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ECG Quiz

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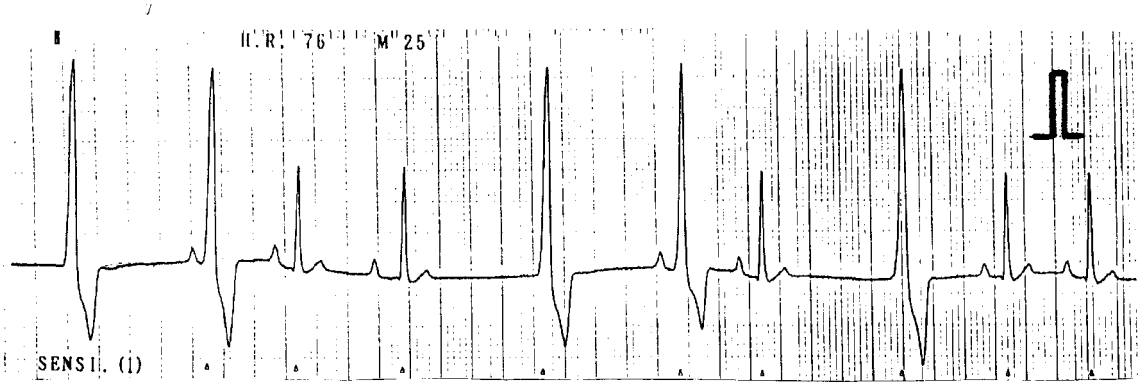

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This lead II ECG strip was recorded from a 3 year-old, male, German Shepherd weighing 32.4 kg, with a history of lethargy and skin problems. The ECG was recorded 2 years previously and showed a first degree AV block. The dog received parental steroid for skin treatment, 10 mg sid for 3 months. Physical examination revealed hyperpyrexia and abdominal enlargement. A small mass could be palpated in the left testis. Blood chemistry profiles showed abnormally high ALT (728 units) and ALP (1924 units). An ECG was recorded and lead II complexes were analyzed as follows;

P duration	=	0.08	sec
P amplitude	=	0.30	mV
QRS duration	=	0.08	sec
QRS amplitude	=	1.70	mV
PR interval	=	0.18	sec
QT interval	=	0.24	sec.
Mean electrical axis (frontal)	=	+ 75^{o}	

Please make your interpretation before turning to the next page.

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Sinus bradycardia with ventricular escape beats (sick sinus syndrome) and first degree AV block

The heart rate was 78 beats/minute. As long as the sinus node keeps discharging, it overdrives the idioventricular pacemaker. However, when the sinus node pauses long enough for the idioventricular pacemaker to spontaneously reach its threshold potential, an escape beat occurs. The escape interval (time between the sinus induced QRS and the ventricular ectopic QRS) is constant at 0.92 sec. It was noted that the PR interval was prolonged in this case causing the first degree AV block which was normally found in sinus node disease. Atropine and theophylline needed to be given to this dog. However if the sinus bradycardia persisted, a permanent pacemaker would be needed to solve the problem.