
ULTRASONOGRAPHIC MONITORING OF ELECTROEJACULATION IN THREE SPECIES OF RHINOCEROS (*Ceratotherium simum*, *Diceros bicornis*, *Rhinoceros unicornis*)

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Abstract

Electroejaculation has been generally unsuccessful for the rhinoceros. Two black rhinoceros (*Diceros bicornis*), two white (*Ceratotherium simum simum*) and one greater one-horn rhinoceros (*Rhinoceros unicornis*) were monitored by rectal ultrasonography during electroejaculation. The electroejaculation procedure was modified as described previously.¹ The ultrasound probe was incorporated into a custom engineered electric probe, designed by the authors. Seminal emission into the posterior urethra was ultrasonographically observed for each animal except the greater one horn rhinoceros. Seminal fluid was successfully collected in 12 attempts to electroejaculate these five animals. Two later collections from the greater one-horn rhinoceros produced semen of low to zero sperm concentration. Electric thresholds for the first ejaculate occurred between 200-500 milliamperes, and 5-9 volts within 25-90 stimulations. Semen accumulated in the pelvic urethra during pauses between series of electric stimulations above these thresholds. This accumulation was then cleared by either further electric stimulation or massage of the penis. Overall semen quality measurements included semen volume (15-168 ml), sperm concentration (0 to 493×10^6 ml), sperm motility (10-85%), and pH levels (7.5-8.5). Seminal fluid was produced in all procurement attempts on all animals. Of these attempts, 11 out of 12 contained motile sperm. Recovered semen exhibited parameters superior to previous reports. Ultrasonographic monitoring of the electroejaculation procedure improved sperm collection in the rhinoceros.

LITERATURE CITED

1. Schaffer, N. E., W. Bryant, D. Agnew, T. Meehan, B. Beehler. 1998. Ultrasonographic monitoring of artificially stimulated ejaculation in three rhinoceros species *Ceratotherium simum*, *Diceros bicornis*, *Rhinoceros unicornis*. J. Zoo Wildl. Med. 29:386-393.