

Pacemakers Are Now Commonly Available For Dogs

Many people know someone who has had a pacemaker implanted for a cardiac rhythm disturbance. Like so many treatments, this has now made the switch from human to veterinary medicine and pacemakers are widely available for implantation into dogs that would otherwise be reliant on less effective drugs. What is a pacemaker? A pacemaker is an electronic device for use in certain cases of heart disease to assume the functions of the natural cardiac pacemaker. The first pacemaker to be implanted in a human was in 1957, the first dog to have a pacemaker fitted was in 1968. Since then, the implantation technique has developed so that a pacemaker can now be implanted by feeding it up a peripheral vein to the heart, rather than via open chest surgery. When is a pacemaker required? Pacemakers are useful in the treatment of a slower than usual heart rate (bradyarrhythmia) that causes symptoms in the patient. These types of rhythm disturbances are poorly responsive to drugs. The 2 most common types of bradyarrhythmia in dogs are: 1) Third-Degree Atrioventricular Block 2) Sick Sinus Syndrome Dogs with either of these conditions usually have a history of a slow heart rate, exercise intolerance, lethargy and sometimes collapse (syncope). Some dogs with third-degree atrioventricular block may already have signs of congestive heart failure, such as fluid in the abdomen (ascites) and fluid between the lungs and chest wall (pleural effusion). What is required for diagnosis? A complete baseline blood profile, including hematology and biochemistry, should always be conducted to rule out concurrent disease. Chest xrays often show an enlarged heart, and are useful to rule out primary respiratory disease. Ultrasound is used to assess the contractility of the heart muscle, the dimensions of the heart chambers and the function of the valves. The most important of all diagnostic tests is electrocardiography (ecg). This measures the electrical pulses in the heart itself, so is the most useful for studying rhythm disturbances. How is a pacemaker fitted? The dog is put under general anesthetic, taking care to maintain circulation and ventilation as best possible during the procedure. Sometimes a temporary pacemaker is placed via a leg vein, from induction of anesthesia until the permanent one is implanted. The permanent pacemaker is fitted via a lead in the right jugular vein in the dogs neck. The lead is passed all the way down into the right ventricle of the heart. Once in place, the lead is connected to the pulse generator and the heart is paced as necessary. A pulse generator is implanted under the skin on the right side of the neck. Once implanted, the pacemaker can be interrogated to find out information about sensing and pacing thresholds. The heart rate can be set according to the heart disease present. Is there much postoperative care? A bandage is placed around the neck for 7 days following surgery. Dogs should be kept calm for the 48hrs following surgery, the anti anxiety drug acepromazine is sometimes prescribed for this purpose. Antibiotics and painkillers are given for a week or so after the implantation. What about longer term aftercare? Aftercare of pacemaker dogs is vital. Animals must be kept quiet for 28 days after implantation to allow the lead to become imbedded in the heart wall. If the lead becomes dislodged the pacemaker will fail, with potentially disastrous results. Regular follow up appointments with the cardiologist are very important. Stitches are removed 10 days after the procedure, with further appointments at 4 week intervals for several months. Summary Whilst for many uninsured pets pacemakers might not be affordable, technological advances mean they are becoming cheaper and more widely available. Although implantation is considered a high risk procedure, complications rates are low and the severity of the disease means it is the treatment of choice. Pacemakers allow many dogs to return to their normal day to day activities, and most of them can enjoy a relatively normal life expectancy.

About the Author

Dr Matthew Homfray is one of the experts on recently launched free Pet Q&A service <http://www.televets.com>. Visit them today, you will be impressed by the quality of their experts and the speed with which your question is answered!

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