



## **Martin Referral Services**

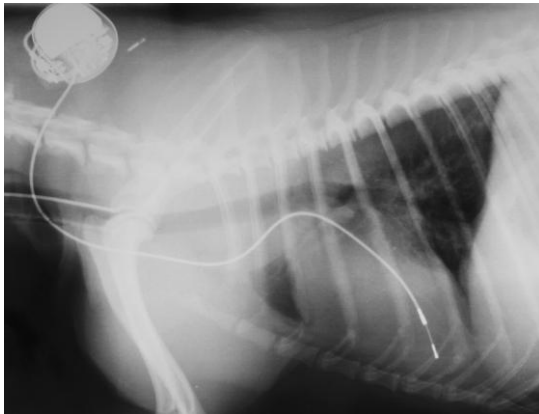
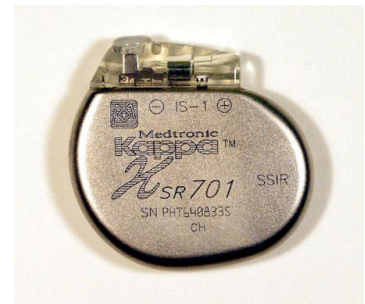
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### **Owner Information**

## **Pacemakers**

A pacemaker is an electronic device that maintains the heart rate (and therefore circulation) by stimulating the heart to contract when the heart's own electrical activity fails to do so. In dogs the pacemaker is inserted under the skin at the side of the neck, from which the pacing lead (the wire that conducts the electrical 'spark') passes under the skin to the jugular vein in the neck, through it and into the heart. The pacemaker works by monitoring the heart beat and if the heart intermittently stops, the pacemaker then stimulates the heart at these times to keep it going (this is called 'demand' pacing). In an animal with complete heart block, the heart rate is always too slow, thus the pacemaker stimulates the heart most of the time. Pacemakers can also detect movement during exercise and increase the heart rate at these times (this is termed a rate-responsive pacemaker). Typically we set the pacemaker to have a heart rate range of 60/min to 160/min.



The Veterinary Cardiorespiratory Centre is one of the few specialist centres in the UK to regularly perform pacemaker implantation. Due to our considerable experience we have a high success rate and the long-term outcome is usually good. Anaesthesia is one area in which complications can arise, however we have procedures in place to prevent cardiac arrest during anaesthesia and our mortality rate is very low.

Before recommending pacemaker implantation our cardiologist will check the medical history provided by your vet as well as the results of any diagnostic tests such as the blood results, ECG and chest x-rays. He will also perform a thorough clinical examination and cardiac ultrasound scan to check for any underlying problems.

#### **Prior to your appointment**

Ask your vet to send a blood sample to a commercial veterinary laboratory to screen for possible medical conditions prior to your appointment with us, ie. haematology, biochemistry, electrolytes, thyroid screen and serum troponin.

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## **Pacemakers cont/.....**

### Post Surgery

Your pet will return home a couple of days following surgery with a large bandage around the neck. The bandage protects the operation sites from being scratched, helps to reduce any swelling, helps to protect against infection and restricts head movement (minimising the risk of lead displacement). Infection is a potentially lethal complication, so please ensure your pet receives the daily antibiotics we will dispense. Once home, exercise should be restricted for 4-5 weeks to allow healing. If possible prevent your dog from activities that over-stretch the neck such as jumping up or playing madly. Because of the position of the pacemaker and lead, your pet should not be restrained by a collar - it is preferable to use a harness (you may wish to purchase one in advance). The sutures and bandage can be removed by your vet 14 days after surgery.

### Long term management

Your dog will need to return for pacemaker programming checks. These visits monitor the battery life and ensure the pacemaker settings are optimised to meet the individual needs of your pet and maximise battery life. The first programming check is due 3 – 4 months after surgery: this is the most important check, being the first opportunity to optimise the settings. After that a programming check is required annually. We will contact you with the date and time of the clinic two or three weeks in advance. This has to be co-ordinated around a medical ECG technician who usually performs these checks on our behalf. (We always try to give you as much notice as possible, but please be aware that we must fit in around their commitments to their human patients!)

Should your dog outlive the battery life of the pacemaker, we can replace it. This involves a short operation to remove the old pacemaker and attach a new one to the existing lead. The pacemaker programming checks give us advanced warning of battery depletion.

### **IS YOUR PET READY FOR A STERILE PROCEDURE?**

It might seem obvious, but for any sterile procedure it is important your pet is not dirty and does not have any skin infection (including fleas) that could contaminate the surgical site or any implants. Ask your vet to check for any infection that might be hidden under a thick coat, especially in the neck. If necessary, please also bath your dog prior to your appointment.