

Risk of Prolapse Recurrence after Native Tissue Anterior Vaginal Suspension Procedure with Intermediate to Long-Term Followup

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Abbreviations and Acronyms

AVWS = anterior vaginal wall suspension
BMI = body mass index
FI = fecal incontinence
POP = pelvic organ prolapse
POP-Q = POP quantification system
QOL = quality of life
SCP = sacrocolpopexy
SUI = stress urinary incontinence
UAR = urethral axis at rest
UAS = urethral axis with straining
UDI-6 = Urogenital Distress Inventory-short form
VAS = visual analog scale
VCUG = voiding cystourethrogram

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Purpose: We report our experience with recurrence of pelvic organ prolapse after native tissue repair for stage 2 anterior prolapse.

Materials and Methods: We reviewed a prospectively maintained, institutional review board approved database of women with symptomatic stage 2 anterior prolapse who underwent vaginal repair with anterior vaginal wall suspension between 1996 and 2014. Women with concurrent pelvic organ prolapse repair or hysterectomy or without 1 year followup were excluded from analysis. Failure was defined as stage 2 or greater prolapse recurrence on examination or reoperation for symptomatic pelvic organ prolapse. Outcome measures included validated questionnaires (Urogenital Distress Inventory-short form, quality of life), physical examination, standing voiding cystourethrogram at 6 months postoperatively, further surgery for pelvic organ prolapse in other compartments or for secondary stress urinary incontinence or fecal incontinence, and complications.

Results: A total of 121 women met the study inclusion criteria with a mean followup of 5.8 ± 3.7 years. Prolapse recurrence rates were isolated anterior 7.4%, isolated apical 10.7%, isolated posterior 8.3% and multiple compartments 19%. Surgery for recurrent prolapse included anterior compartment 3.3% at 1.4 ± 1.0 years, apical 9.9% at 2.8 ± 3.0 years, posterior compartment 5.8% at 2.0 ± 1.0 years and multiple compartments 17.4% at 3.2 ± 3.3 years. There was a 1.6% rate of intraoperative complications and a 5.7% rate of 30-day complications (all Clavien I).

Conclusions: Anterior vaginal wall suspension for symptomatic stage 2 anterior prolapse offers a native tissue vaginal repair with minimal morbidity and a low anterior recurrence rate at intermediate to long-term followup. However, 33% of patients required secondary prolapse compartment procedures from 0.6 to 13 years later, highlighting the importance of long-term followup.

Key Words: pelvic organ prolapse, recurrence, reconstructive surgical procedures

SINCE the most recent 2011 Food and Drug Administration warning on the use of synthetic vaginal mesh for pelvic organ prolapse and in the current context of POP mesh complications and the litigation era, many

surgeons and patients have refocused their attention to native tissue POP repair. Despite cystocele repair being the most common POP surgery performed,¹ the current literature is limited by short followup periods,

inconsistencies in concurrent prolapse repair procedures and lack of standardization of reporting outcomes, even in randomized controlled trials. Anatomical failure rates of native cystocele repair have been reported as high as 40% to 70%.²⁻⁴ When the commonly cited study by Weber et al was reanalyzed with updated failure criteria (no prolapse beyond the hymen, symptomatic prolapse or surgery for recurrence),² failure rates for standard anterior colporrhaphy decreased from 70% to 11%. However, these data included a mixture of women with stages 1 to 4 anterior compartment prolapse undergoing anterior colporrhaphy alone or anterior colporrhaphy with concurrent apical and posterior repairs, and with incomplete 1-year followup.

