

Study on Clinical symptoms in canine cardiac diseases

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Abstract

Cardiac diseases in canines are an extensively studied phenomenon all over the world but meagre information has been reported in India. Certain problems, including historical, physical, and laboratory abnormalities, are associated with cardiovascular or pulmonary disease. In India however, the recognition of canine cardiac diseases has been delayed, and ignored on account of lack of awareness and knowledge by the owner and inadequate diagnostic facility to a field veterinarian. Considering the above facts, the present study was undertaken in Gujarat to survey the prevalence of common cardiac diseases in hospital population of dogs along with the clinical symptoms which often goes undetected due to lack of proper diagnostic techniques to be implied and the most forms of heart disease may be present for many years before any evidence of failure develops. In the present study most of the clinical cases of cardiac diseases were presented with a history of nocturnal coughing (seven cases; 2.55%), exercise intolerance (five cases; 1.82%), partial or complete anorexia (five cases; 1.82%), swelling in abdominal area (four cases; 1.45%), dullness and depression (two cases; 0.72%), cachexia and hepatjugular pulsation (one case each; 0.36% each) at times.

Keywords: Cachexia, Anorexia, Cardiac Disease, Canine.

Introduction

With the growth of canine population in urban India, there was a simultaneous increase in the recognition of more clinical entities which has varying outcomes. During recent years, cardiac diseases are being diagnosed with increasing modality with insidious nature and are considered as important health problems in dogs. Parker *et al.* (2006) concluded that canine cardiac diseases are common, complex, and devastating to owners. They are often silent killers, leaving owners and breeders wondering what could have been done to prevent the loss of their treasured pet. There are many ways in which cardiac diseases can be detected and regular visits to a veterinarian will ensure early detection and treatment the difference between life and death. Thorough clinical examination with auscultation of cardiac area along with biochemical assay or cardiac profile, radiology and advance diagnostic technique with the use of ECG and multiparamonitor are helpful for cardiac or heart disease diagnosis in canines.

Materials and Methods

The study was mainly conducted at Teaching Veterinary Clinical Service Complex (Zaveri Clinics)

of the Veterinary College at Anand, Shri Surat Panjarapole Prerit Nandini Veterinary Hospital at Surat. The cases referred to Teaching Veterinary Clinical Service Complex (Zaveri Clinics) from polyclinics and NGOs of Baroda and Ahemedabad of Gujarat region were also surveyed. In the present study, a total of 1,095 dogs were screened for the presence of cardiac diseases. All the dogs were subjected for an initial screening examination for presence of cardiac disease as described by Kelly (1984). This consisted of history taking from the owner, auscultation and general clinical examination. Dogs found to have signs compatible with heart disease were subjected to thorough clinical workup including a detailed history from the owner and a physical examination with special emphasis on detailed auscultation of the heart; augmented by blood pressure, electrocardiographic and radiographic findings. These details were systematically recorded in a proforma.

Results and Discussion

The major clinical manifestations of affected dogs with cardiac diseases are presented in Table 1.

Most of the clinical cases of cardiac diseases were presented with a history of nocturnal coughing

(seven cases; 2.55%), exercise intolerance (five cases; 1.82%), partial or complete anorexia (five cases; 1.82%), swelling in abdominal area (four cases; 1.45%), dullness and depression (two cases; 0.72%), cachexia and hepatjugular pulsation (one case each; 0.36% each) at times. This supplements the view of Wright *et al.* (1996) who opined that the animals presenting with cardiac diseases may have a history of syncope/lethargy (due to reduced cerebral perfusion), weakness/reduced stamina (due to reduced skeletal muscle perfusion), dyspnea/wheeze/nocturnal cough/orthopnea (due to pulmonary edema or pleural effusion associated with raised filling pressures resulting in congestive heart failure), abdominal distention (due to ascites, hepatomegaly or splenomegaly), pallor/cold extremities and prolonged capillary refill time (due to inadequate blood supply to the tissues and the body compensates by peripheral vasoconstriction so that blood can be supplied to vital organs of the body), exercise intolerance (due to inadequate tissues perfusion) and cardiac cachexia (severe wasting that occurs in association with chronic congestive heart failure as a result of poor tissue perfusion, cellular hypoxia, malabsorption, and anorexia).

