

# ECG of the Month

This monthly feature is being sponsored by the Academy of Veterinary Cardiology. Readers of the *JAVMA* are invited to submit contributions. Contributions should include: (1) a brief description of the case (150 words); (2) good contrast glossy photographs (5 in by 7 in) of tracings, with ECG lead, voltage calibration scale, and paper speed indicated; and (3) a discussion of the abnormality.

Send comments and tracings to Dr. Christoph Lombard, Department of Small Animal Clinical Sciences, Box J-126, JHMHC, University of Florida, Gainesville, FL 32610.

**A** 10-year-old 6-kg spayed Fox Terrier was examined because of lethargy, signs of depression, and vomiting. Heart rate and rhythm were normal during initial physical examination; however, the dog had signs of abdominal pain. Serum biochemical and CBC values were normal. The dog was fractious, and 0.2 mg of fentanyl citrate and 10 mg of droperidol were administered IV to sedate

arrest with escape complexes, probably arising near the AV junction or His bundle.<sup>1</sup> Although the escape QRS complexes differed in appearance from the sinus complexes, the QRS and T waves were not sufficiently wide and bizarre to fit the traditional description for ventricular escape complexes. Presumably, the conduction path was relatively normal, suggesting that the origin of the escape impulses were near the AV junction or His bundle. The sinus arrest in this dog was attributed to increased vagal tone caused by administration of the narcotic, fentanyl; gastroenteritis may also have contributed to increased vagal tone. The P' wave is superimposed on the QRS complex, indicating that the ectopic focus is probably near the AV junction or His bundle. The P' wave is inverted because of retrograde conduction of the impulse through the atria.

Treatment consisted of IV administration of

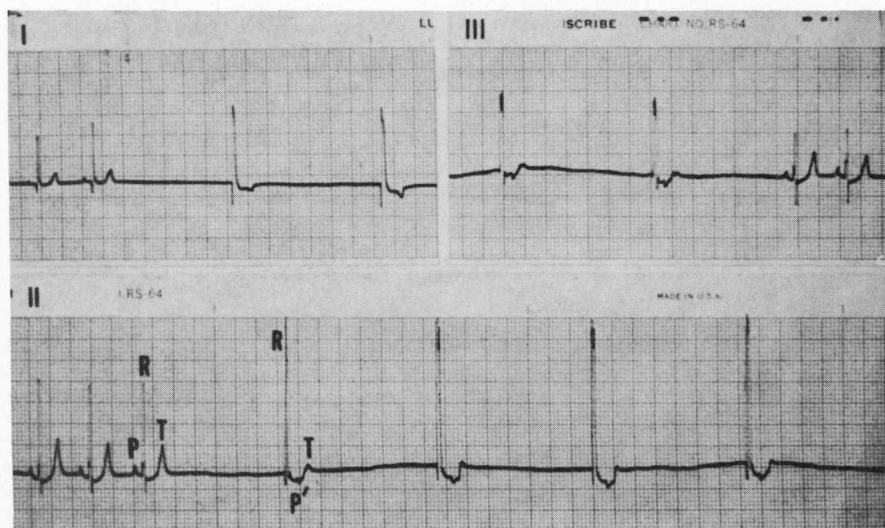


Figure 1—Lead-I, II, and III ECG of a 10-year-old dog sedated with fentanyl and droperidol. The normal R-R interval is 0.48 seconds (heart rate, 125 beats/min). In lead II, following the third R wave, a pause of 1.32 seconds is followed by 4 escape complexes at a rate of 42/min. The QRS configurations of the escape complexes are different from those of the sinus-conducted impulses; probably because of aberrant ventricular conduction. There appear to be P' waves inverted and superimposed on the QRS complexes. Paper speed, 25 mm/s; 1 cm = 1 mV.

the dog. Abdominal radiography revealed lumbar discospondylosis and gastroenteritis. Bradycardia was auscultated during radiography and an ECG was recorded (Fig 1).

## ECG Interpretation and Discussion

The electrocardiographic diagnosis was sinus

arrest with escape complexes, probably arising near the AV junction or His bundle. Although the escape QRS complexes differed in appearance from the sinus complexes, the QRS and T waves were not sufficiently wide and bizarre to fit the traditional description for ventricular escape complexes. Presumably, the conduction path was relatively normal, suggesting that the origin of the escape impulses were near the AV junction or His bundle. The sinus arrest in this dog was attributed to increased vagal tone caused by administration of the narcotic, fentanyl; gastroenteritis may also have contributed to increased vagal tone. The P' wave is superimposed on the QRS complex, indicating that the ectopic focus is probably near the AV junction or His bundle. The P' wave is inverted because of retrograde conduction of the impulse through the atria.

## References

1. Tilley LP. *Essentials of canine and feline electrocardiography*. St. Louis: CV Mosby Co, 1979;130-131,142-143.