

Neural Prosthesis Seminar

“Submucosal Pressure Sensing of Internal Organs”

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Case Western Reserve University



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Abstract:

Unwanted leakage of urine after spinal cord injury can become deadly if it infects pressure sores and causes sepsis. Electrical stimulation is utilized to prevent incontinence and unwanted urine leakage. However, the stimulation must be on all the time to be effective, leading to excess power utilization and reduced sensitivity to stimulation. Previous work suggests that intermittent stimulation with closed loop feedback of bladder pressure not only reduces power usage, but also could improve the effectiveness of stimulation and increase filling volume. However, a sensor placed chronically in the bladder will become a nidus for stones. We have therefore developed a wireless, catheter-free, pressure monitor for submucosal bladder implantation which could be utilized to provide closed loop feedback for electrical stimulation to prevent incontinence. This talk will cover our work to date on device development and testing.

For more information, please contact Cathy Walker at (216) 707-6490.