



**PATIENT**

Mimi Daw

**SPECIES**

Canine

**BREED**

Havanese

**SEX**

Female

**AGE**

5 months

**WEIGHT**

8 lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
 DVM DACVIM  
 (Cardiology)

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Dover Animal Hospital

**REFERRING VET**

Dr. Rodger

**INVOICE**

45937

**DATE**

12/1/25

**PRESENTING CLINICAL SIGNS**

History: Puppy presented for vaccinations over three visits. On each visit it was noted that she had an irregular heart rhythm and missed beats. Mimi is due to undergo GA for her spay surgery and to have some retained deciduous teeth removed.

**ELECTROCARDIOGRAPHIC FINDINGS**

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 120bpm (range 94-150bpm). The rhythm is sinus in origin, with a p for every QRS complex. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. Single blocked P waves throughout; low grade (2:1) with clear prolongation of the PR interval prior to the block (type I; Wenkebach). No ectopic beats, pauses or other dysrhythmias observed.

ECG diagnosis: Normal sinus rhythm with respiratory variation. Low grade 2<sup>nd</sup> degree AV block; type I (Wenkebach).

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

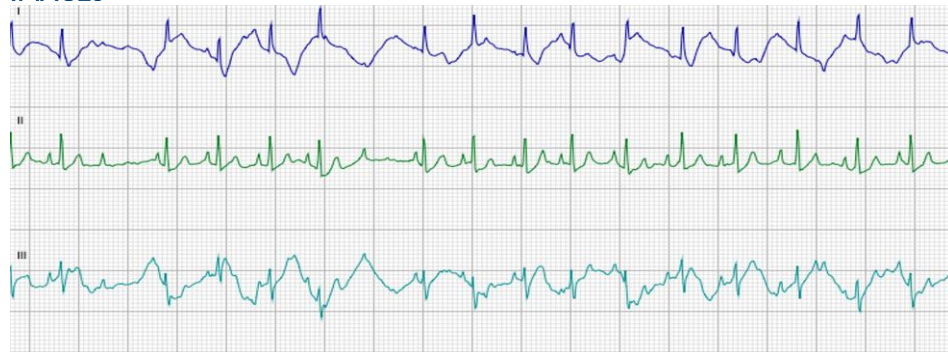
The rhythm diagnosis is low-grade second-degree AV block. This indicates the majority of sinus p waves are conducting to the ventricle and resulting in ventricular contraction; however, occasional P waves are blocked at the level of the AV node. The diagnosis of type I (elongation of the PR interval prior to the block, generally benign and caused by high vagal tone) versus type II (consistent PR interval, due to conduction disease) is important, as type I is typically benign. Type I block will resolve with activity or atropine while type II block is unlikely to respond normally to an atropine challenge, and often can lead to life threatening anesthetic complications such as hypotension, bradycardia and sinus arrest (without a normal response to interventional drugs).

What is seen in this tracing is most consistent with type I, which likely suggests benign high vagal tone. That said, this is unusual to see in an otherwise healthy non-sedated puppy and systemic screening is recommended (labs, AUS, etc). Congenital heart disease is unlikely without a heart murmur; however, an echo could be considered.

Pending results of the Atropine Challenge (administer 0.04mg/kg IV or IM and assess response), a holter monitor may be indicated as the next step (i.e., the response is abnormal). Referral could be considered as an alternative given the highly unusual presentation in this case. Discussion is advised in this instance.

Assuming the atropine challenge is normal, there is no contraindication for anesthesia. Pre-medicating with a vagolytic is advised with heart rate monitoring throughout.

**IMAGES**





**PATIENT**

Mimi Daw

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

**SPECIES**

Canine

Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

**BREED**

Havanese

**Maggie Machen Lamy, DVM**  
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[info@sonopath.com](mailto:info@sonopath.com)

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