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Cytological diagnosis and therapeutic management of lymphosarcoma in a Murrah buffalo: A clinical study

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Abstract

A six year old non-pregnant female buffalo was presented to Teaching veterinary Polyclinics, International Institute of Veterinary Education and Research (IIVER) Rohtak, Haryana with history of difficulty in mastication, intermittent inappetance, sudden swelling on the right side of face including mandibular and parotid region which extended on the left side of the face from last 15 days. On cytological examination, the case was diagnosed as lymphosarcoma based on presence of abundant number of pleomorphic lymphocytes in the pre-scapular lymph node aspirate. Treatment with a single dose of Vincristine sulphate @ 0.02 mg/kg body weight in one litre normal saline intravenously was done and advised for follow up of the case. There was a substantial improvement in the size of the affected lymph nodes along with moderate reduction in the number of lymphocytes on cytological examination of pre-scapular lymph node aspirate on day 10 post treatment. The animal was given a second dose of Vincristine sulphate at same dose rate and route to achieve complete cytological recovery, which was evident on day 21 post treatment.

Keywords: Buffalo, mandibular, parotid, lymphocytes, lymphosarcoma, vincristine sulphate

Introduction

Lymphosarcoma is a malignant neoplastic proliferation of lymphoid tissue resulting in diffuse infiltration of organs or formation of solid discrete tumor masses, which are locally destructive and invasive and are common in 4-8 year aged animals. [1].

It is caused by the bovine leukemia virus (BLV), a retrovirus. Lymphoma caused by bovine leukemia virus (BLV) infection in various organs (intestines, abomasums, liver and heart). Also many organs in the abdominal and thoracic cavity were affected by neoplastic tissues simultaneously [2].

BLV infection is manifested in three different forms on: 1) BLV infection alone without any clinical expression; 2) increase of the absolute number of peripheral blood lymphocyte; 3) lymphoma; the common form in adults [3]. Electron microscopic studies have indicated that lymphocytic nuclear projections are frequent in adult cattle with lymphosarcoma [4]. Although there is no specific treatment for the condition [5] yet an attempt was successfully made to manage the condition therapeutically.

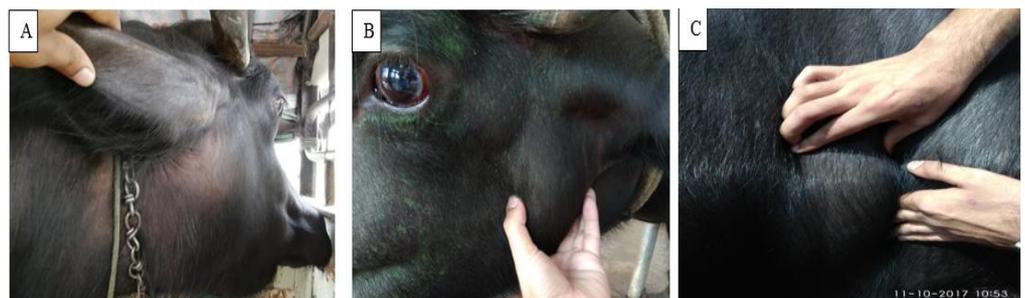


Fig 1: Enlarged submandibular (A), parotid (B) and pre-scapular (C) lymph nodes of the affected buffalo

2. Case history and clinical observations

A five years old female non-pregnant buffalo was presented to International Institute of Veterinary Education and Research Bahu Akbarpur Rohtak, Haryana with a history of difficulty in mastication, fever (105.1°F), congested mucus

membrane, intermittent inappetance, sudden onset of swelling on the right side of face including mandibular (Fig. 1A), parotid (Fig. 1B) pre-scapular lymph nodes (Fig. 1C) and extending on the left side of the face also.

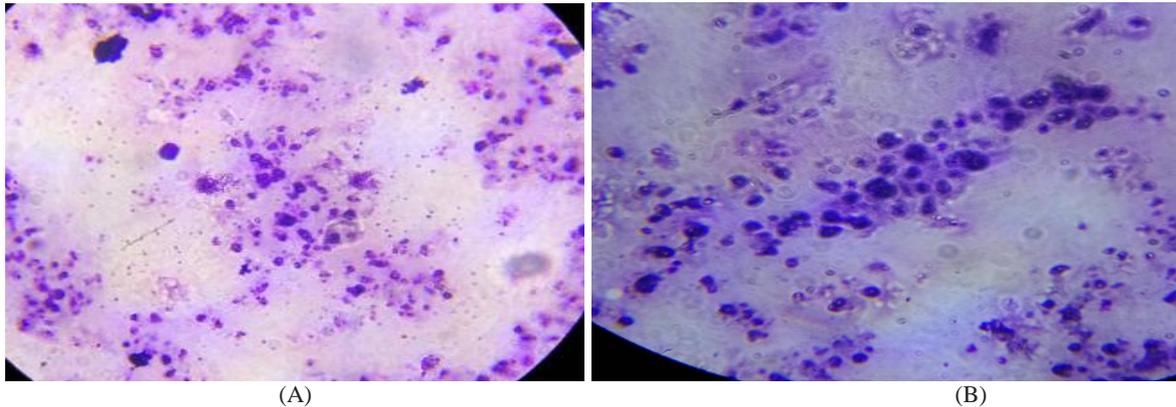


Fig 2: Fine needle aspiration cytological (FNAC) smear of pre-scapular (A) and Parotid (B) lymph node showing pleomorphic abundant lymphocytes, Leishmann (100X)

