Development and clinical application of pudendal nerve block using a peripheral nerve locator for reproductive surgery in horses.

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Introduction

To develop, describe and evaluate clinical applicability of pudendal nerve block using a peripheral nerve locator.

Methods and materials

In a pilot study, 6 ponies were used to determine the correlation between nerves serving the perineal region (namely pudendal, caudorectal and perineal nerves) and the muscle contractions observed when an electrolocation technique was used. After appropriate electrolocation, a small volume of lidocaine/methylene blue solution was injected under general anesthesia. The dye location relative to the specified nerves was examined after humane euthanasia, followed by dissection of the relevant region.

In a second experiment, 7 thoroughbred horses were used to evaluate the appropriate volume of lidocaine solution for the nerve block. Lidocaine/methylene blue solution was injected after positive electrolocation immediately (5-40 minutes) after euthanasia. A stained segment of 2 cm or more of the nerve was deemed to be sufficient and was evaluated after dissection. Finally, evaluation of a bilateral pudendal nerve block was used to provide anesthesia and analgesia in 21 clinical cases involving both mares and geldings.

Results

Anal twitch alone was associated with injection of the caudal rectal nerve, whereas combined twitch of the anus and perineum was required for reliable location and injection of the pudendal nerve. Injection was more accurate in standing rather than laterally recumbent horses. A volume of 10 to 20 ml of lidocaine or mepivacaine bilaterally, reliably provided at least 120 minutes of clinical analgesia for perineal surgery. Procedures satisfactorily completed included; urethral extension and perineal body repair in mares and penile examination, removal of penile tumors and penile amputation in male patients.

Relevance to clinical equine practice

Pudendal nerve block is a practical and effective alternative to epidural analgesia for selected standing surgical procedures of the reproductive tract in male and female horses.

Declarations

The Cornell University Institutional Animal Care and Use Committee approved the project. The work follows international, national/or institutional guidelines for humane animal treatment and complies with relevant legislation in the country in which the study was conducted. The work involving client-owned animals demonstrates a high standard (best practice) of veterinary care and involves informed client consent. There are no competing interests to declare.