

Preservation of Penile Length After Radical Prostatectomy (RRP): Early Intervention With A Vacuum Erection Device (VED)

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Introduction and Objective: RRP has been shown to have a potential negative impact on penile health. In two studies of men undergoing RRP, stretched penile length (SPL), which most closely correlates with erect penile length, was decreased in the vast majority of men at 3 months after surgery. In one study, defining a decrease of ≥ 1 cm as significant, 48% of men were found to have such a change. The purpose of this study was to test whether early intervention after surgery with a VED could prevent the changes in penile health, as defined by SPL, found in prior studies.

Methods: To date, 42 men undergoing nerve-sparing RRP, who had erections adequate for sexual intercourse prior to surgery without the use of any medications / devices, have enrolled in our IRB approved study. SPL was measured pre-op, and at 3-months after catheter removal. A single investigator performed all measurements. Duplicate measurements were performed each time, and the average of the two used as the final length. A decrease in SPL of ≥ 1 cm was considered significant. Prior to surgery, men were provided a VED, and instructed in its daily use to begin the day after their urethral catheter was removed (10-14 days post-op). The VED was used to provide a total of 10 minutes of maximal engorgement of the penis per daily session. Compliance was defined as VED use $> 90\%$ of possible days.

Results: At present, 32 men have completed the 3-month study, with 8 still < 3 months post-op. Two men were dropped from the study, one due to early use of androgen ablation therapy for poor prognosis cancer, and one who did not have his prostate removed. Of the 28 compliant men, 27 (96.5%) had no significant change in SPL. One man had a SPL decrease of 1.3 cm (9.2% of total length). Of the 4 non-compliant men, 3 had a decrease in SPL of ≥ 1.0 cm, one of 1.2 cm (10%), one of 1.8 cm (15%) and one of 2.4 cm (17%).

Conclusion: Early intervention after RRP with a VED reduced the likelihood of penile shortening from 48% in historical controls to 3.5% in the present study. Therefore, early intervention with a VED should be recommended in all potent men undergoing nerve-sparing RRP to preserve penile length. Whether this preservation of penile length/health improves the likelihood of future return in overall sexual function is the subject of an ongoing study.