

Self-management versus nurse-led care of vaginal pessary in patients with pelvic organ prolapse

Joan Yuk Sheung FAN, RN, RM, BSN, MSc (WHS)

Sze Man WONG, RN, RM, BSN, MSc (Midwifery)

Joyce KING, RN, RM, BSc (Hons) in Health Care Studies (Nursing), Master of Nursing (Clinical Leadership)

Hiu Yi FUNG, RN, Master of Nursing

Ka Wing LAU, MBChB, MRCOG, FHKAM (O&G)

Willy Cecilia CHEON, MBChB, MRCOG, FHKAM (O&G)

Department of Obstetrics and Gynaecology, Queen Elizabeth Hospital, Hong Kong SAR, China

Objectives: To compare the outcomes and complications of self-management and nurse-led care in patients with pelvic organ prolapse (POP).

Methods: This retrospective study reviewed medical records of patients aged >18 years with a diagnosis of POP who used a ring vaginal pessary and attended at least two follow-up visits, with an interval of >3 months, at the outpatient urogynaecology POP nurse clinic of Queen Elizabeth Hospital, Hong Kong, between 1 January 2021 and 31 December 2023. Patients were assessed at each follow-up visit. Satisfaction with vaginal pessary use was assessed using a visual analogue scale ranging from 0 to 100. Quality of life was assessed using the Pelvic Floor Distress Inventory-20.

Results: In total, 812 patients were included in the analysis. Of these, 343 were able to perform regular vaginal pessary self-management and 469 required nurse-led care. The two groups were comparable in terms of POP stage. Patients who performed self-management were younger at initiation of vaginal pessary (64.1 vs 70.0 years, $p<0.001$) and had fewer follow-up visits during the 3-year study period (3.83 vs 5.48, $p<0.001$). The proportion of patients with vaginal discharge was higher in the self-management group (43.4% vs 37.1%, $p=0.068$), but the proportion of patients with vaginal ulcers with deep tissue penetration and scarring or vaginal erosion on examination was lower in the self-management group (6.4% vs 11.9%, $p=0.008$). Self-management and nurse-led care groups had comparable vaginal pessary satisfaction scores (74.05 vs 74.31, $p=0.87$) and showed significant improvements in QOL scores between first and last follow-up visits.

Conclusion: Vaginal pessary self-management can reduce healthcare service utilisation. Caregiver involvement in self-management may enhance adherence. Patients who performed self-management had a lower rate of vaginal ulcers on examination, which may increase the longevity of pessary use.

Keywords: Nurse practitioners; Pelvic organ prolapse; Pessaries; Self care

Introduction

Pelvic organ prolapse (POP) is the descent of the anterior vaginal wall, posterior vaginal wall, uterus (cervix), and/or vaginal apex (vaginal vault or cuff scar after hysterectomy)¹. The reported prevalence of POP was as high as 65%². Follow-up for women with POP places a heavy burden on both patients and the healthcare system. As life expectancy increases, the number of women affected by POP is likely to rise. Optimisation of POP management is crucial to enhance patient quality of life (QOL) and alleviate the healthcare burden.

The severity of POP is measured according to the Pelvic Organ Prolapse Quantification system developed by the International Continence Society³. A vaginal pessary is a supportive device inserted into the vagina to hold the pelvic organs in place and relieve symptoms. Overall, 98%

of American urogynaecologists offer vaginal pessaries as first-line therapy for POP⁴. They are effective in alleviating prolapse symptoms and improving QOL⁵⁻⁸. Nonetheless, adverse events such as abnormal vaginal discharge, vaginal erosion, and vaginal bleeding are common and may affect the longevity of pessary use^{9,10}. Rare complications, including incarcerated vaginal pessary, vesicovaginal fistula, and rectovaginal fistula, have also been reported¹¹⁻¹³.

Conventionally, vaginal pessaries require care by healthcare professionals. Self-management refers to regular removal (at night), cleansing, and reinsertion (in the morning) of the vaginal pessary by patients to maintain

Correspondence to: Ms Joan Yuk Sheung FAN

Email: joanysfan@gmail.com

good hygiene and provide a resting period for the vaginal tissue. Regular vaginal pessary self-management greatly reduces the complication rate¹⁴ and empowers patients with greater autonomy and convenience in sexual activities¹⁵.

