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DOES REAL-TIME PELVIC SPHINCTERIAL ELECTROMYOGRAPHIC MONITORING DURING LAPAROSCOPIC RADICAL PROSTATECTOMY CONTRIBUTE TO POSTOPERATIVE CONTINENCE RECOVERY?

Hypothesis / aims of study
Our study was designed to evaluate whether real-time Nerve Integrity Monitoring System (NIM-Response® 1.0, Medtronic ENT Medtronic USA, Inc.) to monitor the pelvic sphincterial electromyographic during laparoscopic radical prostatectomy (LRP) contributes to postoperative continence recovery.

Study design, materials and methods
From June 2010 to May 2011, 60 consecutive prostate cancer patients with full continence (clinical stage T2a-T3a) who were candidates for LRP were prospectively enrolled. All patients had preoperative full continence and were randomly divided into one group of 30 cases who undergo real-time pelvic sphincterial electromyographic monitoring during LRP and another of 30 patients who did not undergo real-time monitoring during surgery. In the group undergoing real-time monitoring, two active probes were inserted in the anal sphincter and femoral internus respectively, the negative probe was inserted in the upper arm. NIM-Response® 1.0 electromyographic monitor system (Medtronic ENT Medtronic USA, Inc.) was used for assistant of dissection, explosion and protection of the periprostatic nerve during the surgical procedure. An interview at the outpatient clinic was used to evaluate the urinary continence status on the 3rd, 30th and 90th day after removal of the catheter. The following self reported criterion was applied: A) full continence. B) minimal stress incontinence, requiring 0-1 pad a day. C) urinary incontinence requiring more than 1 pad a day. Cystourethroscope and urodynamics examinations were performed in all patients on the 30th day after removal of the catheter.

Results
All of the LRP was successfully performed. There were no significant differences between these two groups in baseline variables, including age, prostate specific antigen, prostate volume, postoperative Gleason score, etc. ($P>0.05$, respectively) There were significant differences in full continence rate on the 3rd, 30th and 90th day after removal of the catheter (66% vs 38%, 85% vs 55%, 96% vs 91%; $P<0.01$, $P<0.01$, $P<0.05$, respectively) between these two groups. Urodynamics and cystourethroscope examinations demonstrated that urethral closure and urethral sphincter was present in both groups on the 30th day after removal of the catheter.

Interpretation of results
The widespread use of prostate-specific antigen testing has led to the detection of many younger patients with prostate cancer. Thus, the importance of adequate continence is increasingly emphasized. Based on anatomic findings of the nerve distribution around the prostate, our study confirmed that real-time Nerve Integrity Monitoring System (NIM-Response® 1.0, Medtronic ENT Medtronic USA, Inc.) to monitor the pelvic sphincterial electromyographic during LRP contributes to postoperative continence recovery.

Concluding message
Our preliminary data demonstrate that real-time pelvic sphincterial electromyographic monitoring during LRP improves postoperative urinary continence.

Disclosures
Funding: Program of 5010 of Sun-Yat Sen University (2007028 to X.G.), Key Project of Chinese Ministry of Health (to X.G.), National Natural Science Foundation of China (30772178 to X.G. and 81001139 to L.Y.L), the Science and Technology Foundation of the Guangdong Province (2010B031500024 to X.G.), and the Fundamental Research Funds for the Central Universities (11ykpy39 to L.Y.L and to X.G.).

Clinical Trial: No **Subjects:** HUMAN **Ethics Committee:** the Ethical Committee of the Third Affiliated Hospital, Sun Yat-sen University **Helsinki:** Yes **Informed Consent:** Yes