

# Nonsurgical Management of Pelvic Organ Prolapse

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Although surgical management of symptomatic pelvic organ prolapse (POP) is common and often necessary, conservative treatments such as pessaries, pelvic floor muscle training, or both can usually result in symptomatic improvement. When treating patients with POP, health care practitioners should focus primarily on identification and alleviation of POP-related symptoms. It is appropriate to offer nonsurgical management to most people with POP. This article reviews the objective and subjective evaluation and nonsurgical management of POP, emphasizing a simple, practical approach to pessary fitting and management.

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n the United States alone, millions of women are affected by pelvic organ prolapse (POP), the prevalence of which is expected to increase nearly 50% by 2050.<sup>1</sup> The strict definition of POP is any descent of the anterior vaginal wall (cystocele, urethrocele), the vaginal apex (uterine or vaginal vault prolapse), the posterior vaginal wall (rectocele, perineocele), or all of these,<sup>2</sup> but mere vaginal descent (ie, mild prolapse) in the absence of symptoms does not require any treatment.

Symptoms that are commonly associated with POP include pelvic heaviness, vaginal bulging, incomplete bowel or bladder emptying, needing to splint the posterior vaginal wall or perineum to defecate, or discomfort during sexual intercourse. It is important to note that most patients who exhibit just mild or moderate POP do not experience any of these symptoms until some aspect of their vaginal wall

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© 2012 by The American College of Obstetricians and Gynecologists. Published by Lippincott Williams & Wilkins. ISSN: 0029-7844/12 actually protrude beyond the opening of the vagina.<sup>3</sup> The etiology of POP is multifactorial and complicated. The main risk factors are vaginal childbirth, frequent increases in intra-abdominal pressure (such as occurs with heavy lifting or chronic constipation), aging, and connective tissue abnormalities.<sup>2</sup>

With at least 200,000 prolapse operations being performed in the United States annually,<sup>4</sup> gynecologists may think of it as primarily a "surgical condition," yet the vast majority of women with POP either choose conservative management or go without treatment altogether. Although minimally invasive surgical options exist for nearly every patient with POP, a large proportion can be managed successfully with pessaries, pelvic floor muscle exercises, or both. The choice between surgical compared with nonsurgical management should be made by the patient once she understands the tradeoffs involved.

There are a variety of reasons that women with symptomatic prolapse might decline surgical management. For example, they may be planning to become pregnant; they might not be able to comply with postoperative restrictions as a result of job or parenting responsibilities; they could have medical comorbidities that would increase their perioperative risks; or they may view surgery as too risky or simply "not worth it." Regardless of the ultimate treatment choice, the initial work-up of POP does not change.

This article is intended to provide strategies for the evaluation and nonsurgical management of

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POP based on published evidence as well as clinical experience.

# DIAGNOSTIC APPROACH

Women with POP typically present in one of two ways; either they notice a bulge on their own or they are alerted to the condition by their gynecologist during an annual examination. When patients find the prolapse themselves, they usually make that discovery while they are taking a shower or sitting on the toilet. Often this scenario is preceded by a series of unusually strenuous situations that caused the patient to increase her intra-abdominal pressure (such as the need to move heavy boxes, a new exercise regimen, or a bout of prolonged severe coughing). The firsttime discovery of a vaginal bulge understandably frightens many women, who may even contact their gynecologists for an emergency appointment. It is not uncommon for these women to fear the worst such as cancer. Gynecologists can use these appointments to reassure and educate their patients. Once a woman understands that the condition is not life-threatening and that both surgical and nonsurgical treatment options exist, she will typically feel relieved and be open to learning about these options.

Another common presenting scenario happens when the gynecologist is the one who discovers the prolapse during a routine examination and informs the patient that she is developing a "dropped bladder" or some other type of prolapse. In this situation, the patient is usually asymptomatic or might have signs of prolapse that she never connected to the condition such as gradually no longer being able to retain a tampon. In some cases, rather than simply informing these patients that they may require surgery in the future, gynecologists could recommend pelvic floor muscle exercises either alone or in combination with a total body exercise program as an attempt to prevent worsening of the prolapse. Again, these "prolapse discovery" visits offer the gynecologist an opportunity to record the specific objective and subjective prolapse-related signs and symptoms and individualize the treatment options offered. It is also appropriate for the gynecologists in these situations to let the patients know that they may never experience significant POP symptoms and thus may never require any treatments at all.

