PERICARDIAL MESOTHELIOMA IN A DOG

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Mesotheliomas are rare neoplasms that originate from ectodermal cells that line the body cavities. Canine cases of pericardial mesothelioma have been reported infrequently, and it is usually associated with pericardial effusion (Ciosa et al., 1992).

HISTORY AND CLINICAL OBSERVATIONS

A five-year-old female Labrador was presented to the small animal clinic, Madras Veterinary College, with the history of off feed for last one week, lethargic, exercise intolerance and had distended abdomen. On physical examination, the dog was normothermic showing mild respiratory distress. Exaggerated lung sounds on lung auscultation and muffled heart sounds on cardiac auscultation were heard. The abdomen was distended with fluid thrill on percussion.

Complete blood count results were inconclusive and serum biochemical analysis revealed no abnormalities. An enlarged rounded cardiac silhouette was found on a thoracic radiograph. Echocardiography revealed a large amount of pericardial effusion with a linear mass adhering to the pericardial wall (Fig. 1).

Fig. 1. Echocardiographic view of heart showing pericardial effusion and pericardial mass.

Low ejection fraction (31%) and low fractional shortening (14%) was suggestive of systolic failure. Abdominal ultrasonography revealed moderate hepatomegaly with hepatic venous engorgement, and moderate amount of abdominal fluid, however no overt mass lesions were detected. Diagnostic pericardiocentesis was performed at the right sixth intercostals space above the costochondral junction and about 10 ml of serosanguineous fluid was obtained for cytology. Cytology of sediment revealed reactive pleomorphic mesothelial cells suggestive of mesothelioma (Fig. 2).

Fig. 2. Pericardial fluid sediment showing pleomorphic mesothelial cells.
TREATMENT AND DISCUSSION

The present case was managed by pericardiocentesis and diuretic frusemide at the dose rate of 2mg/kg body weight twice daily orally. Antibiotic clindamycin at the dose rate 10mg/kg body weight twice daily orally for secondary bacterial infection due to pericardiocentesis, for two weeks. After two weeks, there was only scanty effusion and the clinic signs were considerably improved. It was advised to continue only diuretic treatment for a month and the final review after two months showed no pericardial mass or effusion. Pericardiocentesis is the recommended means to restore normal intrapericardial pressure and ventricular filling. Pericardiocentesis is done to stabilize animals with life threatening tamponade and to obtain fluid sample for diagnostic evaluation. (Gidlewski and Petrie 2005). The present case was managed by pericardiocentesis and diuretic medication to evade the hemodynamic complications such as tamponade.

Echocardiography revealed pericardial mass and mild pericardial effusion. In such cases the clinical presentation is generally associated with right-sided heart failure due to pericardial effusion and cardiac tamponade. Cardiac tamponade occurs when the intrapericardial pressure rise to the level of the right arterial and ventricular diastolic pressures. Increased pericardial pressure raises the intrathoracic pressure which restrict right sided diastolic filling. Clinical signs of right-sided congestive failure develop as a consequence of tamponade. Forward failure also occurs as a consequence of the reduced right ventricular stroke volume. Ultimately left ventricular stroke volume and cardiac output are reduced, with a consequent tachycardia and increased peripheral vascular resistance (Garrett and MacEwen, 2001). Other possible management as pericardectomy also in one study recurrence of significant amounts of pleural effusion within 120 days of pericardiectomy was noticed which could be fatal in absence of thoracocentesis (Stepien et al., 2000). In another case report it was reported that intrathoracic cisplatin used in combination with intravenous doxorubicin after a pericardiectomy can have a beneficial effect (Ware and Hopper, 1999).

A pericardial mass associated with pericardial effusion and ascites was diagnosed in five-year-old female Labrador. Echocardiography identified a linear mass adhering to pericardial sac and pericardial fluid cytology confirmed it as mesothelioma. Dog was successfully managed with pericardiocentesis and diuretics and finally it recovered completely from the disease.

REFERENCES