Furthermore, the 2013 Cochrane review of the surgical management of POP highlighted the lack of consensus in defining an optimal treatment for POP.⁵ Specifically relating to anterior compartment prolapse, there have been few recent studies to address native tissue repair with sufficient intermediate to long-term outcomes to determine the durability of such repairs. The majority of recent trials evaluated mesh and biological graft techniques. Mesh grafts demonstrated an 11.4% rate of mesh erosion and a 6.8% rate of surgical reoperation. The use of biological graft reinforced repairs led to improved anatomical outcomes but the symptomatic impact was not significant. Additionally, Ou et al evaluated loss to followup rates in prospective and randomized controlled trials of POP surgery, and summarized the deficiency in reporting long-term followup in a field with such a propensity for recurrence.⁶

The primary objective of this study was to report on anterior compartment prolapse recurrence in women who underwent native tissue repair for symptomatic stage 2 cystocele without concurrent POP repair and to provide intermediate to long-term followup. As recommended by the 2012 IUGA/ICS (International Urogynecological Association/International Continence Society) joint report for POP surgical procedures outcome reporting⁷, the secondary objective of this study was to report other compartment POP recurrence, postoperative complications, and subsequent surgery for SUI and FI.

METHODS

We reviewed an institutional review board approved prolapse database of consecutive women with symptomatic (including vaginal bulge with or without urinary symptoms) POP-Q stage 2 cystocele who underwent native tissue vaginal repair using an anterior vaginal wall suspension procedure by the senior author between 1996 and 2014. The database was prospectively maintained since 2004 but data before 2004 were collected retrospectively. Exclusion criteria were less than 1 year followup

and women undergoing concurrent hysterectomy or POP repairs (ie apical suspension, posterior repair) at cystocele repair. Data collected by a third party reviewer not involved in the care of these women (RSL) included patient demographics, history of POP or incontinence repairs, intraoperative complications, time to prolapse recurrence, type of POP reoperation and type of subsequent SUI or FI procedures. Women with less than 1 year followup were contacted using a structured telephone interview to determine if they had POP symptoms (bulge or pressure) and if they underwent subsequent POP surgical repair after AVWS.

The primary outcome was failure or prolapse recurrence in the anterior compartment, defined by POP-Q stage 2 or greater anterior compartment POP on followup examination or surgery for recurrent anterior compartment symptoms. Secondary outcomes included examination findings of stage 2 or greater POP in other compartments or multiple compartments, or corrective surgery for symptomatic recurrent POP, postoperative VCUg results, intraoperative and short-term (30-day) complications, and surgery for secondary SUI or FI as self-reported symptoms. Short-term complications were grouped according to the Clavien-Dindo classification of surgical complications.⁸ All data were reported to the last patient visit in the database. For those who underwent a reoperation, the data reported corresponded to the findings at the last visit before the reoperation.

Patients underwent a followup standing VCUg between 6 and 12 months postoperatively to objectively evaluate urethral position and bladder support on lateral views. Followup visits on an average of every year afterward included physical examination (using Baden-Walker grading until the POP-Q was adopted in 1999) (table 1). Several validated questionnaires were also used, including the UDI-6⁹ and global VAS question on QOL, scored from 0 (pleased) to 10 (terrible).¹⁰

Baseline and followup examinations were performed by a variety of clinicians including faculty, FPMRS (Female Pelvic Medicine and Reconstructive Surgery) fellows and FPMRS trained physician assistants. The conversion from Baden-Walker to POP-Q for the Aa/Ba points was grade 0 = Aa/Ba -3, grade 1 = Aa/Ba -2, grade 2 = Aa/Ba -1 or 0.

For the VCUg results the lower edge of the pubic symphysis was used as a reference point to compare lateral views of UAR and UAS at a fixed bladder volume of 125 cc and to measure the lateral height of the cystocele.¹¹ Grade 0 corresponded to a lateral height of 0, with grade 1—0 to 2 cm, grade 2—greater than 2 to 5 cm and grade 3—greater than 5 cm.^{12,13}

As previously described the AVWS procedure^{14,15} is a modification of the 4-corner suspension technique originally described by Raz et al (see supplementary Appendix, <http://jurology.com/>).¹⁶

Statistical analysis was performed using SAS® 9.4. Continuous measures were presented with mean, standard deviations and ranges. Frequencies and percentages were used for categorical measures. The Pearson chi-square and Fisher exact tests were used for comparison of categorical variables. Unpaired t-tests were used for comparison of continuous variables. Postoperative results

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