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Onset and duration of liposomal bupivacaine in Holstein calves using a cornual nerve block

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ABSTRACT

Dairy calves are routinely disbudded during their first few weeks of life in order to prevent injuries and provide safety for their handlers. Disbudding is a procedure that removes the calves' horn buds and activates nociceptors and causes acute pain and sometimes chronic pain. In order to mitigate pain, lidocaine or bupivacaine are used; however, their duration of analgesia lasts less than six hours. In order to alleviate chronic pain, a long-term local anesthetic must be used. Liposomal bupivacaine has shown in animals and humans to have a duration of analgesia ranging from 26 to 72 hours. To determine the onset and duration of anesthesia liposomal bupivacaine, calves were treated with lidocaine, bupivacaine, or liposomal bupivacaine in a double-blind experiment. One cohort of calves was tested prior to the COVID-19 outbreak, and the experiment is expected to resume when quarantine restrictions are lifted.