At Queen Elizabeth Hospital, Hong Kong, patients newly diagnosed with POP are taught vaginal pessary self-management at the outpatient urogynaecology POP nurse clinic using a pelvic model and a supplementary educational leaflet. Patients are required to demonstrate competency in (1) performing hand hygiene before the procedure, (2) removing the vaginal pessary by inserting a finger into the vagina and gently hooking and pulling out the pessary, (3) cleaning the vaginal pessary with soapy water and storing it properly before reinsertion, (4) allowing the vaginal tissue to rest overnight, and (5) reinserting the vaginal pessary by folding it in half, applying lubricant, and inserting it into the vagina. Patients who are able to perform self-management are encouraged to do so daily whenever possible, or at least weekly; their follow-up intervals are gradually extended from 6 months to 2 years. Those who are unable or unwilling to perform self-management receive nurse-led care every 3 to 6 months. Since 2019, caregivers (eg, relatives or maids) have been invited to learn and assist with vaginal pessary self-management. This study aimed to compare the outcomes and complications of self-management and nurse-led care in patients with POP.

Methods

This retrospective study reviewed medical records of patients aged >18 years with a diagnosis of POP who used a ring vaginal pessary and attended at least two follow-up visits, with an interval of >3 months, at the outpatient urogynaecology POP nurse clinic of Queen Elizabeth Hospital, Hong Kong, between 1 January 2021 and 31 December 2023. Patients were excluded if they were pregnant, used other types of vaginal pessary, or had only one follow-up visit or two follow-up visits with an interval of <3 months.

Data collected included age at initiation of vaginal pessary use, POP stage, number of follow-up visits, and complications associated with vaginal pessary use (eg, vaginal ulcers, vaginal discharge, per-vaginal bleeding, and vaginal pain), as well as the person performing self-management and the frequency of self-management, when applicable. Patients were assessed at each follow-up visit. Satisfaction with vaginal pessary use was assessed using a visual analogue scale ranging from 0 to 100. QOL was assessed using the Pelvic Floor Distress Inventory-20, which comprises the Colorectal-Anal Distress Inventory-8,

Urinary Distress Inventory-6, and Pelvic Organ Prolapse Distress Inventory-6. Additionally, QOL was assessed using the Urinary Impact Questionnaire-7 and Pelvic Organ Prolapse Impact Questionnaire-7. These inventories are commonly used to assess QOL among women with pelvic floor disorders, including urinary incontinence, POP, and faecal incontinence¹⁶⁻¹⁸. Patients were instructed to call the clinic hotline if they experienced any pessary-related issues, and ad hoc follow-up visits were arranged as soon as possible.

Statistical analysis was performed using SPSS (Windows version 24.0; IBM Corp, Armonk [NY], US). Self-management and nurse-led care groups were compared using the Student's *t* test or Chi-squared test, as appropriate. A *p* value of <0.05 was considered statistically significant.

Results

In total, 812 patients were included in the analysis. Of these, 343 were able to perform regular vaginal pessary self-management and 469 required nurse-led care because they did not learn or refused to learn self-management (*n*=266), learned but were unable to perform self-management (*n*=128), or learned but did not practise self-management (*n*=75). The two groups were comparable in terms of POP stage. Patients who performed self-management were younger at initiation of vaginal pessary (64.1 vs 70.0 years, *p*<0.001) and had fewer follow-up visits during the 3-year study period (3.83 vs 5.48, *p*<0.001) [Table 1]. Among the 343 patients who performed self-management, 290 (84.5%) did so independently and 53 (15.5%) required caregiver assistance. Regarding the frequency of self-management, 44.9% performed it daily to a few times per week, 41.7% weekly to a few times per month, and 13.4% monthly.

The proportion of patients with vaginal discharge was higher in the self-management group (43.4% vs 37.1%, *p*=0.068), but the proportion of patients with vaginal ulcers with deep tissue penetration and scarring or vaginal erosion on examination was lower in the self-management group (6.4% vs 11.9%, *p*=0.008) [Table 1].

Self-management and nurse-led care groups had comparable vaginal pessary satisfaction scores (74.05 vs 74.31, *p*=0.87) and showed significant improvements in QOL scores between first and last follow-up visits (Table 2).

Discussion

Approximately 42.2% of patients with POP were able to perform vaginal pessary self-management. Of

Table 1. Self-management versus nurse-led care of vaginal pessary in patients with pelvic organ prolapse (n=812).

Variable	Self-management (n=343)*	Nurse-led care (n=469)*	p Value
Age, y	64.1±10.8	70.0±9.8	<0.001
No. of follow-up visits	3.83±1.75	5.48±2.21	<0.001
Pelvic Organ Prolapse Quantification stage			0.65
I	9 (2.6)	11 (2.3)	
II	256 (74.6)	355 (75.7)	
III	75 (21.9)	93 (19.8)	
IV	2 (0.6)	7 (1.5)	
Not measured	1 (0.3)	3 (0.6)	
Complication			
Vaginal discharge	149 (43.4)	174 (37.1)	0.068
Vaginal ulcer	22 (6.4)	56 (11.9)	0.008
Vaginal bleeding	101 (29.4)	119 (25.4)	0.197
Vaginal pain	13 (3.8)	30 (6.4)	0.101

* Data are shown as mean±standard deviation or No. (%) of patients.