When gathering the subjective data, several validated questionnaires can be quite helpful. Two in particular that address not only prolapse but all pelvic floor disorders are the Pelvic Floor Disorder Inventory and the Pelvic Floor Impact Questionnaire.<sup>5</sup> These forms allow patients to identify any symptoms of prolapse, urinary and fecal incontinence, and pelvic discomfort, and allow them to quantify the extent to which their symptoms affect their quality of life. When feasible, it is helpful for new patients to fill out symptom questionnaires before their actual office visit, because doing so can give them time to reflect on and improve the accuracy of their answers.

Aside from administering validated questionnaires, the health care practitioner can ask several specific questions to learn more details about the severity of the prolapse problem. A typical line of questioning might go like this: "Does your bulge actually come out beyond the opening of the vagina, or is it just 'right there' at the opening?" "When your vaginal bulge is at its largest, how big is it? To answer, can you compare it with the size of some other object like an egg or a golf ball or a baseball?" "Is it that big everyday or do you have some good days and some bad days?"

As for the physical examination component, the main goal is to verify that whatever you are seeing in the examination room jives with the patient's day-today experience. To that end, it can be helpful to examine a patient while she is standing after the supine prolapse examination is completed. This standing examination can be easily performed by asking the patient to stand in front of you with her legs slightly spread while you are seated on a low stool. Then you can simply feel the various aspects of the prolapse while she coughs or performs a Valsalva maneuver. This part of the examination tends to make sense to patients because they usually experience their worst prolapse symptoms while standing.

The best way to quantify POP in a standardized way (during the supine examination) is to use the Pelvic Organ Prolapse Quantification (POP-Q) system.<sup>2</sup> Although the POP-Q system may seem quite complicated at first, with a little practice, all POP-Q values can be obtained within 30-60 seconds during a routine pelvic examination. A full description of the POP-Q examination is beyond the scope of this article. For more information about performing the POP-Q examination, you may read an easy-to-follow description by Prietto et al<sup>6</sup> or view a POP-Q video tutorial by visiting www.youtube.com/watch?v=LplpznnhDmU.

After using the POP-Q system to describe the specific degree of prolapse found in the anterior, apical, and posterior compartments, the gynecologist can verify the degree of bother experienced by the patient. At this point, it is important to have the patient distinguish between "physical bother" and "mental bother." Doing so can be tricky, but it is very important. Some patients will deny any physical symptoms yet still seek surgical correction of mild

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POP because they are mentally troubled by knowing that they have "something wrong down there." Other patients are primarily bothered physically by their prolapse. Both groups of patients will say "yes" when asked whether the prolapse "bothers" them. Women who are primarily bothered mentally, with little or no physical bother, usually present fully intent on undergoing corrective surgery. In those cases especially, the surgeon should carefully manage the patients' expectations and understand their goals. Patients who feel worried or mentally bothered by their prolapse but remain physically symptom-free should not be operated on.

Another important step in the physical examination is pelvic floor muscle strength assessment. Ask the patient to perform her version of a "Kegel contraction" while your fingers are in her vagina. Many women will have tried to perform these contractions in the past so your first job is to determine whether they have been doing so correctly. Some patients will use accessory muscles such as the buttocks, medial thighs, or abdominals. Other women will perform a Valsalva thinking they are doing "Kegels." For women who have been "Kegeling" incorrectly, this part of the examination provides a valuable teaching opportunity. Once a patient is performing a proper pelvic floor contraction, ask her to squeeze as strongly as she can and to hold the contraction for as long as she can. At this point, her muscle strength and control can be rated by some scale such as the one popularized by Sampselle (Table 1).<sup>7</sup> Patients with weak pelvic floor muscles can be encouraged to exercise and thereby possibly arrest the development of further prolapse. On the other hand, patients who already possess very strong pelvic muscles and good voluntary control over them can be told that they are probably less likely to "fix themselves" through further exercise.

