

Pericardial lymphoma secondary to cutaneous Lymphoma in a Labrador Retriever

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Abstract

Lymphoma is a commonly reported neoplasia of the dogs with multicentric form being the more often recorded. The present case report describes the findings in a labrador retriever with cutaneous lymphoma leading to metastasis in pericardium and further causing cardiac tamponade. An 8-year-old labrador retriever was presented with chronic cutaneous lesions and recent development of dyspnoea at rest and unable to sleep. Detailed clinical evaluation revealed muffled cardiac sounds and peripheral lymphadenopathy. Echocardiography revealed diastolic function with significant pericardial effusion impairing diastolic filling. Cytological evaluation of pericardial effusion as well skin impression revealed lymphoblasts with mitotic figures favouring a diagnosis of lymphoma. Owing to poor prognosis and refusal of owner for chemotherapy, treatment was conservatively initiated on Amoxicillin-clavulanic acid, frusemide, Benzapril Hydrochloride and pantoprazole for 5 days.

Keywords: Canine Cutaneous Lymphoma, Pericardial lymphoma, Pericardial tamponade

Lymphoma is one of the commonly reported neoplastic disease of dogs with an estimated incidence of upto 20 cases per 100,000 dogs (Merlo *et al.* 2008). Canine lymphoma share many clinical and therapeutic similarities with human non Hodgkin's lymphoma including a rising incidence rate, a parallel in clinical presentation and response to treatments (Zandvliet, 2016). Multicentric lymphoma is the most common form of the disease in dogs constituting about 75% of the cases presenting wide spread involvement of lymphnodes (Ponce *et al.*, 2010; Vezzali *et al.*, 2010).

Canine cutaneous lymphoma (CCL), on the other hand is a rarer form of lymphoma contributing about 1% of the skin tumors (Goldschmidt and Shofer, 1992). This form of lymphoma typically originates in the skin and may metastasize to the lymph nodes, lungs, or bone (Watton *et al.*, 2021), but pericardial involvement secondary to CCL is exceedingly rare and not previously well-documented. This report details a rare case of pericardial lymphoma secondary to cutaneous lymphoma in an 8-year-old Labrador Retriever,.



Fig. 1: Dog in lateral recumbency



Fig. 2: Ocular lesion with chemosis



Fig. 3: Cutaneous lesions

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Eight year old male Labrador retriever weighing 46 kg was presented to Veterinary Clinical Complex, College of Veterinary Science, Tirupati in lateral recumbency. The dog exhibited the signs of respiratory distress with dyspnea at rest, erythema, hyperpigmentation and swelling in the left eye along with oozing cutaneous lesions with ulceration, lichenification and alopecia. The pet had a history of being treated for dermatological issues with various medications, including clindamycin, ivermectin, and a Bravecto tablet. However, the animal's condition worsened, prompting further evaluation. Upon clinical examination the dog appeared obtunded and recumbent with a rectal temperature of 101.5°F, congested conjunctival mucus membrane and enlargement of peripheral lymph nodes. Auscultation revealed muffled heart sounds with tachycardia and dyspnoea. Whole blood samples were collected for a complete hematological evaluation, and diagnostic cytology was performed via cutaneous impression smears as well as a fine-needle aspiration cytology (FNAC) of the popliteal lymph node. Thoracic radiography and echocardiography were also performed.

Haematology revealed anemia (Hb 8.8 g% ; RBC of 3.1 million/ μ l), severe leukocytosis (31,200/ μ l), with neutrophilia (84%). Lateral thoracic radiograph revealed globoid appearance of heart with a vertebral heart score of 12. There was increased intercostal space occupancy, absence of sternal contact of the heart, and an elevated carina toward the thoracic spine, suggesting an enlarged pericardium or mass effect. Lateral abdominal radiograph revealed cranially displaced spleen with round edges and free fluid in the cranioventral abdomen suggesting ascites. Presence of pericardial effusion with cardiac tamponade and severe left ventricular hypertrophy were noticed (fig. 4 & 5) in echocardiography. The ejection fraction (EF), fractional shortening (FS) and the left atrium/ aortic ratio (LA/Ao) were 75 %, 43% and 1.26 respectively. Ratio of mitral valve E wave and A wave (E/A) was 2.04 indicative of diastolic dysfunction. Abdominal ultrasound revealed normal spleen and liver parenchyma with distended intrahepatic veins and presence of mild ascitic fluid.



Fig. 4: Right Parasternal long axis view showing thickened left ventricle wall and pericardial effusion

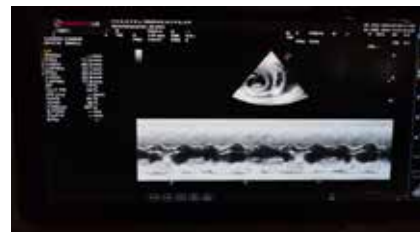


Fig. 5: M mode measurement of left ventricle - right parasternal short axis view. Pericardial effusion is visible

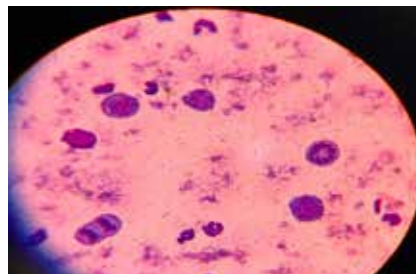


Fig. 6: Pericardial effusion with polymorphism and mitotic figures

Pericardiocentesis was done and pericardial effusion cytology revealed high cellularity with discrete cell population showing polymorphism and mitotic figures (fig.6). Cutaneous impression smear cytology revealed lymphoblasts with mitotic figures. Both results were suggestive of lymphoproliferative

disease favouring lymphoma. Treatment starts with Amoxicillin-clavulanic acid 375mg (1 $\frac{3}{4}$ - 0 - 1 $\frac{3}{4}$), frusemide 80mg (2-0-2), Benzapril Hydrochloride 10 mg (1-0-0) and pantoprazole 40mg (1- 0 - 0) for 5 days. The pet parent opted not to pursue chemotherapy, considering the advanced and deteriorated condition

of the pet. The focus remained on supportive care and palliation to manage the pet's symptoms and maintain comfort during the final stages of the disease.

Canine cutaneous lymphoma is a rare form of lymphoma with poor prognosis and survival times ranging from few months to years. Pericardial effusion is commonly recorded finding in cardiac tumors like haemangiosarcoma, chemodactoma and mesothelioma but is rare in dogs with cardiac lymphoma (1.2%) (MacGregor *et al.*, 2005). In cases involving cardiac lymphoma, median survival time (MST) is drastically reduced, with an average MST of just 157 days, especially when complicated by pericardial effusion and cardiac tamponade (Treggiari *et al.*, 2017). Chemotherapy remains the mainstay in the treatment of canine lymphoma, including both cutaneous and cardiac forms. Lomustine (CCNU) has been studied for its efficacy in treating canine cutaneous epitheliotropic lymphomas and cardiac lymphoma, yielding variable remission rates. The present case highlights the rarity of pericardial lymphoma secondary to cutaneous lymphoma in dogs and diagnostic challenges at field level in recognizing this in earlier stage.

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