

PILOT STUDY OF CHANGES IN STRETCHED PENILE LENGTH 3 MONTHS AFTER RADICAL RETROPUBIC PROSTATECTOMY

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ABSTRACT

Objectives. To evaluate changes in stretched penile length after radical retropubic prostatectomy (RRP) in a prospective penile measurement study because an occasional complaint from patients after RRP is that their penis is shortened.

Methods. Thirty-one patients undergoing RRP by one surgeon were enrolled. The same physician completed measurements with a paper ruler to the nearest 0.5 cm. The stretched penile length was measured from the tip of the glans to the pubopenile skin junction. The measurements were taken in the preoperative holding area before the patient received anesthetic medication for the RRP and again 3 months postoperatively. The reliability and reproducibility of this measurement were confirmed.

Results. All 31 patients were measured at 3 months postoperatively. Of the 31 patients, 22 (71%) had a decrease in stretched penile length (range 0.5 to 4.0 cm). Seven were shortened 0.5 cm, 11 were shortened 1.0 to 2.0 cm, and 4 were shortened more than 2.0 cm. Five patients had no change, and in four the penile length was longer (range 0.5 to 1.0 cm).

Conclusions. The results of this pilot study appear to show that the stretched penile length decreases after RRP at 3 months of follow-up in most men; 48% (15 of 31) had considerable shortening greater than 1.0 cm. If confirmed by other investigators, the cause of this change needs to be elucidated. *UROLOGY* 58: 567-569, 2001. © 2001, Elsevier Science Inc.

Radical retropubic prostatectomy (RRP) is a common operation for localized prostate cancer. In addition to treatment outcome and cancer cure rates, studies evaluating quality-of-life parameters have taken on increasing importance. One complaint we receive from men after RRP is that their penis is shortened. The actual incidence of this complaint is not known, and the complaint has been for both the flaccid and the erect penile length. To our knowledge, no peer-reviewed prospective studies have evaluated this complaint. We conducted a prospective penile length measurement study to evaluate the validity of this complaint.

It has been shown that the stretched flaccid pe-

nile length is the measurement that most closely estimates the erect length.¹ We believe the erect length to be the most important component; therefore, we measured the preoperative and postoperative stretched penile length. Measuring the flaccid length and circumference may be important in terms of a patient's perception of their penile length, but it is markedly influenced by other factors such as room temperature, state of mind, and measurement subjectivity. The stretched penile length is not influenced by these variables.

MATERIAL AND METHODS

With human subject committee and institutional review board approval, 31 patients undergoing RRP by the same surgeon (B.L.D.) were enrolled. Preoperatively, all men had erections adequate for vaginal penetration according to physician questioning/counseling. The same physician (B.L.D.) completed all measurements with a paper ruler to the nearest 0.5 cm. The measurements were taken in the preoperative holding area in triplicate before the patient received anesthetic medication and again 3 months postoperatively. The stretched penile length was measured from the tip of the glans to the pubopenile skin junction while applying tension to maximally stretch the penis.

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post-RRP group for the purpose of preventing or reversing any penile morphotic changes induced by surgery.

Our study was designed simply as a pilot study to assess the basic changes in the stretched penile length, as it is the measurement that most closely relates to the erectile penile length. Optimally, the measurements could have been performed on multiple occasions preoperatively and at 3 months postoperatively or with even longer follow-up. Because our four control measurement patients did not evidence significant variations on multiple occasions and because of the technical difficulties for many patients traveling a long distance to our medical center, this was not part of our pilot study design.

We elected an endpoint of a 3-month measurement in this pilot study for two reasons. Most tissue healing is complete by 12 weeks, and additional reductions or changes due to tissue scarring should be minimal. Additionally, we desired an endpoint that was before the initiation of treatment for erectile dysfunction. In our series, most men desired treatment institution for erectile dysfunction at the 3-month postoperative visit. The treatment of erectile dysfunction using either a vacuum-assist device or intracorporeal injections may change the results of this study, which could serve as the basis for future studies on interventions to prevent or correct any identifiable loss.

Additionally, a blinded third-party individual, not the operating surgeon, could have performed all the measurements to prevent any measurement bias. In support of our decision to use the operating surgeon, a patient-physician relationship existed that allowed us access to what can be a very sensitive issue, measuring the penile length. A 3-month

interval between the preoperative and postoperative measurements avoided any ability by the measuring physician to recall the initial results, which were kept in a database accessed only by the urology resident who participated in the study. Additionally, future studies could control for the preoperative erectile function (through a validated instrument), patient age, height, and weight, nerve-sparing status, and result, as well as the size of the prostate removed. This demographic information may be important in identifying significant contributors to penile shortening.

CONCLUSIONS

In our pilot study, at 3 months of follow-up, a marked majority of men (71%) had a decrease in their stretched, flaccid penile length. Nearly one half, 48%, had a significant decrease in length of 1 cm or more. If our results are supported by other investigators, future studies could help to identify the factors contributing to these changes and any potential benefit or prevention with early return of erectile function with successful nerve-sparing surgery or early intervention with intracorporeal injections or vacuum-assist devices.

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