

**Abstract Reproduction Form B-1**

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Title (type in CAPITAL LETTERS)	ELECTRICALLY STIMULATED DETRUSOR MYOPLASTY

**Aims of Study.** We studied electrical stimulation of a rectus abdominis muscle flap wrapped around the bladder to achieve detrusor contractility and bladder emptying.

**Methods.** The rectus abdominis muscle was surgically dissected with preservation of its insertion on the pubis bone and rotation of its midsection behind the bladder to effect a complete bladder wrap. The deep inferior epigastric artery and veins and the two lowermost intercostal nerves were preserved. This unilateral rectus abdominis muscle flap was then electrically stimulated with two pairs of bipolar electrodes inserted into the muscle near the entrance of the nerves. Stimulation frequencies of 40, 60 and 80 hertz were used in each of 8 dogs. The increase in bladder pressure over baseline, half time to muscle fatigue, and percent bladder evacuation were measured. Paired students T-tests were used for statistical comparisons.

**Results.** (Mean  $\pm$  SEM)

Stimulation frequency (Hz)	40	60	80
Increase bladder pressure (cmH <sub>2</sub> O)	35 $\pm$ 5	45 $\pm$ 6	45 $\pm$ 7
Half-time to muscle fatigue (sec)	47 $\pm$ 6	33 $\pm$ 4	19 $\pm$ 4
Bladder evacuation (%)	73 $\pm$ 8	78 $\pm$ 8	74 $\pm$ 6

Although half-time to muscle fatigue was different for the 3 stimulation frequencies ( $p < 0.05$ ), the increase in bladder pressure and % bladder evacuation were similar ( $p > 0.05$ ).

**Conclusions.** Electrically stimulated detrusor myoplasty results in uniform increases in bladder pressure and reasonable bladder evacuation in an animal model. We are currently studying a detrusor myoplasty in a chronic study to determine whether it can be used for enhanced bladder emptying in patients with poor detrusor contractility.