Male Sling and Artificial Urethral Sphincter for Male Stress Urinary Incontinence Among Certifying American Urologists

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OBJECTIVE To examine case volume characteristics among certifying urologists performing male sling and artificial urinary sphincter (AUS) procedures to evaluate practice patterns in male stress urinary incontinence (SUI).

MATERIALS AND METHODS Six-month case log data of certifying urologists (2003-2013) were obtained from the American Board of Urology. Cases specifying Current Procedural Terminology code for male sling, AUS, and removal or revision of either procedure in males ≥18 years were analyzed.

RESULTS Among 1615 urologists (568 certifying and 1047 recertifying) logging at least 1 male incontinence procedure, 2109 (48% of all procedures) male sling and 2284 (52%) AUS cases were identified. The mean age of patients undergoing AUS was 74.9 years and the mean age of patients undergoing sling procedures was 67.3 years (P <.001). An increase in male incontinence procedures from 2003 to 2013 was demonstrated. The rate of male sling procedure increased from 32.7% of incontinence surgeries in 2004 to 45.5% in 2013 (P <.001). Academically affiliated urologists are 1.5 times more likely to perform AUS than male sling for SUI (P <.001). Median number of slings performed was 2 (range 1-40), with 32.7% placing slings exclusively. A small group of certifying urologists (3.4%) accounted for 22% of all male slings placed. This same cohort logged 10.2% of all AUS performed. Surgical management of male SUI varies widely across states (P <.001), with slings performed between 21% and 70% of the time.

CONCLUSION Overall the number of male incontinence procedures has increased over time, with a growing proportion of male slings. Most slings and AUS cases are performed by a small number of high-volume surgeons. UROLOGY 87: 95–99, 2016. © 2015 Elsevier Inc.

Male stress urinary incontinence (SUI) is an increasingly common problem encountered by urologists, mostly after radical prostatectomy (RP), with a significant impact on quality of life.[1] The reported incidence of postprostatectomy incontinence is widely variable, ranging from 10% to 49%, depending on the definition and assessment of incontinence.[2,3] Although many men may be managed successfully with conservative measures, including pelvic floor exercises, behavioral therapy, and pharmacotherapy, an estimated 6%-12% of men will eventually seek surgical treatment for SUI.[2,4]

Surgical options for male SUI include artificial urinary sphincter (AUS) and male sling. AUS is an established and efficacious surgical treatment for male SUI, with long-term success rates reported between 73% and 90%.[5,6] Male sling is a minimally invasive alternative to AUS, with reported cure rates ranging from 35% to 87%, with variability based on baseline severity of incontinence and type of sling used.[7,8]

AUS use has increased in the United States over the last 3 decades, although wide variability in case volume has been demonstrated regionally.[9,10] AUS remains the most common definitive surgical treatment selected for male SUI, but an increasing volume and proportion of male SUI is now managed with male sling.[4,11] We report the practice patterns of certifying urologists in the United States in the

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treatment of male SUI as a function of time, surgeon experience, practice type, and state. We hypothesize that the proportion of male SUI treated with male sling is increasing relative to AUS implantation over time, possibly related to increasing exposure and familiarity to male sling as well as patient preference for minimally invasive approaches.

MATERIALS AND METHODS

The American Board of Urology (ABU) serves as a surgical specialty board for monitoring and improving standards, education, and competency in the field of urology. Urologists may apply to be granted certification by the ABU after completing basic training and demonstrating an appropriate fund of knowledge and expertise in the management of urological conditions. For urologists certified after 1985, recertification is necessary at 10-year intervals. Candidates applying for initial certification (following postgraduate training), and subsequent first (10 years after initial certification) and second recertification cycles (20 years after initial certification) complete a surgical case log reflecting a consecutive 6-month period. These logs specify both limited patient demographics (age, gender) and surgeon characteristics (age, certification cycle, practice type, and state of practice). Surgeons also self-report subspecialization in 1 of 5 realms (oncology, endourology, pediatrics, andrology, and female urology) or identify themselves as general urologists.