## NONSURGICAL TREATMENT OPTIONS

There are two main nonsurgical treatment options for POP: pessary placement and pelvic floor muscle

 Table 1. Five-Point Rating Scale for Pelvic Floor

 Muscle Strength

Grade	Description
0	No contraction
1	Flicker
2	Weak squeeze with 2-sec hold; no obvious lift
3	Fair squeeze with definite lift
4	Good squeeze and good hold with lift
5	Strong squeeze, good lift; repeatable; easily held for 5–10 sec

exercises. Of course, these options can be used simultaneously or individually.

#### Pessaries

Pessaries can provide immediate relief of prolapse symptoms and can be appropriate for either temporary or long-term use.<sup>8</sup> The most typical patients who will choose to be long-term pessary wearers are aged 65 years or older, have significant surgical risk factors, or both.<sup>9,10</sup> Some of the risk factors that may lead health care practitioners to a trial of pessary treatment rather than surgery include diseases that could predispose to perioperative morbidity such as poorly controlled diabetes or a history of pelvic radiation. These conditions may increase the potential for poor wound healing or surgical site infection and may therefore drive the risk-versus-benefit assessment to favor nonsurgical management.

In some cases, pessary placement can be used as an "experiment" that helps to determine the optimal treatment choice by simulating the support that an operation can provide. This strategy is especially useful for women whose reported prolapse-specific symptoms outweigh their actual physical findings (ie, severe symptoms associated with minimal to moderate prolapse). If a pessary trial alleviates prolapse symptoms in these cases, it is reasonable to assume that prolapse surgery could alleviate the symptoms as well. Among patients for whom pessary management is successful, the symptomatic benefits of choosing subsequent surgical correction may be only marginal.<sup>11</sup>

## **Choosing the Right Pessary**

All modern pessaries are made of medical-grade silicone and are therefore durable and do not usually create a foul-smelling vaginal discharge. Older, obsolete pessaries are made of rubber or latex and should not be used.

Although the wide variety of available pessaries can be daunting to the uninitiated, there are two pessary types that are generally considered the most useful, namely the "ring with support" and the "Gellhorn"<sup>12</sup> (Figs. 1 and 2). The ring with support resembles a large diaphragm, and the Gellhorn often is compared with the shape of a mushroom. Both are usually effective and comfortable, but the ring with support is the more popular first-line choice.<sup>13</sup> That is because, regardless of the specific defect present (eg, cystocele, enterocele, uterine prolapse), a ring with support often will be the right pessary for the job, and patients usually can be taught to insert and remove these pessaries on their own. Both the ring with

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**Fig. 1.** Plain ring and ring with support pessary. Image courtesy of Bioteque America, Inc, © 2012. *Culligan. Nonsurgical Management of Pelvic Organ Prolapse. Obstet Gynecol 2012.* 

support and Gellhorn pessary types tend to rest just inside the level of the introitus when a patient is upright. That teaching point is important because the pictures provided by pessary manufacturers in the package inserts usually show the devices "defying gravity" at the apex of the vagina. These pictures are often supplied to patients and can result in confusion regarding proper pessary position. New pessary wearers who can see or feel their pessaries just inside the introitus when they spread the labia will sometimes assume that their devices (although comfortable) do not fit correctly simply because what they are seeing or feeling does not match the pictures. Figures 3 and 4 depict the realistic positions of properly fitted ring with support and Gellhorn pes-



**Fig. 2.** Gellhorn pessary. Image courtesy of Bioteque America, Inc, © 2012. *Culligan. Nonsurgical Management of Pelvic Organ Prolapse. Obstet Gynecol 2012.* 



**Fig. 3.** Ring with support pessary shown in a "realistic" position with the patient upright. Image courtesy of Bioteque America, Inc, © 2012. See the associated animation, available online at http://links.lww.com/AOG/A288 or by scanning the QR Code (below) on your smartphone (animation courtesy of Tim Peters & Co, © 2012, developed in consultation with Dr. Culligan).

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saries in an upright patient. Online readers of this article may click on these figures to watch animations of ring with support and Gellhorn placement and final "settling" that usually leaves them just inside the introitus. Showing these animations to patients may help them understand the mechanics of wearing a pessary.

