clinical Article

MANAGEMENT OF LYMPHOSARCOMA IN A MURRAH BUFFALO WITH VINCRISTINE SULPHATE

R. JHAMBH[1]*, R. YADAV[1], N. SINDHU[2], T. KUMAR[2], B.L. JANGIR[3], M. KUSHWAH[1] and P. GOEL[1]
[1]Department of Veterinary Medicine; [2]Teaching Veterinary Clinical Complex
[3]Department of Veterinary Pathology, College of Veterinary Sciences
Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar-125 004, India

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SUMMARY

A six years old female Murrah buffalo was presented with history of hard progressive swelling on right side of facial, mandibular and parotid region along with difficulty in mastication for the past one month. Laboratory examination revealed relative lymphocytosis and abundant number of pleomorphic lymphocytes in fine needle aspiration cytology based upon which it was diagnosed to be a case of lymphosarcoma. The animal was treated with a single dose of vincristine sulphate @ 0.02 mg/kg b. wt. intravenously to which the animal responded uneventfully.

Key words: Buffalo, lymphosarcoma, vincristine sulphate

Lymphosarcoma is a malignant neoplastic disease of lymphatic tissue that results in the formation of discrete solid tumour masses and/or the diffuse infiltration of tissues and organs (Hare *et al.,* 1964). There may be several causes of lymphosarcoma in bovines; the only definitely known cause is bovine leukaemia virus infection (OIE, 2012). It occurs in the animals of 4-8 years of age and is characterized by the development of tumours most commonly in abomasum, heart and visceral and peripheral lymph nodes. There is no specific treatment for the condition (Radostits *et al.,* 2007). The present report communicates its successful therapeutic management in Murrah buffalo.

A six years old six months pregnant Murrah buffalo was presented to Teaching Veterinary Clinical Complex of this University with history of inappetence, hard progressive swelling on right side of facial, mandibular and parotid region (Fig. 1), occasional epistaxis and difficulty in mastication for the past one month. Animal was treated earlier with potassium iodide with no improvement. Clinical examination revealed slightly elevated rectal temperature (102.6^{0}F), congested conjunctival mucous membrane, normal heart rate (52/min), enlarged prescapular lymph nodes and decreased ruminal movements (1 per 2 min). Right lateral radiographic examination of facial region was done to rule out the presence of any foreign body or involvement of alveolar bone of jaws but no such abnormalities were detected. Haematological examination revealed normal total leucocyte count (8.7 m/mm^3) with relative lymphocytosis (5.3 m/mm^3) and neutropenia (2.6 m/mm^3). Fine needle aspiration cytology (FNAC) examination of swelling region revealed abundant number of pleomorphic lymphocytes after Giemsa's staining (Fig. 2).

Based upon the clinical findings coupled with laboratory findings of relative lymphocytosis and abundant number of pleomorphic lymphocytes in FNAC, the animal was diagnosed to be a case of lymphosarcoma. The case was treated with vincristine sulphate @ 0.02 mg/kg b. wt. once intravenously in one litre of normal saline solution. To check secondary bacterial infections, a course of broad spectrum antibiotic (strepto-penicillin) was administered along with NSAID (nimesulide), antihistaminic (pheniramine maleate) and multivitamins with antioxidants in recommended doses for a week. An oral liver preparation with iron was also prescribed to stimulate appetite. Case was reviewed on weekly basis. On day 7 (post therapy), clinical examination revealed an obvious reduction in size of lymphoid enlargement, improvement in appetite, normal rectal temperature, slightly congested conjunctival mucous membrane, but prescapular lymph nodes were still enlarged and animal was passing loose faeces.

*Corresponding author: jhambricky@gmail.com

Fig 1. Hard swelling on right side of facial, mandibular and parotid region (day 0)

Fig 2. Obvious reduction in lymphoid swelling on day 14 (post therapy)

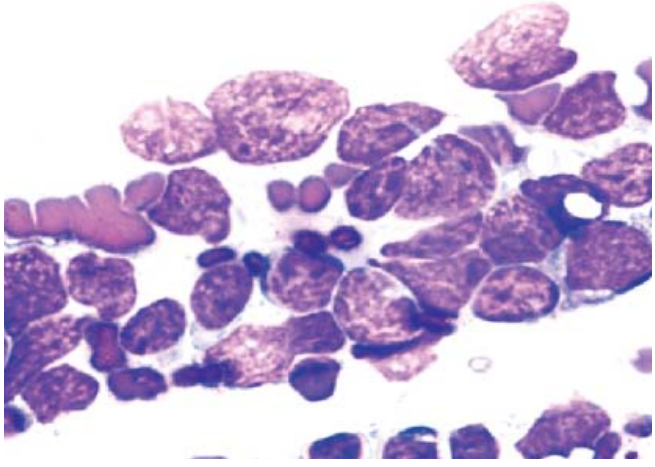

Fig 3. FNAC from swelling showing pleomorphic large immature lymphocytes with dispersed chromatin Giemsa stain × 1000

As the tumours may also develop in abomasum (Radostits *et al.*, 2007), therefore, ultrasonographic examination of abomasum was done. No abnormality was detected in abomasum. At day 7, blood picture revealed severe leucopenia (1.37 m/mm^3) with relative lymphocytosis (1 m/mm^3), eosinophilia (0.1 m/mm^3) and neutropenia (0.1 m/mm^3) that might be explained on the basis of myelosuppressive effect of vincristine (Plumb, 2008). Therefore, the antibiotic course along with antihistaminic and multivitamin with antioxidants was continued for another 7 days. Probiotics along with prebiotics and trace minerals were also given orally to restore rumen function. Examination of the animal on day 14 (post therapy) revealed slightly congested conjunctival mucous membrane, normal prescapular lymph nodes, further reduction in lymphoid enlargement towards normalcy (Fig. 3). Leucogram also returned to normal with total leucocyte count (6.36 m/mm^3) differentiated into lymphocytes (2.9 m/mm^3), neutrophils (3.0 m/mm^3) and eosinophils (0.3 m/mm^3). The animal had an uneventful recovery.

Lymphosarcoma in buffalo may be due to bovine leukemia virus infection where the clinical disease commonly occurs in the animals of 4-8 years of age (Radostits *et al.*, 2007) that correlates with the present case. Lymphocytosis with presence of abundant number of pleomorphic lymphocytes in fine needle aspiration cytological examination is reliable indication of the condition. Vincristine sulphate is used as an anti-neoplastic drug primarily in dogs and cats for treatment of lymphoid and hematopoietic neoplasms (Plumb, 2008).

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