

# **TABLE OF CONTENTS – Life-Threatening Cardiac Emergencies for the Small Animal Practitioner**

Preface

Acknowledgments

Introduction

## **1 Normal ECG 1**

Before recording 1

ECG set up 2

Recording the ECG 2

What is measured 3

Normal ECG 3

Calculating the heart rate 3

Calculating the mean electrical axis 5

Measuring the complexes 5

## **2 Bradyarrhythmias 8**

Sinus bradycardia 8

Sinus arrhythmia 9

Sinus arrest 10

Atrial standstill 10

AV block overview 12

First-degree AV block 12

Second-degree AV block 12

Third-degree AV block 13

Asystole 15

Cardiopulmonary arrest 16

Escape rhythms 20

### **3 Tachyarrhythmias 22**

Atrial premature complexes 22

Ventricular premature complexes 22

Differentiating SVT from VT 24

Supraventricular tachycardia 27

Atrial fibrillation 28

Ventricular pre-excitation 32

Re-entrant tachycardia 33

Wolff-Parkinson-White syndrome 34

Ventricular tachycardia 35

Accelerated idioventricular rhythm 38

Ventricular flutter 39

Ventricular fibrillation 40

Torsade de pointes 40

### **4 Miscellaneous arrhythmias and cardiac conditions 42**

Artifacts and anomalies 42

Arrhythmogenic right ventricular cardiomyopathy 42

AV junctional rhythms 45

Junctional escape beats 45

Junctional rhythm 46

Bradycardia-tachycardia syndrome (sick sinus syndrome) 47

Electrical alternans (pericardial effusion) 48

Left bundle branch block 50

Left anterior fascicular block 51  
Right bundle branch block 52  
ST segment abnormalities 52  
T wave abnormalities 53  
Canine congestive heart failure—mitral valve insufficiency 55  
Canine dilated cardiomyopathy 58  
Feline aortic thromboembolism (saddle thrombus) 59  
Feline congestive heart failure 64  
Heartworm—caval syndrome (CS) 68  
Pericardial effusion 73

## **5 Electrolyte disturbance and the ECG 77**

Hyperkalemia 77

Hypokalemia 78

Hypercalcemia 78

Hypocalcemia 79

## **6 Emergency algorithms 80**

Bradycardia algorithm 80

Tachycardia algorithm 80

Asystole algorithm (CPR) 80

Arrhythmia drug chart 80

Further reading 86

Index 000.