

Tips on Maintaining Animal Comfort

Data Sciences International (DSI) transmitters have been proven, through years of testing and use, to be very biocompatible. Under normal use and when following correct surgical techniques, these devices are well tolerated in animals of the recommended species and size. Occasionally, however, an investigator will experience problems with animal irritation with or without exposure and/or removal of the devices. The most common issues and how to prevent them are described here:

Suturing Too Tightly

One cause of animal irritation is tying the suture knots too tightly. When closing muscle or skin it is only necessary to bring the two edges into contact. Binding them tightly together does not increase the strength of the suture line or speed healing and can create complications. Sutures that are tied very tightly actually prevent blood flow to the tissue along the edge of the incision. This can cause that tissue to die and slow healing of the incision. During the first few days following surgery, mild swelling at the incision site is a normal response. If the suture knots were tied too tightly, this swelling will cause additional compression of the underlying tissue, further inhibiting circulation to the area, and creating animal discomfort. Many animals respond to this pain with excessive grooming, scratching, or even chewing at the surgical site. This can result in the loss of the sutures and opening of the incision. Closing the incision with sutures tied just tightly enough to bring the two edges together will allow room for tissue swelling without the problems associated with loss of circulation.

Suture Type and Size

The choice of suture material is also important to help improve animal comfort. When sutures are to remain in the body, it is extremely important that the material be as non-reactive as possible. Historically, silk has been used as a non-absorbable suture material. However, most veterinary surgeons do not recommend the use of silk as a permanent suture because of its tendency to cause inflammatory tissue reaction. Synthetic suture materials are superior to silk in terms of biocompatibility. Two of the most commonly used non-absorbable synthetic suture materials are nylon and polyester. They come in many different sizes and types and they avoid most or all of the problems inherent with silk. Please see the individual surgical manuals for specific suture recommendations. It is also important to use a suture of the appropriate size for the species being used. In rodents, it is common to use 4-0 or 5-0 suture for most procedures. In larger animals, such as dogs and primates, 3-0 or 2-0 suture is most commonly used. Using suture that is too large can cause a tissue reaction due to the presence of more foreign material associated with the larger knots. Using suture that is too small may not provide the strength necessary to hold the incision securely. Trimming the excess suture from the tied knots will also reduce tissue irritation.

Proper Pocket Size

Another reason that the animal may chew is due to excess pressure from an implant placed in a subcutaneous pocket that is too small. If the implant does not fit easily in the pocket, the skin stretches across the contours of the transmitter. This can lead to animal irritation and chewing or skin necrosis and implant exposure. To avoid this, ensure the subcutaneous pocket being made is large enough to comfortably accommodate the transmitter. If the pocket appears too large and there is concern over implant migration, a purse-string suture may be placed in the tissue to minimize excess space.

Infection Prevention

An infection along the incision or within the body cavity containing the implant can be another cause for delayed healing and animal discomfort. This can be identified by the presence of inflammation (heat, swelling, redness) or pus or discharge at or around the incision or implant. The animal may exhibit signs of illness, i.e., fever, lethargy, pain. If an infection develops around the implant, it is unfeasible to cure it without removing the implant. Therefore, the best solution to prevent this complication is strict adherence to aseptic technique during surgery. It is very important to shave and scrub the surgical site, use sterile drapes to prevent contamination from surrounding tissue, use sterile instruments, and scrub and wear sterile gloves when performing the surgery. The use of pre- and post-surgical antibiotics should be determined in consultation with your staff veterinarian.

If you have further questions regarding this situation, please contact Technical Support.

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