Table 2. Quality of life scores in patients with pelvic organ prolapse managed with vaginal pessaries (n=734).

Quality of life	Self-management (n=317)			Nurse-led care (n=417)		
	First visit*	Last visit*	p Value	First visit*	Last visit*	p Value
Pelvic Floor Distress Inventory-20	86.28±26.53	82.29±23.28	0.002	80.75±24.41	76.43±20.83	<0.001
Colorectal-Anal Distress Inventory-8	27.39±4.64	27.42±3.96	0.879	27.11±4.59	26.92±3.71	0.400
Urinary Distress Inventory-6	24.25±18.09	22.99±16.66	0.137	21.67±17.33	20.44±16.25	0.064
Prolapse Distress Inventory-6	34.63±13.01	31.85±11.48	<0.001	31.98±10.80	29.08±8.47	<0.001
Urinary Impact Questionnaire-7	6.45±17.38	5.76±15.31	0.461	4.31±13.53	4.26±14.41	0.929
Pelvic Organ Prolapse Impact Questionnaire-7	5.54±15.48	3.29±11.46	<0.001	4.02±12.27	2.16±9.65	0.003

* Data are presented as mean±standard deviation.

these, 15.5% required caregiver assistance. Caregivers can provide support and education, thereby enhancing patient adherence to self-management. Patients who performed self-management had significantly fewer follow-up visits, suggesting reduced utilisation of healthcare resources^{19,20}. Patients who performed self-management were younger at initiation of vaginal pessary, consistent with a previous study in Hong Kong²¹. Younger patients may be more willing to learn self-management and have greater dexterity for inserting and removing the vaginal pessary. Patients who perform self-management are typically younger, have higher education levels, have milder disease, and use larger

vaginal pessaries²².

The proportion of patients with vaginal ulcers exhibiting deep tissue penetration and scarring or vaginal erosion on examination was significantly lower among those who performed self-management. This finding highlights the beneficial effect of self-management in increasing the longevity of pessary use. Unusual vaginal discharge is a bothersome complication among patients with POP managed with vaginal pessaries²³. Women who perform self-management are more confident in addressing pessary-related problems and more willing to report their

observations; 98.6% report vaginal discharge²⁴. Patients who perform self-management may thus be more aware of the presence of vaginal discharge on the pessary.

The reported satisfaction rate with vaginal pessaries ranges from 70% to 92%²⁵. In the present study, the self-management and nurse-led care groups had comparable levels of satisfaction with vaginal pessary use and demonstrated significant improvements in QOL scores at the last follow-up visit. For patients performing self-management, long-term management involves discharge from follow-up if they are using self-purchased silicone vaginal pessaries and agree to be discharged. If polyvinyl chloride vaginal pessaries are used, patients will continue to attend follow-up visits.

The present study had several limitations. Data were collected retrospectively; key variables influencing patients' decisions regarding self-management, such as education level, family support, and cultural factors, may not have been captured. Moreover, women are less likely to consider self-management when the option is offered after a prolonged period of healthcare professional-led pessary care—they may perceive that professional involvement is necessary for safe management²⁰.

Conclusion

Vaginal pessary self-management can reduce healthcare service utilisation. Caregiver involvement in self-management may enhance adherence. Patients who

performed self-management had a lower rate of vaginal ulcers on examination, which may increase the longevity of pessary use.

Contributors

All authors designed the study, acquired the data, analysed the data, drafted the manuscript, and critically revised the manuscript for important intellectual content. All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

Conflicts of interest

All authors have disclosed no conflicts of interest.

Funding/support

This study received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Data availability

All data generated or analysed during the present study are available from the corresponding author on reasonable request.

Ethics approval

This study was approved by the Central Institutional Review Board of the Hospital Authority (reference: Central IRB-2024-574-5). The patients were treated in accordance with the tenets of the Declaration of Helsinki.