Auscultation of cardiac area revealed arrhythmic sounds in cardiac arrhythmias (53 cases) secondary to other clinical cases/symptoms. Tachyarrhythmias due to decrease oxygen delivery to the heart and increase tendency for pulmonary congestion, further impairing cardiac function. Sustained cardiac arrhythmias, particularly tachyarrhythmias, frequently accompany cardiomyopathies in dogs. Thus, patients with cardiomyopathy tolerate arrhythmias poorly (Truccone and Krongrad, 1977).

Hypertension due to pressure overload was observed in heart worm (seven cases) and cardiomyopathy (14 cases) groups, leading to congestion in eyes and protrusion of third eye lid.

In all the cases of cardiac arrhythmias arrhythmic sounds were heard which may be attributed to physiologic changes in the haemodynamic state of the body. The symptoms of heart diseases are almost entirely due to the inability of the heart muscle to maintain the normal circulation. All cardiac diseases at some stage may present themselves as disorders of the heart rhythm; likewise, they may ultimately terminate in chronic heart failure and death (Singh, 2002). Vonderhaar (2002) reported that murmurs are prolonged, audible vibrations and their presence frequently indicates heart disease. They are audible due to high velocity or turbulent blood flow. However, some murmurs are innocent or functional (i.e. the heart is structurally normal). Murmurs may be inconsistent or absent with heartworm disease, pulmonary

hypertension, systemic hypertension and cardiomyopathy.

In the present study anorexia, dull and depressed condition, exercise intolerance, tachypnea and hepatjugular pulsation was observed in cardiomyopathy cases. Almost similar findings were reported by Dukes-McEwan (2003) who opined that clinical signs in dogs with DCM and CHF include breathlessness or dyspnea, cough, depression, exercise intolerance, inappetence, syncope, weight loss, abdominal distention, and polydipsia. Clinical examination commonly reveals dyspnea, tachypnea, rales, crackles and increased breath sounds, tachycardia, arrhythmia, and, in some dogs, a systolic murmur of low to moderate intensity (grade I-III/VI). Mallery *et al.* (1999) observed anorexia to occur in up to 84% of dogs with CHF. Tidholm *et al.* (1997) and Sisson *et al.* (1999) reported that the clinical examination of dogs with DCM commonly reveal tachypnea, dyspnea, tachycardia, arrhythmia, a low-intensity systolic murmur in some dogs, weak femoral arterial pulses, ascites, and weight loss. Freeman *et al.* (1998) reported that more than half of the dogs with CHF secondary to dilated cardiomyopathy were cachectic, a common finding in CHF. It is usually more prominent during right-sided CHF and in giant breeds with DCM.

This might be due to the reason that in cardiomyopathy the heart fails to pump effectively. The contractions of the heart are weak and blood is not supplied to the body so efficiently. In addition, the heart stretches and enlarges leading to conditions like anorexia, lethargy, exercise intolerance and arrhythmias.

Dry hacking cough with increased frequency during night (Nocturnal coughing) and fever was a consistent sign in all cases of heart worm. In few cases of heart worm, mild abdominal swelling, anorexia, dull and depressed condition, mild pale conjunctiva, tachypnea, grade II murmurs on right side of the heart and crackles and expiratory sounds were also recorded. This almost supplements the view of Yathiraj (2007) who opined that the most common clinical findings in dogs suffering from heart worm infection are coughing, decreased exercise tolerance and weight loss. Other signs include dyspnea, fever and ascites. This might be due to the worm overload, clogging the heart and major blood vessels originating from the heart, interfering with the valve action in the heart and leading to cardiomyopathy.

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Table-1. Major Clinical Manifestations of Affected Dogs with Cardiac Diseases

Sr. No.	Major Clinical Manifestations	No. of Cases (274)	Percent (%)
1.	Partial or complete anorexia	5	1.82
2.	Exercise intolerance	5	1.82
3.	Nocturnal coughing	7	2.55
4.	Abdominal distention	4	1.45
5.	Dullness, Depression	2	0.72
6.	Cachexia	1	0.36
7.	Pale mucous membrane	11	4.01
8.	Grade II murmurs	1	0.36
9.	Crackles and expiratory grunts	3	1.09
10.	Temperature	7	2.55
11.	Tachypnea	21	7.66
12.	Arrhythmic sounds	84	30.6
13.	Decreased oxygen concentration	74	27.0
14.	Hypertension	21	7.66
15.	Hepatojugular pulsation	1	0.36

* Most of the clinical manifestations of affected dogs were found to be under class II as per The International Small Animal Cardiac Health Council.
