

ECG Quiz

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This complex lead II strip was recorded from a 14 year-old, male Poodle weighing 4.4 kg, with a history of periodic syncope, depression and weakness. A physical examination revealed that the dog had a serous nasal discharge, dehydration and pink mucous membranes. Auscultation of the chest found a heart sound arrhythmia

but normal lung sounds. Blood and serum tests revealed a slight anemia and thrombocytopenia.

Please make your interpretation before turning to the next page.

Intermittent sinus arrest (Sinoatrial block)

The Sinus rhythm was interrupted with a period of sinoatrial block or sinus arrest. This corresponded to the clinical signs of periodic syncope in this dog. The heart rate was approximately 80 beats/min but the rhythm was irregular. There is a period of accelerated sinus beat alternating with long pauses. The long pause without the P-QRS-T complexes is called a "sinus arrest". The pauses have to be twice, or greater-than-twice, the normal R-R interval. A high level of vagal tone, on expiration, probably accounts for the sinus pause. Atropine or anticholinergic drugs may be used to abolish hypervagal activity. A poor response to atropine supports the

diagnosis of "sick sinus syndrome". Sinus node disease and possible an AV node disease may be encountered. The lack of a compensatory physiological response, known as the AV junctional escape beat, at the end of the long pause, supports a finding of a problem in the AV conduction system. The term "sick escape pacemaker syndrome" is sometimes used. Propantheline or bronchodilators, such as theophylline, may improve cardiac function by increasing the sympathetic tone. If the condition advances with a more prolonged pause, a permanent cardiac pacemaker is required.