References

- Haylen BT, Maher CF, Barber MD, et al. An International Urogynecological Association (IUGA) / International Continence Society (ICS) joint report on terminology for female pelvic organ prolapse (POP). *Int Urogynecol J* 2016;27:165-94.
- Brown HW, Hegde A, Huebner M, et al. International urogynecology consultation chapter 1 committee 2: epidemiology of pelvic organ prolapse: prevalence, incidence, natural history, and service needs. *Int Urogynecol J* 2022;33:173-87.
- Burrows LJ, Meyn LA, Walters MD, Weber AM. Pelvic symptoms in women with pelvic organ prolapse. *Obstet Gynecol* 2004;104:982-8.
- Cundiff GW, Weidner AC, Visco AG, Bump AC, Addison WA. A survey of pessary use by members of the American Urogynecologic Society. *Obstet Gynecol* 2000;95:931-5.
- Manchana T, Bunyavejchevin S. Impact on quality of life after ring pessary use for pelvic organ prolapse. *Int Urogynecol J* 2012;23:873-7.
- Mendes LC, Bezerra LRPS, Bilhar APM, et al. Symptomatic and anatomic improvement of pelvic organ prolapse in vaginal pessary users. *Int Urogynecol J* 2021;32:1023-9.
- Mao M, Ai F, Zhang Y, et al. Changes in the symptoms and quality of life of women with symptomatic pelvic organ prolapse fitted with a ring with support pessary. *Maturitas* 2018;117:51-6.
- Sansone S, Sze C, Eidelberg A, et al. Role of pessaries in the treatment of pelvic organ prolapse: a systematic review and meta-analysis. *Obstet Gynecol* 2022;140:613-22.
- Kakkar A, Reuveni-Salzman A, Bentaleb J, Belzile E, Merovitz L, Larouche M. Adverse events associated with pessary use over one year among women attending a pessary care clinic. *Int Urogynecol J* 2023;34:1765-70.
- Yimphong T, Temtanakitpaisan T, Buppasiri P, Chongsomchai C, Kanchaiyaphum S. Discontinuation rate and adverse events after 1 year of vaginal pessary use in women with pelvic

- organ prolapse. *Int Urogynecol J* 2018;29:1123-8.
11. Liang SJ, Chow PK, Chou SY, Hsu CS. Incarcerated vaginal pessary: a rare complication. *Taiwan J Obstet Gynecol* 2004;43:149-50.
 12. Dabic S, Sze C, Sansone S, Chughtai B. Rare complications of pessary use: a systematic review of case reports. *BJUI Compass* 2022;3:415-23.
 13. Mohamed WI, Emmanuel D, Maqbool S, Asad A, Jawad A, Ihtesham A. Rectovaginal fistula due to an erosive pessary: a case report. *Int J Med Stud* 2022;9:304-6.
 14. Moore KH, Lammers K, Allen W, Parkin K, Te West N. Does monthly self-management of vaginal ring pessaries reduce the rate of adverse events? A clinical audit. *Eur J Obstet Gynecol Reprod Biol X* 2022;16:100164.
 15. Stairs J, Gujral P, Ehlebracht A, van Diepen A, Clancy AA. Women's attitudes towards pessary self-care: a qualitative study. *Int Urogynecol J* 2023;34:1899-906.
 16. Barber MD, Walters MD, Bump RC. Short forms of two condition-specific quality-of-life questionnaires for women with pelvic floor disorders (PFDI-20 and PFIQ-7). *Am J Obstet Gynecol* 2005;193:103-13.
 17. Ma Y, Xu T, Zhang Y, Mao M, Kang J, Zhu L. Validation of the Chinese version of the Pelvic Floor Distress Inventory-20 (PFDI-20) according to the COSMIN checklist. *Int Urogynecol J* 2019;30:1127-39.
 18. Zhu L, Yu S, Xu T, et al. Chinese validation of the Pelvic Floor Impact Questionnaire Short Form. *Menopause* 2011;18:1030-3.
 19. Ruffolo AF, Lallemand M, Aurore D, Kerbage Y, Rubod C, Cosson M. Self-care of vaginal pessary for pelvic organ prolapse: a systematic review and meta-analysis. *Arch Gynecol Obstet* 2024;309:2367-80.
 20. Kearney R, Brown C. Self-management of vaginal pessaries for pelvic organ prolapse. *BMJ Qual Improv Rep* 2014;3:u206180.w2533.
 21. Cheng WT, Lau CHS, Cheung YKR, Chan SCS. Self-management of pessary in patients with pelvic organ prolapse. *Hong Kong J Gynaecol Obstet Midwifery* 2025;25:33-6.
 22. Lau SCH, Chan WL, Cheng WT, Cheung RYK, Chan SSC. The success rate of Hong Kong Chinese women with pelvic organ prolapse in pessary self-management: a multi-centered prospective study [Epub ahead of print]. *Int Urogynecol J* 2026.
 23. Cheung RY, Lee JH, Lee LL, Chung TK, Chan SS. Vaginal pessary in women with symptomatic pelvic organ prolapse. a randomized controlled trial. *Obstet Gynecol* 2016;128:73-80.
 24. Bugge C, Dembinsky M, Khunda A, et al. Self-management of vaginal pessaries for pelvic organ prolapse: multi-method process evaluation, linked to the TOPSY randomised controlled trial. *BMC Med* 2025;24:19.
 25. Lamers BH, Broekman BM, Milani AL. Pessary treatment for pelvic organ prolapse and health-related quality of life: a review. *Int Urogynecol J* 2011;22:637-44.