

Pelvic Physical Therapy Distance Journal Club

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Assessment of overactive bladder symptoms among women with successful pessary placement. Zacharakis D, Grigoriadis T, Pitsouni E, et al. *Int Urogynecol J* 2018; 29:571-577. [Doi.org/10.1007/s00192-017-3461-x](https://doi.org/10.1007/s00192-017-3461-x).

Introduction: Pessaries are an important tool in helping to reduce both prolapse symptoms and urinary symptoms. They can be used on an as needed basis for certain functional or exercise activities or on a more permanent basis- 24 hour/7 days/week. We are familiar with vaginal pessaries being used to control prolapse symptoms and as an alternative to surgery. The improvement of urinary symptoms with pessaries is often mentioned in studies, but this study looks specifically at the impact of pessaries on OAB symptoms.

Prevalence Overactive bladder (OAB) is ~ 16% and symptoms include urgency, with or without UUI, accompanied by frequency and nocturia in the absence of UTI or other obvious pathology AND all these symptoms were addressed in this study.

Prevalence of POP is commonly cited as being found in 50% of parous women and this is what is stated in this paper. Also, in my literature search I found a very interesting systematic review (2020) by, Mou et al.¹ who found that the prevalence of POP varies depending on the target population being looked at, geographic characteristics or the definition of POP being used. These authors found a wide range of POP-Stage II prevalence rates from 1.1% to 14.6% across 4 racial/ethnic groups.

Relationship between OAB and POP

- Up to 74% of women with POP report coexistent symptoms of at least one other PFD (SUI-37% to 54%, and 30% reporting both SUI and UUI or OAB symptoms.²
- Prevalence of OAB is greater in women with POP than without POP.
- Both POP surgical repair and ring pessaries have both been shown to have a positive effect on the resolution of OAB, detrusor overactivity and voiding dysfunction.
- Both POP surgery and pessaries have been found to reveal de novo SUI.
 - Pessary use for those considering surgery could be helpful in predicting occult UI
- Some studies recognize POP as an etiology of OAB, although the pathophysiological mechanisms are controversial. Mechanisms thought to contribute include:
 - Urethral kinking from bladder outlet obstruction (BOO) which triggers histological changes in the bladder wall that result in myogenic detrusor overactivity
 - Bladder neck/proximal urethra opens, bladder trigone is stretched, and urine stimulates urethral afferents, triggering uninhibited detrusor contraction through the urethrovesical reflex.
 - Premature activation of stretch receptors due to bladder wall distension
 - Urethral incompetence

As PT's in this country, we cannot prescribe or provide pessaries to our clients, but we advise, help insert/remove as well as provide education for their use, thus the purpose for presenting this article.

Primary aim: Assess changes in OAB symptoms after women were successfully fitted for a pessary.

Secondary aim: Identify factors (if any) that were related to improvement or continuation of OAB symptoms.

Study Design/Study Format: Prospective cohort study

Subjects: All patients referred to a urogynecology office for a year (9/2015 to 9/2016) with symptomatic prolapse and co-existing OAB symptoms

- **Inclusion criteria:** Women with anterior wall or apical POP greater than stage II, OAB symptoms and a successful pessary fitting.

- **Exclusion criteria:** hx of previous POP or anti-incontinence surgery, active UTI's, current use of anti-cholinergic meds, or other OAB treatment.
- Objectively screened with POP-Q exam and 3-day micturition/incontinence
- Subjectively screened for OAB using the validated ICIQ-FLUTS questionnaire

Methods:

- Women in the study were all offered either a ring or Gellhorn pessary. The ring pessary with support was fitted first. The largest and most comfortable one was used. If it was expelled with repeated straining on exam table, on toilet, or with walking, a Gellhorn was inserted. Again, if this was expelled with the previous maneuvers or there was discomfort, these women were excluded from the study. Most women were fitted successfully with a ring pessary (92%). After 6 weeks of pessary use, women completed the ICIQ-FLUTS questionnaire and a 3-day bladder diary for a second time. Comparisons were made between the before and after 6 weeks of pessary use.
 - **Objective** endpoints evaluated looking at the bladder diary included
 - Change in mean number of micturitions/24 hr
 - Change in mean volume voided (ml) per micturition/hr
 - Change in number of UI episodes (no delineation of whether it is SUI or UUI)
 - **Subjective** endpoints on the ICIQ ...UUI scores were specifically evaluated as well as Score changes of urgency, frequency, strain to start, intermittency, & SUI

Statistical Analysis: McNemars test was used for comparison of proportions. Student t-test for comparing means before and after pessary placement with normal distribution. Wilcoxon for comparing medians if distribution was not normal. Analysis of variance was used when comparing more than 2 groups. Responsiveness was also assessed using Effect size.

