

Review Article

CANINE LYMPHOMA AND PYOMETRA IN A SPITZ

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Abstract: A eight years old spitz female dog weighing around 9 Kg (BSA=0.437m²) with a history of facial edema, dyspneic, tachycardia and abducted elbow was brought to the Madras Veterinary College Teaching Hospital. On clinical examination generalised lymphadenopathy with exercise intolerance was noticed. Serological investigation revealed elevated calcium levels. Abdominal ultrasonography revealed anechoic sacculation in the uterus, the mesenteric lymph nodes were enlarged and spleen showed reticular pattern. Radiography of abdomen revealed uterine involvement and pulmonary infiltration. Fine needle aspiration was collected from enlarged popliteal lymph node and cytology of the same confirmed it as Lymphoma.

Keywords: dyspneic, calcium, ultrasonography, radiography, lymphoma.

Canine lymphoma is a common type of tumour in dogs with an estimated incidence rate of 20-100 cases per 100000 dogs and its many changes from molecular to microscopic changes mimics human non-Hodgkin lymphoma (Richards and Suter, 2015). Age predilection for lymphoma is usually the middle age group dogs (Vail *et al.*, 2001). Causes for this are unknown, although environmental factors and genetic involvement are thought to play important role in its aetiology. (Zandvliet, 2016).

Case History and observation

A eight years old spitz female dog brought to the Madras Veterinary College Teaching Hospital with history of facial edema, dyspneic, tachycardia and abducted elbow. On clinical examination generalised lymphadenopathy with exercise intolerance were noticed. Blood samples were collected and its revealed elevated calcium (11.23 mg/dl), elevated total bilirubin (1.5 mg/dl) and direct bilirubin (1.8mg/dl), elevated alkaline phosphatase (300mg/dl) and reduced blood glucose (61mg/dl). Haematology investigation revealed WBC count 27,700/cmm and neutrophil count was 90%.

Enlarged lymph nodes were measured by using digital vernier calliper. Mandibular left lymph node measured 16.97mm in length and 26.87mm in width and right lymph node

measured 22.63mm in length and 12.56 mm in width. Left prescapular lymphnode measured 22.92 in length 19.87mm in width. Right prescapular lymph node measured 23.08 in length and 26.88mm in width. Left popliteal lymph node measured 19.36mm in length and 18.04mm in width. Right popliteal lymph node measured 16.35mm length and 15.15mm width. Abdominal ultrasonography revealed anechoic sacculation in the uterus mesenteric lymph node were enlarged and spleen showed reticular pattern. Radiography of abdomen revealed uterine involvement and pulmonary infiltration.

Treatment and discussion

Ultrasonography of the abdomen revealed hypoechoic areas on the mesentery and cattle reticulum like pattern on the spleen, suggested as splenic and mesenteric lymphoma and anechoic sacculation on the uterus suggested pyometra coinciding with increased WBC count ranging from 27,700/cmm to 40,500/cmm on many occasion during the pet visit for the treatment. Radiography of abdomen revealed uterine involvement and pulmonary infiltration. Cytological investigation of fine needle aspiration and core biopsy was taken from popliteal lymph node was confirmative for Lymphoma. This correlates with the work by Valli *et al.*, 2011 and Ponce *et al.*, 2010 who found cytological investigation of fine needle aspirate samples as a sensitive and specific means of diagnosis of lymphosarcoma.

Biopsy slides from lymphnode subjected for immunohistochemistry and confirmed as T cell lymphoma. Further blood sample sent for polymerase chain reaction partial receptor rearrangement (PARR assay) further added to T cell immunophenotype confirmation.

Pyometra was treated initially by Prostaglandin F_{2α} (PG F_{2α}) at 20-30 µg/kg BW followed by broad spectrum antibiotics such as amoxycylin and clavulunate potassium @ 20mg/kg BW with supportive fluid therapy for 2 weeks. Later the animal was treated by modified Madison Wisconsin university chemotherapy protocol for lymphoma. This is further supported by Cortina *et al.*, 2020, who have followed the CHOP therapy protocol in their study consisting of 3 chemotherapeutic agents (vincristine, cyclophosphamide, and doxorubicin) and a steroid (prednisone) for treatment of canine lymphoma. The dyspneic signs reduced and animal was able to eat.

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