The Gellhorn pessary (Fig. 2) can be thought of as a second-line choice for women who cannot retain the ring with support (ie, when it tends to fall out). Compared with the ring with support pessary, the Gellhorn pessary creates more friction and suction effects within the vagina. These characteristics can keep Gellhorn pessaries in place in patients who could not retain a ring. Those same characteristics, however,



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**Fig. 4.** Gellhorn pessary shown in a "realistic position" with the patient upright. Image courtesy of Bioteque America, Inc, © 2012. See the associated animation, available online at http://links.lww.com/AOG/A289 or by scanning the QR Code (below) on your smartphone (animation courtesy of Tim Peters & Co, © 2012, developed in consultation with Dr. Culligan).

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also make it very difficult for patients to insert or remove these pessaries on their own. As a general rule, the likelihood of any pessary working well for a patient drops precipitously if neither a ring with support nor a Gellhorn pessary will stay in place. Other varieties of pessaries are described subsequently.

Marland pessaries (Fig. 5) are shaped like a ring at their base, and they have a wedge-shaped ridge on one side. They can be useful when a standard ring with support tends to fall out. The wedge-shaped side can be placed against the leading edge of the prolapse or toward the vaginal opening. The ring aspect of the pessary can be placed against the anterior or posterior vaginal wall. These placement options make a given Marland behave like four slightly different pessary



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Fig. 5. Marland pessary. Image courtesy of Bioteque America, Inc, © 2012. *Culligan. Nonsurgical Management of Pelvic Organ Prolapse. Obstet Gynecol 2012.* 

choices. Despite this versatility, patients do not often find this pessary very user-friendly when attempting to insert and remove it on their own.

The donut pessaries (Fig. 6) are space-filling pessaries that can be useful but are difficult to remove and replace for patients and health care practitioners alike. In fact, patients are almost never able to insert and remove these pessaries by themselves. Donut pessaries also produce more foul-smelling vaginal discharge than most other pessary types.

The Cube pessary (Fig. 7) should be used as a last resort and then only for patients who have agreed to remove and replace it by themselves on a daily basis. If it is not removed regularly, it will cause serious



Fig. 6. Donut pessary. Image courtesy of Bioteque America, Inc, © 2012.

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**Fig. 7.** Cube pessary. Image courtesy of Bioteque America, Inc, © 2012. *Culligan. Nonsurgical Management of Pelvic Organ Prolapse.* 

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vaginal ulcerations and a copious foul vaginal discharge.

Gehrung pessaries (Fig. 8) are rarely used pessaries because they are technically difficult to place and tend to rotate out of their proper position easily. Their main advantage is that they can be manually molded to fit the type and size of prolapse present. The convexity of the curve should be placed toward the bulge.

The Hodge pessary (Fig. 9) and the other "lever" pessaries (which look very much like the Hodge) work by being wedged into position behind the pubic bone. Although their open center is supposed to allow patients to have sexual intercourse without pessary



**Fig. 8.** Gehrung pessary. Image courtesy of Bioteque America, Inc, © 2012. *Culligan. Nonsurgical Management of Pelvic Organ Prolapse.* 

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**Fig. 9.** Hodge pessary. Image courtesy of Bioteque America, Inc, © 2012. *Culligan. Nonsurgical Management of Pelvic Organ Prolapse. Obstet Gynecol 2012.* 

removal, the practicality of that feature remains suspect. These pessaries are rarely used.

#### Fitting the Pessary

As mentioned previously, Swift et al<sup>3</sup> demonstrated that women do not tend to experience prolapse symptoms until their bulge extends beyond their introitus. Therefore, the primary goal of pessary management is to simply keep the pelvic organs from bulging beyond the opening of the vagina and thereby alleviate prolapse symptoms. Regardless of pessary type, the best size pessary for a given patient is the smallest one that will not fall out. Virtually any patient can retain a pessary comfortably as long as she has one physical characteristic: namely, her internal vaginal caliber must be wider than her vaginal opening. That is because the introitus and perineal body tend to hold most pessaries in place. In general, women with introitus measurements greater than 4 cm are less likely to comfortably retain a pessary as a result of the large pessary sizes required in these women. Nevertheless, a trial of pessary use for women with larger introitus measurements remains warranted.

When determining the proper pessary type and size for a given patient, place two fingers inside the vagina as would be done during any bimanual examination. Spread your fingers as wide as you can without causing pain and keep that width in mind. Keep your fingers at that width while removing them from the vagina. If the caliber of the patient's introitus requires you to close your fingers as you remove them, that patient will probably retain a pessary

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comfortably. If, however, the internal caliber of the vagina is more than or equal to the caliber of her introitus, almost any type of pessary will tend to become dislodged when she stands or walks. When choosing a ring with support, Marland, or Gellhorn pessary, the width of the vaginal canal (determined during your bimanual examination) should be roughly the same as the diameter of the chosen pessary.

