

Experimental implantation of the temporary cardiac pacemaker in seven dogs

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Cardiac pacemaker is primarily indicated in animals with symptomatic bradyarrhythmias and conduction disturbances that are unresponsive to medical control. Temporary transvenous pacing can be used not only in unstable patients in the emergency setting but also in all patients receiving operation during general anesthesia. We implanted temporary pacemaker in seven dogs, and compare the results obtained before and after pacemaker implant. In this study, complete blood counter(CBC), biochemistry profiles, thorax radiography, echocardiography, electrocardiogram (ECG), general physical condition were examined.

Pulse generator program was fixed with VVI mode(fixed rate, single-chamber, ventricular-inhibited pacing mode), 120 bpm (heart rate), 3.5 V (amplitude), 0.4 ms (pulse width), bipolar (pace polarity) in all experiment.

Two dogs had complications. One dog died 2 days after pacemaker implantation. The other dog had muscle twitching and lead dislodgement after pacemaker implantation. Any complications were not observed in the other dogs. Complete blood counts(CBC) and biochemistry profiles were not remarkable. In electrocardiogram, pacing spike were noted in four dogs and three dogs were reached voltage threshold required at the electrode-myocardial interface to pace the heart. Vertebral heart score (VHS) and results of echocardiography were not change before and after. Also, general physical condition was good.

This study demonstrates that cardiac pacemaker implantation did not cause severe side effects and can be used for electrical disturbance of dogs in the future.

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