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A new method to generate canine seminal emission and its application to men: direct electrical stimulation of the vas deferens

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Seminal emission from the ejaculatory duct (SEED) by direct electrical stimulation of the vas deferens was investigated in the dog, and the technique was applied to men. The stimulus parameters used were 2 msec, 10 Hz, and 8 V for dogs or 15-20 V for humans. In vitro studies using tetrodotoxin demonstrated that the major portion of the muscle contraction under the above stimulation was neurogenic. The stimulation of the pars epididymica, the middle vas, or the ampulla of the vas caused SEED in all dogs having intact hypogastric nerves (HNs) and receiving transection of bilateral HNs 1, 6, and 12 months before electrical stimulation. The dye instilled into the canine cauda epididymis was transported to the ampulla and emitted into the posterior urethra by electrical stimulation of the vas regardless of the site stimulated. The electrical stimulation of eight vasa deferentia (pars epididymica) of five prostatic carcinoma patients generated emission from the severed proximal end of all vasa examined at orchidectomy. All of the stimulations of 13 middle vasa of seven patients with emission loss caused SEED. The above results indicate that direct electrical stimulation of the canine and human vas deferens causes SEED regardless of the site stimulated or the absence of HNs, which are the major pathway of the efferent signal for SEED.