508

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ANIMAL MODEL OF PELVIC FLOOR DYSTONIA AND CYSTOMETRIC EFFECTS ON URINARY DYSFUNCTION

Hypothesis / aims of study

While the relationship between pelvic floor muscle dystonia and urinary dysfunction, along with pelvic pain, are described in clinical literature, the mechanism and pathways remain elusive. One of the barriers is the lack of an effective animal model of pelvic floor muscle dystonia, especially as it relates to micturition. We sought to develop an animal model of pelvic floor dystonia (levator stimulation) and evaluate the resultant change during cystometric (CMG) and electromyography (EMG) testing.

Study design, materials and methods

Eight adult female WNZ rabbits were evaluated with simultaneous CMG and EMG recordings. After three baseline micturition cycles, an EMG electrode was inserted into the pubococcygeus muscle. Three addition micturition cycles were recorded. The muscle was stimulated with electrical current approximating pelvic floor overactivity (4 trains at 15mA 0.1ms 50Hz, with 10 seconds between trains) and the resulting micturition cycles recorded.

Results and Interpretation of results

All eight rabbits demonstrated CMG and EMG changes after electrical stimulation. Six of the eight rabbits showed voiding dysfunction as measured by the volume of saline solution that triggered voiding, amplitude of contraction, elapsed time between voiding phases, and the post-void residual. Two rabbits demonstrated significantly longer intervals between micturition cycles and higher post-void residuals on CMG post-stimulation. The EMG recordings showed altered patterns of EMG motor unit potentials between and during detrusor contractions after stimulation.

Concluding message

Using electrical stimulation of rabbit pelvic floor muscles, we were able to describe both CMG and EMG changes in an animal model of pelvic floor overactive dysfunction. This model has potential for future pelvic floor applications.

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Is this a clinical trial?	**No**
What were the subjects in the study?	**ANIMAL**
Were guidelines for care and use of laboratory animals followed or ethical committee approval obtained?	**Yes**
Name of ethics committee	**Institutional Animal Care and Use Committee of the Stratton VA Medical Center, Albany, NY, USA.**