After placing the pessary in the vagina, ask the patient, "How does that feel?" Ideally she will respond by saying, "How does what feel?" In other words, a pessary that fits properly will not usually be felt by the patient at all. Patients are usually quite pleasantly surprised by this phenomenon. If the pessary causes any discomfort immediately after placement, that discomfort is only likely to increase over time. These patients are not likely to "get used to it" so that pessary should probably be removed immediately. On the other hand, patients often describe a vague pelvic or vaginal irritation, especially if more than one pessary was placed and removed during a single fitting session. These sensations can be the normal result of manipulation during the examinations and may not be a harbinger of real discomfort. Obviously clinical judgment should be used to determine whether complaints of discomfort warrant immediate removal compared with a trial of a given pessary.

Immediately after you place the chosen pessary (while the patient is still in the dorsal lithotomy position), ask her to cough vigorously. If you have chosen a pessary that is too small for the patient, it will be expelled spontaneously as she does so. If it does not fall out spontaneously, gently tug on the edge of the pessary as the patient coughs again. If it becomes dislodged with only minimal tugging, the pessary is too small. If a patient passes both of these tests while in the supine position, have her stand up and repeat the process. If the pessary still tends to comfortably stay in position, it will probably be the right one for the patient.

The patient can then be given privacy to perform her final sizing test on her own while sitting on a toilet in your office. She should strain to determine whether the pessary is going to fall out during bowel movements. During this test, a plastic urimeter "hat" can be placed in the toilet rim to prevent the pessary from landing in the toilet bowl. If the pessary remains in place, there remains little chance that it will be spontaneously dislodged during her daily activities. If the pessary falls out during any of these tests, you should simply repeat the process with a slightly larger pessary or perhaps one of a slightly different shape. Women with "occult stress incontinence" that becomes unmasked by pessary placement do not usually decide to continue with pessary management.<sup>9</sup>

Once the proper pessary has been chosen, we usually send the patient home with it in place. We want her to go about her daily routine leaving it in continuously for approximately 1–2 weeks. When the patient returns to the office, she is asked whether her quality of life was improved by wearing the pessary. If so (and if she still wants to use the pessary rather than have surgery), she is offered the chance to learn insertion and removal. With rare exceptions, the ring or ring with support pessaries are the only types that allow for self-management by the patient making them the only pessaries to try for sexually active patients. Most patients cannot enjoy sexual intercourse with a pessary in place.

Once a patient masters pessary insertion and removal, we do not need to follow up with her very often. Annual visits are usually adequate for this group of patients as long as they are willing to remove their pessaries on a relatively frequent basis. We ask that these women remove their pessaries at bedtime each night and replace them again in the morning. A common scenario would be for a woman to have a morning bowel movement, take a shower, and then insert her pessary leaving it in place for the rest of the day. Some women would rather remove their pessaries less frequently than every night. They are informed that their amount of vaginal discharge will be inversely proportional the number of nights per week they leave their pessary out. As long as they are willing to leave their pessary out overnight at least one or two nights per week, significant vaginal ulcers or abrasions usually do not occur so annual follow-up is all that we require.

For those patients unable or unwilling to manage their own pessaries, we set up an office management schedule. For these patients, office visits are scheduled every 2–3 months during which the pessary is removed and cleaned so that the vagina can be irrigated and inspected for abrasions and ulcerations. The newly cleaned pessary is then replaced until the next office visit.

The vast majority of pessary wearers do not require the regular application of vaginal estrogen or antibiotic ointments. We only suggest the use of vaginal medications when we are attempting to treat specific issues such as proven vaginal abrasions or discharge. That is because patient satisfaction and compliance with pessary use seems to be better when

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the treatment plan is kept as simple and inexpensive as possible. If a woman does not really need to use a messy cream or ointment, she would rather not do so.