Surgical procedures are logged by Current Procedural Terminology code number. The codes 53440 and 53442 were used to identify male urethral sling procedures. The codes 53444-53449 were used to identify AUS procedures. Cases in which the Current Procedural Terminology code was associated with female patient gender, pediatric subspecialization, or patient age <18 years were excluded to limit included cases to adult male urinary incontinence patients. Case logs are received from the ABU and report a 6-month representation of individual surgeon practice volume. We analyzed case logs from 2003 to 2013 for trends in male SUI management associated with certification cycle, submission year, state, practice type (academic affiliation vs private practice), and male SUI case volume using chi-square test and Student t-test. For all statistical analyses, $P < .05$ was considered statistically significant. Analysis was performed using SPSS Statistics 21.0.

RESULTS

A total of 1615 urologists (568 certifying and 1047 recertifying) logged at least 1 male incontinence procedure, performing 2109 (48% of all procedures) male slings and 2284 (52%) AUS placements. Over the study period, 131 male sling revisions and 734 AUS revisions or removals were logged. Male sling patients, with a mean age of 67.3 years, tended to be younger than AUS patients, who had a mean age of 74.9 years ($P < .001$). The increase in overall number of incontinence procedures from 2003 to 2013 was greater than the growth in number of urologists applying for certification, with an increase in certifying urologists from 613 to 838 applicants.

Over time, a general trend with overall increasing likelihood of treating male SUI with male sling was demonstrated (Fig. 1). The rate of male sling use in incontinence surgeries increased from 28.6% in 2003 to 45.5% in 2013 ($P < .001$) with a peak in 2011, when placement of a sling was 1.6 times more frequently performed than AUS (sling 62.2%, AUS 37.8%) (Table 1). A decrease in male sling use is demonstrated in 2012 and 2013. Overall throughout the study period, AUS remained the more commonly performed surgical management for male SUI (52% vs 48%, respectively), with the exception of years 2008 through 2011, where male sling was more commonly utilized (Table 1). Sling and AUS revisions remained relatively stable at a mean of 2.5% and 14% of cases, respectively. While the overall proportion of revisions logged remained consistent over time, AUS revisions were logged 5.6 times more often than sling revisions (14.0% vs 2.5% of male SUI cases logged) (Table 1).

Urologists who identified themselves as practicing with an academic affiliation logged a total of 440 (39.7% of male SUI cases) male slings and 667 (60.3%) AUS cases during the study period, in comparison with nonacademically affiliated urologists, who logged 1505 (51.9% of male SUI cases) male slings and 1392 (48.0%) AUS cases. Academically affiliated urologists were 1.5 times more likely to manage male SUI using AUS than male sling for SUI, whereas the proportion of procedures were almost equal

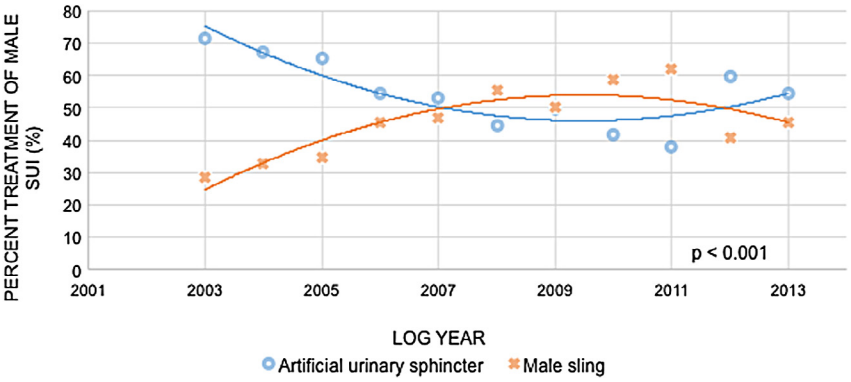

Figure 1. Trends in treatment of male stress urinary incontinence with male sling and artificial urinary sphincter (2003-2013).