

ECG Quiz

Chollada Buranakarl* Sumpun Thammacharoen



A 2 year old male intact Golden Retriever came to the animal hospital for a health check. He had neither a history of weakness nor exercise intolerance. On the contrary, the dog has good physical training and frequent exercise over a one year period. An ECG was performed and the lead II is shown as follows

Heart rate	45	bpm
P duration	0.06	sec
P amplitude	0.2	mV
P-R interval	0.12	sec
QRS duration	0.06	sec
QRS amplitude	2.0	mV
Q-T interval	0.28	sec

Please make your interpretation before turning to the next page.

Respiratory sinus arrhythmia with bradycardia

The heart rate is approximately 45 beats/min. The Q-T interval varied in time with the heart rate, the faster the rate, the shorter the interval. In this display the Q-T interval was 0.28 sec (normal Q-T interval = 0.24 seconds). The common causes of bradycardia are sinus node diseases, hypothyroidism, conditions that increase vagal tone or previous drug therapy. Since the dog has no clinical signs, with no history of previous medication, a physiological bradycardia as seen in large breed dogs, is

suspected. However, the thyroid level need to be checked in order to rule out the possibility of abnormal thyroid function. The owner should also watch for any signs of exercise intolerance or syncope. Treatment is not required and should be considered only after some clinical manifestation rather than just the heart rate. The electrocardiogram should be repeated after exercise in order to watch for any abnormal signs and heart rate increments.