

The Use of Liposomal Bupivacaine as an Incisional Analgesic and its Effects on Wound Healing

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Abstract:

Application of local anesthetics can improve pain relief post-operatively; however, local anesthetics have been reported to result in impaired wound healing. The objectives of this study are: 1) to determine if administration of a local injection of liposomal bupivacaine (NOCITA®) will provide anesthesia over a surgical incision; 2) to determine if NOCITA will delay wound healing; and 3) to determine if NOCITA alters the inflammatory and growth factor responses at the incision site. We hypothesize that administration of NOCITA will provide local analgesia over a period of days, will not delay healing, and will have a minimal effect on the inflammatory and growth factor responses at the incision site. To test the hypotheses, two skin incisions will be made on either side of the flank of six horses. Immediately after the incision is made, one incision will receive a subcutaneous injection of NOCITA®. The opposing incision will serve as the control and will receive an equivalent volume of saline. Incisions will be evaluated twice a day, and incisional margin biopsies for histology and gene expression determinations will be collected on day 0, 3, 7, and 14. Pain will be assessed using Von Frye filaments. Incisional healing will be assessed subjectively and histologically. The inflammatory response and growth factor production will be determined via RT-qPCR, and the number of neutrophils/macrophages at the incision margin will be determined via immunohistochemistry of MAC387 staining. Results of this study will provide veterinarians with information regarding NOCITA related analgesia efficacy and incisional healing in horses.