

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

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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 use (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 improvements in quality of life scores between the 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

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the morning) of the vaginal pessary by patients to maintain 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], United States). 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 use (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 improvements in QOL scores between the first and last follow-up visits, except for the Colorectal-Anal Distress Inventory-8 score in the self-management group (Table 2).

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

Discussion

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

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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 requirement for patient consent was waived due to the retrospective nature of the research. The patients were treated in accordance with the tenets of the Declaration of Helsinki.

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