Echocardiographic Findings of Idiopathic Pericardial Effusion in a Dog

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Pericardial effusion is the abnormal accumulation of fluid in the pericardium, the membranous, fibroserous sac enclosing the heart and the bases of the great vessels. Idiopathic haemorrhagic pleural effusion is a common canine disease in which serosanguineous to bloody fluid accumulates in the pericardial sac without evidence of neoplasia, cardiac disease, trauma, infection or uraemia (Dupre et al., 2001). The effusion usually accumulates slowly and progressively and presents with sign of chronic cardiac tamponade and right sided heart failure with lethargy, exercise intolerance or collapse (Machida et al., 2004). A case of severe pericardial effusion with ascites and limb edema diagnosed on echocardiography was placed on record.

Case History and Clinical Examination
An eight year old German shepherd, female dog was presented to Madras Veterinary Teaching Hospital with the history of distended abdomen, open mouth breathing, respiratory distress, exercise intolerance, lethargy and abducted elbows. Clinical examination showed temperature of 39.8°C, heart rate of 132 bpm, respiratory rate of 48/min. The most common abnormalities found on clinical examination were muffled heart sounds, ascites, hepatomegaly, distended jugular veins, tachycardia and distressed breathing. Complete blood counts and biochemical profiles were within normal limits. Electrocardiographic studies showed a low voltage QRS complex. Echocardiography revealed massive pericardial effusion with cardiac tamponade. The pericardial fluid was hyperechoic with out any mass lesions. Ultra sound guided pericardial drainage was done and around 600ml of bloody pericardial fluid was removed. Analysis of pericardial fluid showed no evidence of neoplasia or infectious source and hence considered idiopathic. The dog was treated with furosemide @ 2mg/kg b.wt for a month. The condition of the dog improved dramatically after a month's treatment with diuretics.

Discussion
Large breed dogs greater than 30 kg were more likely to have idiopathic pericardial effusion (Stepien et al., 2000). The clinical manifestations recorded in this study was in accordance with the findings of Machida et al. (2004). For the past several years, echocardiogram has been the diagnostic test of choice in cases of pericardial effusion. It is non-invasive and provides much more information than radiography (Miller and Sisson, 2000). Pericardiocentesis was performed at 5th i.c.s just below the costochondral junction with 18 guage over the needle catheter as described by Dunning (2002) and Ware (2000) and the fluid was aspirated that provided more comfort to the animal.

Summary
Recognition of clinical signs of pericardial effusion is crucial for the survival of the patient. Echocardiography is a sensitive and specific method that can detect even a small amount of pericardial effusion, severe enough for cardiac tamponade to exist. Pericardiocentesis is the treatment of choice as it provides immediate relief of cardiac compression.

References

