Does urodynamic testing before surgery for stress incontinence improve outcomes?

Not for straightforward stress urinary incontinence. This multicenter, randomized, noninferiority trial from the Urinary Incontinence Treatment Network found no significant differences in 1-year outcomes between women who underwent urodynamic testing versus those who did not.

Nager CW, Brubaker L, Litman HJ, et al; Urinary Incontinence Treatment Network. A randomized trial of urodynamic testing before stress-incontinence surgery. N Engl J Med. 2012;366:1287–1297.

EXPERT COMMENTARY
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Nager and colleagues conducted their trial to determine whether urodynamic testing is necessary before midurethral sling surgery for simple, "garden-variety" stress urinary incontinence (SUI). In their trial, 630 women were randomly assigned to undergo office evaluation with urodynamic tests (n = 315) or office evaluation only (n = 315). Surgical treatment was successful in 76.9% of women in the urodynamic-testing group and in 77.2% of women in the office evaluation-only group (95% confidence interval [CI], –7.5 to 6.9) as long as 1 year after surgery. There were no significant differences between groups in quality of life, patient satisfaction, and other secondary measures of incontinence severity. Investigators concluded that preoperative office evaluation (positive stress test, urethral hypermobility, normal postvoid residual, and negative urinalysis) is not inferior to urodynamic testing.

Should these findings come as a surprise to pelvic surgeons? Retropubic and transobturator slings are associated with very low morbidity and high efficacy. Studies already have demonstrated that, in simple SUI, these slings produce similar outcomes.[1] So there is some consensus that urodynamic testing may be unnecessary prior to placement of a midurethral sling for simple SUI. This study lends credence to that notion.

Outcome measures: Focused enough?

The primary outcome measures used in this trial were not designed primarily to assess the

WHAT THIS EVIDENCE MEANS FOR PRACTICE

Don't throw away your urodynamic equipment just yet. Many patients have complex incontinence symptoms or other indications for urodynamic testing (**TABLE**, page 20). In addition, a clear understanding of urgency symptoms and voiding dysfunction can be very useful during preoperative counseling of patients who are scheduled to undergo sling surgery. Significant urgency is likely to persist postoperatively, and voiding difficulties may worsen after a sling procedure, especially if a retropubic sling is used.

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FAST TRACK

Urodynamic assessment remains useful in the management of patients who have complex incontinence symptoms

›› See Dr. Karen Noblett's and Dr. Stephanie Jacobs' commentary on Nager et al's study of urodynamic testing on page 23

Indications for multichannel urodynamic testing

- Previous surgery for incontinence
- Suspected intrinsic sphincteric deficiency (positive empty supine stress test)
- Recent pelvic surgery
- History of pelvic radiotherapy
- Abnormal voiding (elevated postvoid residual)
- Exteriorized vaginal prolapse
- Significant symptoms of urinary urgency
- Neurologic disease
- Diabetes or other conditions that may affect bladder function

severity of SUI. Investigators employed the Urogenital Distress Inventory, which focuses mostly on irritative bladder symptoms and includes only one question about the presence and impact of SUI. They also utilized the Patient Global Impression of Improvement, a global scale related to incontinence in general. Other tests—such as standardized stress tests, pad tests, and bladder diaries—are more specific in the evaluation of SUI severity. Nager and colleagues used these measures themselves in an earlier exploration of the role of urodynamics in predicting sling failure.[2]

Moreover, in the current study, urodynamic testing did not include a measurement of urethral closure pressure, which has been strongly correlated with success after Burch colposuspension and retropubic and transobturator sling procedures. This test would have added valuable data.

Another shortcoming was the lack of uniformity in the sling procedures that were selected. Most experts believe that retropubic and transobturator slings have unique mechanistic characteristics that do not allow them to be interchangeable. Investigators should have selected a single sling approach.

Is a 77% success rate acceptable to most patients?

SUI represents a continuum of disease severity, and various studies have demonstrated a higher success rate for retropubic slings than for the transobturator approach when sphincteric function is impaired. At our center, we utilize urodynamic parameters to identify women who may achieve a higher continence rate with a retropubic sling.[3]

Retropubic slings are not appropriate for all patients with SUI. Although the risk of serious complications, such as retropubic hematoma or bowel perforation, is very low, complications sometimes do occur and are related to surgical volumes. For this reason, transobturator slings, which carry minimal associated risks, play a key role in the management of garden-variety SUI.

FAST TRACK

Urethral closure pressure has been strongly correlated with success after Burch colposuspension and retropubic and transobturator sling procedures

References

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3. Guerette NL, Bena JF, Davila GW. Transobturator slings for stress incontinence: using urodynamic parameters to predict outcomes. Int Urogynecol J. 2008;19(1):97–102.