

Anesthesia & Arrhythmias in Dogs

HIGHLIGHTS

- Significant arrhythmias can occur in the perioperative period in young, healthy dogs undergoing routine surgery.
- The most common postoperative dysrhythmias were second degree atrioventricular block (44%), ventricular complexes (44%), and atrial premature complexes (32%).
- The cause for the high frequency of postoperative arrhythmias remains unknown.

The type and frequency of cardiac dysrhythmias occurring after routine neuter procedures in young, healthy dogs were assessed during use of 2 anesthetic protocols. Fifty healthy dogs younger than 2 years of age were premedicated with IM acepromazine (0.05 mg/kg), hydromorphone (0.1 mg/kg), and glycopyrrolate (0.01 mg/kg). Dogs in group 1 were induced with propofol (max 4 mg/kg IV) and maintained on isoflurane. Dogs in group 2 were induced with thiopental (max 10 mg/kg IV) and maintained on halothane. Holter monitors were fitted, and electrocardiograms were recorded for at least 20 hours. No significant complications occurred during the study period. Second-degree atrioventricular block, ventricular premature complexes (VPCs), and atrial premature complexes (APCs) were the most common dysrhythmias occurring in the postoperative period (44%, 44%, and 32%, respectively). Significant arrhythmias (defined as 1 or more of the following: more than 100 VPCs or APCs per 24 hours, or any presence of R-on-T phenomenon, ventricular tachycardia, or atrial tachycardia) occurred in 9 dogs after surgery—5 in group 1 and 4 in group 2. All of these dogs were younger than 1 year of age. There was no statistical difference in occurrence between males and females, although females may potentially be predisposed because of a higher pain level associated with spay than castration procedures. No statistically significant difference

existed between the 2 anesthetic protocols, although more serious ventricular arrhythmias were noted in the group-2 dogs. Clinicians should be aware of the potential for significant arrhythmias in young, healthy dogs undergoing routine surgery when either of these protocols is used.

Prevalence of perioperative arrhythmias in 50 young, healthy dogs. Duerr FM, Carr AP, Duke T, et al. *CAN VET J* 48:168-177, 2007.