

Patient details

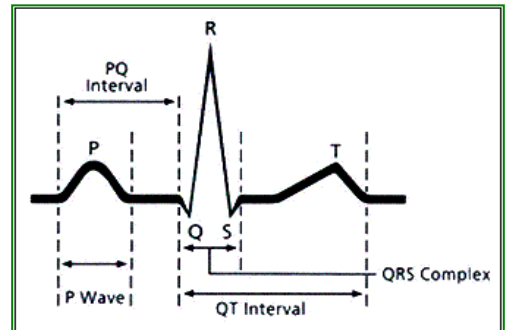
| | | | |
|--|--------------------------|-------------|----------------|
| Hospital No: | Name: Claudia | Surname: | Species: cat |
| Breed: DSH | Sex: FN | Age: 9y 10m | Weight: 3.68Kg |
| Clinician: Jayne Fisher MRCVS | | | |

ECG recording details

| | | | |
|----------------------|----------------|----------------|------------------------------|
| Date: 24-12-10 | Recumbency: RL | Sedation: None | Demeanour: Nervous/shivering |
| Current medications: | | | |

ECG measurements

| Parameter | Unit | Value | Reference |
|----------------------------|------|-------|-----------|
| Average Heart Rate | bpm | 108 | 120-240 |
| P wave duration | sec | 0.04 | <0.04 |
| P wave amplitude | mV | 0.1 | <0.2 |
| PQ interval | sec | na | 0.05-0.09 |
| QRS duration | sec | 0.06 | <0.04 |
| R wave amplitude | mV | 0.2 | <0.9 |
| ST depression | mV | 0 | 0 |
| ST elevation | mV | 0 | 0 |
| QT interval | sec | 0.20 | 0.12-0.18 |
| Mean Electrical Axis (MEA) | ° | 180 | 0-160 |



Morphology abnormalities:

Right bundle branch morphology

Rhythm analysis:

The trace shows a sustained third degree (complete) AV block@108 bpm. Escape rhythm indicates a supra or intra-hissan block.

Comments:

ECG trace recorded on 24-12-10. Transmitted for analysis on 04-01-11 at 15:54;

Third-degree (complete) AV block is a condition in which the impulse generated in the SA node in the atrium does not propagate to the ventricles. An accessory pacemaker in the lower chambers (junctional or ventricular) will typically activate the ventricles (escape rhythm). Since this accessory pacemaker also activates independently of the impulse generated at the SA node, two independent rhythms (atrial and ventricular) can be noted on the ECG. Various conditions can cause complete AV block, including fibrosis of the AV node, inflammation (endocarditis/myocarditis), electrolyte disturbances, excessive vagal stimulation, toxicity (eg digoxin, diltiazem), myocardial disease, cardiac neoplasia, hyperthyroidism (cats). The persistent bradycardia causes cardiac overload and eventually heart failure. However, if untreated, sudden death can also represent a possible outcome.

For cats with clinical signs associated with persistent or intermittent 3rd degree AV block, underlying myocardial disease, hyperthyroidism or congestive heart failure should be treated.

Sympathomimetic drugs may be tried, and may provide adequate control of clinical signs:

- Terbutaline 0.625-1.25 mg/cat q8-12h PO
- Theophylline 15--19 mg/kg q24h PO

However, if medical therapy fails and there are no other contraindications, pacemaker implantation should be considered. There appears to be an increased risk of chylothorax with transvenous lead placement, and it may be better to consider using epicardial leads.



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For this, the approach is transdiaphragmatic via an abdominal incision, and the pulse generator can be placed in the abdomen. Selection of candidates for pacemaker implant requires a full cardiac work-up, which may include include Holter recording, atropine test, serum troponin-I measurement and echocardiography.

I hope this may be of some assistance for the clinical management of the above case. Please do not hesitate to contact me if you have any questions or concerns or if you would like to discuss this case in more detail.

With kind regards

A handwritten signature in black ink, which appears to read 'Luca Ferasin'. The signature is written in a cursive, flowing style.

Dr Luca Ferasin DVM PhD CertVC DipECVIM-CA (Cardiology) MRCVS
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