Results:

- 155 women were initially examined, and due to above exclusion criteria, 74 remained (due to an incomplete 3-day diary, or they could not be successfully fitted with a pessary-20 women could not be fitted!).
- **Table 1:** Shows us mean age was 67.5 ± 9 , prolapse stage was predominantly stage III, all but 2 women had vaginal births.
- **Table 2:** Shows the bladder diary findings at baseline and again at 6 weeks
 - Significant decrease in mean number of micturitions/24 hr, significant increase in volume per void in that 24-hour period and total urine volume was unchanged
 - Significant increase in number of UI episodes (no delineation between UUI & SUI).
- **Table 3 and ICIQ results:**
 - Significant reduction in median values of UUI as well as urgency, bladder pain, frequency, strain to start, and intermittency
- **Table 4:**
 - Women that reported SUI at baseline continued to have SUI at 6 weeks
 - Development of occult SUI in 5 of the 30 women that reported 0 incontinence initially
- BMI was not associated with mean number of micturitions or with mean volume per micturition
- Nocturia-no changes observed but likely due to the unlikely impact of the pessary in the supine position

Discussion: Chiefly, this study reports a significant improvement in the OAB symptoms after successful pessary fitting using both subjective and objective evaluations.

Particularly... frequency, UUI and improvement of voiding function

- # of micturitions/24 h decreased by more than $\frac{1}{4}$
- Decreased 'straining to start' and intermittency

- The increase in the volume voided (by 1/3rd) per micturition/24 h corresponds with women following POP repair that have an improvement in their OAB symptoms
- Women in this study reported similar improvements regardless of stage of POP, but the authors state this may be due to the small number of women with a less severe stage of POP. A larger number or more equal number would help to confirm findings regarding differences between stages of POP.
 - Although This was in line with other studies except for one by Miranne et al.³ who found women with more severe POP were at higher risk of persistent urinary symptoms following surgical repair because of possible permanent denervation of the bladder wall
- The continued symptoms of SUI for all the women that reported it at baseline makes it clear that pessaries were not helpful for SUI in this study.
- The 16.7% that reported occult SUI is thought to be due to a mechanical kink/BOO being reduced, making pessaries a useful assessment tool for helping to determine the possibility of occult SUI following POP surgery. A high proportion of women with de novo SUI following pessary placement choose to undergo POP repair with anti-incontinence surgery.⁴
- There are still questions about how prolapse affects urinary symptoms and who pessaries are most helpful for as well as why do we see these improvements and how long will the improvements last?
- **Strengths**
 - Use of both subjective and objective data with validated questionnaires for subjective data, and bladder diary & POP-Q for objective data. Other studies that demonstrated improvements with pessaries did not use validated questionnaires or look exclusively at OAB.
 - Exclusive use of pessary as intervention
 - Useful evidence for counseling women with POP and with predominant OAB symptoms.
 - Used singly or in combination with other therapies
- **Weaknesses**
 - Lack of control group, no blinding, short F/U of 6 weeks
 - Small #n with less severe stage of prolapse as stated above
 - Only anterior wall and apical POP were included.

Clinical Application & Questions:

Do you recommend pessaries for POP with co-existing OAB?

How do your clients respond to your recommendation to the use of pessaries?

Have you seen improvements with OAB in your clients using a pessary?

Do you discuss pessaries & surgical implications and issue of occult UI?

Do you help fit, insert & remove pessaries?

Do you discuss that a combination of therapies may be needed to address POP with co-existing OAB, given the different mechanisms and phenotypes of OAB?

If clients understood that worsening prolapse may lead to more problems including OAB and potential denervation, would they be more motivated to address the issue with PFMT, use of pessary, or surgery?

¹ Mou T, Warner K, Brown O, et al. Prevalence of pelvic organ prolapse among US racial populations: A systematic review and meta-analysis of population-based screening studies. *Neurourol Urodyn.* 2021;40(5):1098-1106.

² Wong, Jennifer, Ramm, Olga. Urinary Incontinence and Pelvic Organ Prolapse. *Clin Obstet Gynecol.* 2021;64(2):314-320.

³ Miranne, J. M., Lopes, V., Carberry, C. L. & Sung, V. W. The effect of pelvic organ prolapse severity on improvement in overactive bladder symptoms after pelvic reconstructive surgery. *Int. Urogynecol. J.* 24, 1303–1308 (2013).

⁴ Chan SS, Cheung RY, Yiu AK, Lee LL, Pang AW, Chung TK. Symptoms, quality of life and factors affecting women's treatment decision on pelvic organ prolapse. *Int Urogynecol J* 2012;23:1027–33.