3. Material and Methods

FNAC examination of the pre-scapular (Fig. 2A) and parotid lymph node (Fig. 2B) aspirate was done by taking the lymph node aspirate from the pre-scapular (A) and Parotid (B) lymph node with the help of 18 gauge sterilised needle after properly disinfecting the site, and stained with using giemsa stain (100X) before visualising at different magnification powers for confirmation of the diagnosis of the case. Microscopic cytological examination revealed an abundant number of pleomorphic lymphocytes after Leishman's staining (100X), suggestive of lymphoid tumor, thus confirming the diagnosis of a case of lymphoid sarcoma.

4. Results

Based on physical, clinical and FNAC examination 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 liter of normal saline solution slowly weekly for 3 weeks. Antibiotics injection Intacef-Tazo 3.5g intramuscularly for 3 days to combat secondary bacterial infection along with injection Avil 10ml and injection Vitalgin 30ml and injection C-Mac 10 ml for 3 days. The animal showed marked improvement in the size of the affected lymph nodes on day 10 post treatment but cytologically, the condition was not convincing. Thus, second dose of Vincristine sulphate at the same dose and route was administered again and the FNAC cytology on day 21 post treatment showed complete recovery of the case as very few pleomorphic lymphocytes were evident.

5. Discussion

Bovine lymphosarcoma is a malignant neoplastic proliferation lymphoid tissue disease affecting cattle of all ages without sex or breed predisposition. There is an evident relationship between the age of the animal and lymphosarcoma occurrence. The common mean age of the affected ones is 5.5 years, ranging from 1-17 years, with age of 5-8 years, the most commonly affected. Lymphosarcoma has been shown to have occurred in young 1 year aged calves. Presence of abundant lymphocytes on cytological examination is a reliable indicator of the condition with evident enlargement of pre-scapular and parotid lymph nodes and swelling on the right side of the facial region in accordance with our study. For the treatment

of lymphoid and hematopoietic neoplasms, Vincristine sulphate is used as an anti-neoplastic drug [6] alone or in combination with other anticancer agents like Methotrexate, Cyclophosphamide for a period of 2-4 weeks depending upon the improvement in the clinical signs and cytological disappearance of pleomorphic lymphocytes from the lymph node aspirates. In our case, Vincristine sulphate was administered second time with similar dose and route on day 10 post treatment, which led to complete cytological disappearance of the abundant lymphocytes by day 21 post treatment. The disease is reported to have inherited susceptibility among the herd mates [7] and it is thought that bovine lymphosarcoma depends upon a genetically linked factor apart from presence of an infective agent.

6. Conclusion

The present confirmed case of lymphoid sarcoma in the buffalo was treated with single dose of Vincristine sulphate Intravenously which resulted in marked improvement in the size of the affected enlarged pre-scapular and parotid lymph nodes with mild cytological recovery. Thus, the animal was treated by second dose of the same drug with same route and dose day 10 post treatment which showed complete cytological recovery of the case as well as substantial reduction in the affected lymph node sizes by around day 21 post treatment.

7. Acknowledgement

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8. References

1. Hare WCD, Marshak RR, Dutcher RM, Croshaw Jr JE. Bovine lymphosarcoma: A review of studies on cattle in the eastern United States. *Canadian Veterinary Journal*. 1964; 5(8):180-198.
2. Yoon SS, Bae YC, Lee KH, Ham B, Ham HR. Characteristics of Bovine Lymphoma Caused by Bovine

- Leukemia Virus Infection in Holstein-Friesian Dairy Cattle in Korea. *Asian-Australian Journal of Animal Science*. 2005; 18(5):728-733.
3. Radostits OM, Blood DC, Gay CC. *Veterinary medicine*, 8th edition, Bailliere Tindall, 1994, 954-965.
 4. Miller JM, Miller LD, Gilleite, Olson C. Incidence of lymphocytic nuclear projections in bovine lymphosarcoma. *National Cancer Institute*. 1969; 43:719-727.
 5. Radostits OM, Blood DC, Gay CC, Constable PD. *Veterinary Medicine: Diseases of Cow, Buffalo, Horse, Sheep, Goat and Pig*, 10th edition, Saunders Elsevier Limited, Philadelphia, USA, 2007.
 6. Plumb DC. *Plumb's Veterinary Drug Handbook*. 6th edition, Blackwell Publishing, Ames, Iowa, 2008.
 7. Jerry Thompson and Thomas Greine. Digital repository, Iowa state university. 1963; 26(3).