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Chollada Buranakarl

Kris Angkanaporn

Winai Chansaisakorn

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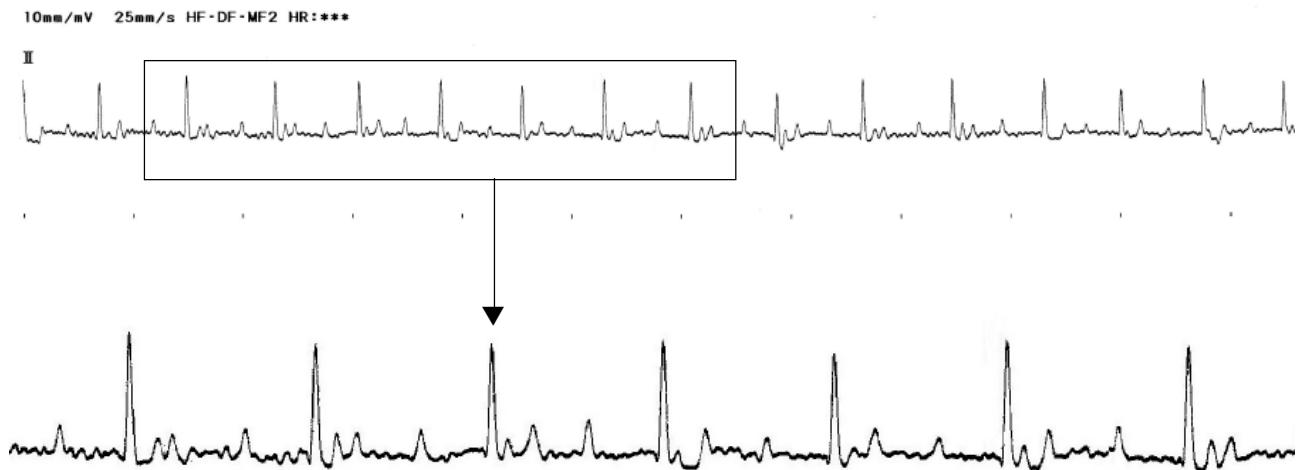
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ECG Quiz

Chollada Buranakarl* Kris Angkanaporn*
Suwanakiat Sawangkoon* Winai Chansaisakorn**



This lead II ECG strip was recorded from a 7 years old, female, mixed breed dog weighing 17 kg that was referred to the Chulalongkorn University Small Animal Hospital with sublingual mass and halitosis. The mass was removed and was diagnosed as malignant melanoma. Thoracic radiograph revealed right heart enlargement

and mild interstitial lung pattern. No evidence of metastasis was found. All hematological and serum chemistry profiles were within normal limits.

Please answer before turning to the next page.

*Department of Physiology, Faculty of Veterinary Science, Chulalongkorn University

**Small Animal Hospital, Faculty of Veterinary Science, Chulalongkorn University

Interpretation

2:1 second degree atrioventricular block

The atrial rate was 160 beats per minute while the ventricular rate was 80 beats per minute. Please notice that the T-waves of the QRS complexes appeared after the non-conducted P-wave making the difficulty to differentiate between P and T waves. Using the AV ladder diagram will help us for better interpretation.

First, draw the lines for the P-wave (A level) and QRS complexes (V level); then draw the line between A and V levels to indicate AV conduction. The site of impulse formation (pacemaker locus) can be represented

by a dot. The blocking of impulse generation can be indicated by the cross line drawn perpendicular to the normal line. In the diagram below, we can locate the pacemaker location where we can see the P-wave was blocked in every alternated impulses. Thus, conducted P-wave seems to have a delayed conduction with the prolonged PR interval shown by unsteep slope in a ladder diagram. The atropine response tests can be introduced in this case to determine if the AV block is related to high vagal tone. A poor response to atropine supports the AV node disease. Since the ventricular rate was still high in this case suggesting adequate perfusion, the treatment may not be required. The ECG should be performed regularly to monitor the progression of the arrhythmia.

