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Murphy M[1], Culligan P[1]
1. University of Louisville

STANDARDIZATION OF TVT TENSION VIA A DISPOSABLE PRESSURE SENSOR

Hypothesis / aims of study

To measure the pressure between the sling and the urethra when TVT tension is set via the cough stress test and evaluate the efficacy of a disposable pressure sensing device (Accuset®, Pelvicare Inc., Laguna Niguel, CA).

Study design, materials and methods

A consecutive series of twenty patients scheduled to undergo TVT under intravenous sedation and local analgesia were consented between July 2002 and January 2003. Standard pre-operative historical and physical findings including urodynamic parameters were recorded on data sheets. A solution of 0.5% marcaine and 1% lidocaine was used to anesthetize the suprapubic and vaginal operative fields. The cough stress test was performed as the tension of the TVT was adjusted to the precise point where it prevented stress incontinence. The surgeons then placed the Accuset® device between the TVT mesh and the urethra. A scrub nurse recorded the numeric pressure readout from a monitor that the surgeons could not see, after which the Accuset® device was removed and discarded A research nurse collected these data along with pre-operative urodynamic parameters and post-operative measures of voiding function and continence during routine follow-up visits at 2 and 6 weeks after the surgeries.

Results

The following demographic and *pre*-operative data are listed with standard deviations in parenthesis: mean age 54.2 (11.8) years, BMI 27.2 (6.4), parity 2.8 (0.9), maximum urethral closure pressure 47.1 (30.3) cm H_2O, and post-void residual (PVR) 23.3 (27.5) ml. All twenty subjects were diagnosed with genuine stress incontinence on multi-channel urodynamic testing prior to their surgery, 2 (10%) had intrinsic sphincter deficiency, 8 (40%) had detrusor instability, and 9 (45%) had undergone a previous surgery for incontinence. The mean intra-operative reading on the Accuset® device was 24.0 (14.4) cm H_2O. The mean post-operative PVR was 34.0 (26.6) ml. The mean number of days until each patient was able to void to completion (PVR <50ml) was 1.8 (range 0-11). Nineteen subjects (95%) reported short-term cure of stress incontinence. No adverse events occurred during the study period.

Interpretation of results

The Accuset® device effectively measured the pressure between the mesh and urethra after TVT tension was set via the cough stress test in a group of 20 patients.

Concluding message

The pressure range recorded in this pilot study could be used to construct a larger trial designed to determine the utility of this device relative to the cough stress test.