

Non-cardiogenic (Lone) Atrial Fibrillation in an Anatolian Shepherd Dog (Bir Anadolu Çoban Köpeğinde Non-Kardiyojenik [Yalnız] Atriyal Fibrilasyon)

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Dear Editor,

Herein, we are presenting a case of lone atrial fibrillation (AF) diagnosed by electrocardiography (ECG) in an Anatolian Shepherd Dog. Despite having some limitations, ECG is used as a conventional method to diagnose cardiac rhythm disorders in human and veterinary medicine. Combined with echocardiography and radiology, ECG gives speckle of data about the cardiac disease and/or the arrhythmia caused by metabolic disorders. Since several heart diseases such as dilated cardiomyopathy (DCM) and chronic valvular heart disease can cause AF, existence of AF without underlying cardiac disease is rare. There is only one case presentation on lone AF in dogs in literature [1].

A dog (Anatolian Shepherd Dog, 3-year-old, male, 63 kg) was presented to Animal Hospital (Dep. of Internal Medicine, Faculty of Veterinary Medicine, Uludag University, Bursa) with a history of lethargy, exercise intolerance and fatigue. The dog was lying in lateral recumbency and tachypneic (68 breaths/min). Cardiac auscultation

revealed a gallop heart rhythm with strength decrease, and cardiac murmur was not existed. A weak femoral pulse and mental depression were seen on physical examination. All other parameters including complete blood cell count (VetScan HM5, Abaxis, UK), routine serum biochemistry profile (Comprehensive Profile, VetScan VS 2, Abaxis, UK) and urine analysis were within reference ranges, except a mild haemoconcentration with normal haemoglobin concentration (total protein 8.9 g/dL; reference range: 5.4-8.2 g/dL, haemoglobin 15.8 g/dL; reference range: 11.9-18.9 g/dL). Dog was negative for common vector borne diseases; *Dirofilaria immitis* antigen, *Borrelia burgdorferi* antibody, *Anaplasma phagocytophilum*/*Anaplasma platys* antibody and *Leishmania infantum* antibody (Anigen Rapid Leishmania Ab Test Kits, BioNote, Korea).

ECG examination showed a rapid ventricular rate with absence of the P waves, irregular R-R intervals, and atrial premature contractions (Fig. 1). Thoracic radiography showed a mild bronchial pattern without evidence of cardiac pathology (Fig. 2). There was no any cardiac

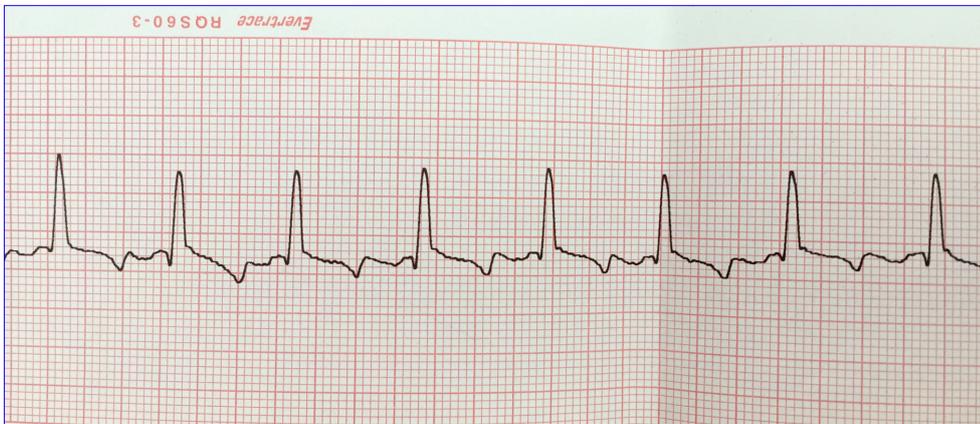


Fig 1. ECG paper of the patient shows a rapid ventricular rate (188 bpm) with absence of the P waves and irregular R-R intervals indicating presence of atrial fibrillation (50 mm/sec, 10mm/1 mV, derivation II)

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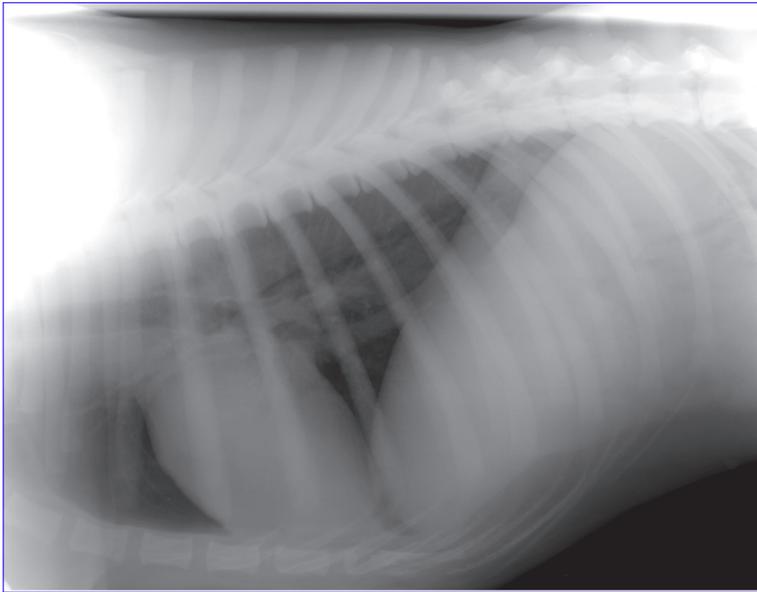


Fig 2. Lateral x-ray of thorax shows a mild bronchial pattern without evidence of cardiac pathology

pathology based on the echocardiographic examination, by using standard techniques such as two-dimensional echocardiography, M-mode, color flow imaging and spectral Doppler examinations (CarisPlus®, Esoate, Florence, Italy) with a 2.5-5 MHz phased-array transducer, as suggested [2]. These observations showed that dog was suffered from AF without cardiac pathology. The reason for observed AF in this patient might be due to haemoconcentration, as described in human and dogs [1].

According to literature [3,4], symptomatic treatments such as intravenous lactated Ringer solution combined

with 5% dextrose (10 ml/kg/hr) were given to rehydrate the patient, prednisolone (1 mg/kg, q12h, PO), and amoxicillin clavulinate (20 mg/kg, q12h, PO) and digoxin (0.025 mg/kg, q24h, PO) was given in order to control AF in the patient.

In conclusion, ECG monitoring is clinically relevant in diagnosis of dogs with arrhythmias and also useful for monitoring treatment. AF is the most life threatening cardiac arrhythmia among canine and feline patients [3], although presence of AF does not always accompany with a cardiac pathology. A poor prognosis in canine DCM can be related to AF [4]. Also, uncontrolled arrhythmias may lead to DCM within days [5]. Clinician should be kept in mind that ECG examination is easy to apply and relatively cheap and gives ideas on already existed cardiological diseases or before their presence.

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