



SECOND DEGREE HEART BLOCK WITH MITRAL INSUFFICIENCY IN A DOG*

Received - 28.07.10

Accepted - 08.02.11

Mitral valve insufficiency is the most common heart disease in dogs accounting for 70 to 80 per cent of the cardiac diseases. Around 75 per cent of the cases are seen in geriatric animal patients above ten years and is most common in males of small breeds.

A seven year old Spitz was presented to the Veterinary College Hospital, with the complaint of occasional cough, falling down while running, loss of consciousness (syncope), circling and leg stiffening similar to epileptic seizures. The dog had been undergoing phenobarbitone therapy since three years for the same. A pulse deficit was noted. The respiration, pulse and rectal temperature were all within the normal range and the conjunctival mucous membrane was pale roseate. The dog revealed no abnormalities upon auscultation except for exaggerated breath sounds.



Fig. 1. ECG finding second degree heart block

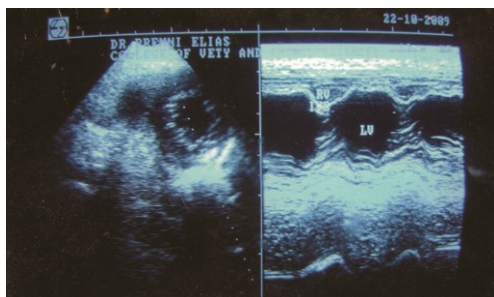


Fig. 2. Hyperdynamic systolic function

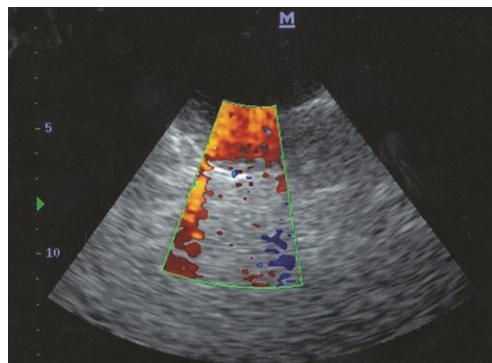


Fig. 3. Mitral regurgitation

ECG revealed prolonged PR – interval (0.16 s) and isolated P – waves without QRS complexes, suggestive of second degree heart block.(Fig.1) Radiograph revealed a generalised cardiomegaly. Echocardiography revealed a deformed mitral valve and its hypokinesia, hyperdynamic systolic function was appreciable in the M – mode(Fig.2). Color Doppler Echocardiography revealed increased turbulence and mosaic pattern(Fig.3). The values of right atrium (2D), left atrium (2D), left ventricular internal diastolic dimension (M-mode), left ventricular internal systolic dimension (M-mode), inter ventricular septum thickness in diastole (M-mode) and inter ventricular septum thickness in systole (M-mode) were 22 mm, 26 mm, 32 mm, 25 mm, 8 mm and 10 mm respectively. Based on the electrocardiographic, radiographic and echocardiographic findings, the cases were diagnosed as second degree heart block with mitral insufficiency.

Mitral insufficiency accounts for around 62 per cent of the valvular in competencies in dogs. Among the clinical signs exhibited by dogs with valvular insufficiency, syncope was particularly important since it was indicative of insufficient

*. Part of the M.V.Sc. thesis submitted by the first author to the Kerala Agricultural University, Thrissur
1. Veterinary Surgeon, AHD, Kerala, 2. Associate Professor, 3. Professor and Head
4. Associate Professor, Dept. of Surgery and Radiology, 5. Director of Clinics, KVASU

forward flow, pulmonary hypertension as well as arrhythmia (Rush, 2002). In advanced stages, the affected animals may exhibit arteriosclerosis and multiple intramural myocardial infarcts. Kienle and Thomas (2002) stated that echocardiographic changes in chronic degenerative valvular disease included left atrial and left ventricular dilatation, left ventricular eccentric hypertrophy, hyperdynamic systolic function and deformed mitral valve, similar to the findings in the study. Color Doppler Echocardiography can be considered as a confirmatory diagnostic aid.

Summary

A case of a dog with mitral insufficiency and second degree heart block is detailed, stressing on the importance of echocardiography in the diagnosis of the condition.

References

- Kienle, R.D. and Thomas, W.P. 2002. Echocardiography. In : Nyland, T.G. and Mattoon, J.S.(Eds). *Small Animal Diagnostic Ultrasound* . 2nd ed. W.B. Saunders co., pp.354 - 424.
- Rush, J.E. 2002. Chronic valvular heart disease in dogs. *Proc. 26th annual Waltham diets / OSU symposium*. pp.1 – 7.

**Anju Eliz Ben¹, Usha N. Pillai²,
S. Ajithkumar³, K.D. John Martin⁴
and P.C. Alex⁵**

Department of Clinical Veterinary Medicine,
College of Veterinary and Animal Sciences,
Mannuthy-680651, Thrissur



* Part of M.V.Sc. thesis submitted by the first author to the Kerala Agricultural University, Thrissur

¹ Veterinary Surgeon, AHD, Kerala

² Associate Professor

³ Professor and Head

⁴ Associate Professor, Dept. of Vet. Surgery and Radiology

⁵ Director of Clinics, KVASU