



Taquiarrhythmia SupraVentricular AV Node Reentry

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Introduction:

On the 16 of November 2004 Chuscky a 10 kg 6 years old male mixed breed dog was refered to Hospital Veterinari Molins at the cardiology department for episodes of sudden cough.

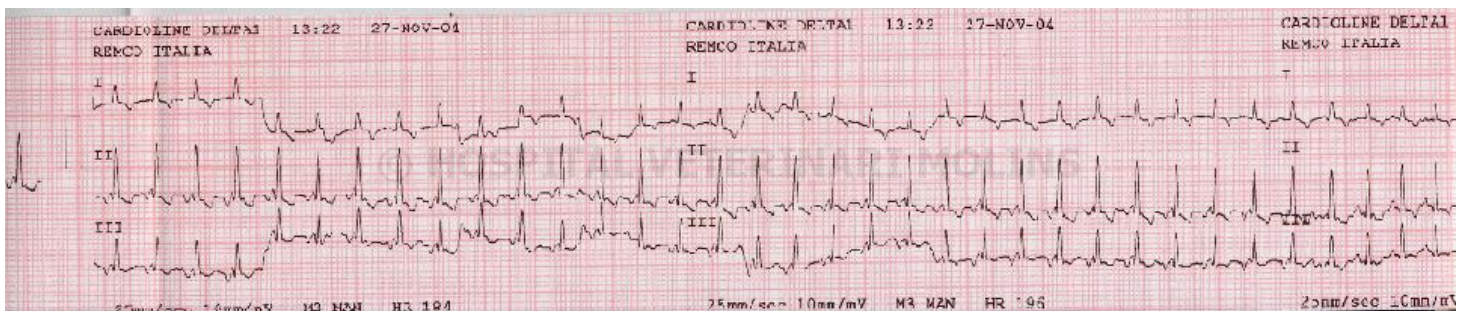
History was unremarkable and the cough was characterized as being dry and occurred during the day especially when excited.

General examination was normal with the exception of increased lower respiratory airways sounds.

Radiographic examination of traquea and thorax was normal as also the fluoroscopic and ecocardiographic studies.

Bronchoscoopia and broncoalveolar lavage were non-specific (chronic bronquitis).

The ECG was abnormal.





ECG Examination:

Is there a relation between all P waves and their respective QRS complex?

What is the duration of the PR interval?

Interpretation:

All the P waves elicit a Ventricular response. The duration of the PR interval is severely decreased.

Diagnosis:

Ventricular preexcitation.

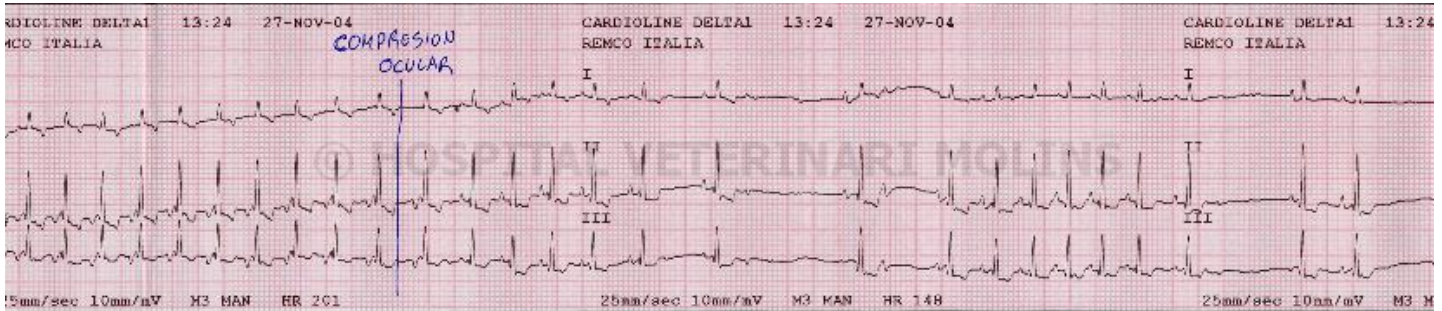
The normal sequence of activation of the conduction system generates a P wave (of atrial origin), a PR interval (corresponding to the slow conduction through the AV Node), a QRS complex (depolarization of the ventricular myocardium) and a T wave generated by the repolarization of the myocardium. In this case the PR interval is shortened this can be for 2 reasons:

The impulse is conducted faster than normal by the AV Node (dependent of AV Node conduction)

The impulse is conducted outside the AV node and therefore it is not delayed (independent of AV Node conduction).

A presumptive diagnosis of Wolf-Parkinson-White syndrome could be made in which the impulse bypasses the AV Node through a remnant myocardial tissue that persisted and that shortens the PR interval.

The AV Node has certain specific characteristics that predispose it to the generation of arrhythmias. One particularity is that it is under the influence of parasympathetic control. This means that the manipulation of the parasympathetic drive can, in case of AV Node involvement; change the behaviour of certain arrhythmias.



ECG Examination:

Vagal manouvers were performed that decrease the excitability of the AV Node.

Interpretation:

The compression of the eyes and carotid sinus massage will increase the vagus stimulation of the heart. In response to these manouvers the arrhythmia was therminated, which indicates that the AV Node was involved and that the existence of accessory pathways could not explain such response.

Diagnosis:

Supraventricular tachyarrhythmia with AV Node re-entrant dependence.

Due to alterations in the normal function the AV node functions as a short circuit constantly activating the heart independent of the atriums. The origin of the rapid heart arrhythmia is the V Node that is depressed when the Vagal manoeuvre is executed and termination of the arrhythmia.

Conclusion:

Recommendations for an Holter study were made but the owners refused. Cucky is corrently on medicadion for chronic bronquitis. Defenitive diagnosis would require a Holter study in order to determine if the cough episodes were secondary to episodes of Supraventricular taquicadia.



Acknowledgements:

“If I have seen farther than other man is because I stood in the shoulders of giants”

Bibliography

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