## **Complications Associated With Pessary Use**

True pessary-related complications are quite rare and are almost always associated with patient noncompliance or loss to follow-up. Such neglect can lead to vaginal ulcerations, abrasion, or even migration into adjacent viscera. Most pessary-related vaginal abrasions or ulcerations will resolve if the patient is given a "pessary holiday" for 2-4 weeks. During this time period, the pessary is left out and the patient should apply estrogen cream to the vagina on a nightly basis. Keep in mind, however, that these "pessary holidays" are anything but a holiday for patients with severe POP because they will have to live with their severe prolapse symptoms during that time period. For this reason, expectant care and periodic observation (and continued pessary use) is often the best plan for dealing with moderate asymptomatic abrasions or ulcerations. Stable lesions can simply be observed in most cases.

Other common problems faced by pessary wearers fall short of true "complication" status, namely 1) "unmasking" of occult stress urinary incontinence; 2) pessary-related vaginal discharge; 3) minor vaginal spotting; 4) spontaneous expulsion; and 5) Pap test abnormalities related to inflammation.

# Pelvic Floor Muscle Training for the Treatment of Prolapse

Although few studies have been published evaluating the effectiveness of formal pelvic floor muscle training to correct POP, their findings are compelling, especially with respect to mild or moderate prolapse. During a typical pelvic floor muscle training session, the therapist will assess the patient's ability to contract her pelvic floor muscles in isolation and at the same time assess her muscle strength either digitally or by perineometry. The frequency and nature of subsequent pelvic floor muscle training sessions will usually be individualized based on the patient's ability and time constraints. It can be helpful to inform patients that pelvic floor muscle training sessions are primarily for teaching and muscle strength assessment and that the bulk of their muscle strength improvements will happen as a result of work they do on their own. In other words, they should not expect significant improvements if they only exercise their muscles during the pelvic floor muscle training sessions.

Ghroubi et al<sup>14</sup> reported on 47 women with mild (but symptomatic) anterior wall prolapse who were randomized to pelvic floor muscle training compared with no treatment. Although significant sustained symptomatic benefits were found within the treatment group, the study was limited by a lack of objective anatomic measurements.

Hagen et al<sup>15</sup> performed a randomized trial comparing a 16-week pelvic floor muscle training plus lifestyle advice program (n=23) to lifestyle advice alone (n=24) for women with symptomatic stage I or II POP as measured by the POP-Q system. They demonstrated significantly improvements in both prolapse symptoms and POP-Q measurements in the treatment group as compared with the no treatment group.

In a similar study, Stupp et al<sup>16</sup> randomized 37 women with POP-Q stage II POP to 14 weeks of pelvic floor muscle training compared with no active treatment. Again, both anatomic and symptomatic improvements were found within the pelvic floor muscle training group.

In a larger very well-designed study, Braekken et al<sup>17</sup> randomly assigned 109 women with symptomatic prolapse (POP-Q stages I, II, and III) to pelvic floor muscle training (n=59) or control (n=50). They found at least one stage of anatomic improvement in 18% of their treatment group compared with 8% of their no-treatment group (P=.035). In addition to these anatomic improvements, the treatment group reported significant symptomatic improvements as well.

Given these results, it seems clear that highly motivated women with mild to moderate prolapse might improve their anatomic measurements and symptoms through dedication to a pelvic floor muscle training program, at least in the short run. However, the long-term benefits are unknown. Perhaps the short-term benefits will lack longevity as a result of lack of sustained compliance to the exercise programs. There is evidence to suggest that even patients who have experienced significant benefits from pelvic floor muscle training tend to give up their exercise regimen over time.<sup>18</sup>

So, what kind of pelvic floor exercise program might lead to higher rates of long-term compliance? Perhaps "full-body" exercise programs that emphasize improvements in pelvic floor muscle strength while simultaneously focusing on many other muscle groups could lead to better long-term compliance. Brubaker et al<sup>19</sup> reported on 87 women who completed pelvic floor symptom questionnaires before and after participating in a "pelvic floor fitness" class for 11 weeks. These classes incorporated full-body exercises similar to those found in yoga or Pilates classes. The participants reported significant improve-

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ments in their pelvic floor symptoms, but no objective assessment of pelvic floor muscle strength improvements were included in the study design.

To determine whether such "lay classes" can truly result in better pelvic floor strength, Culligan et al<sup>20</sup> performed a randomized trial comparing Pilates with traditional pelvic floor muscle training for strengthening the pelvic floor. In that study, 62 women were randomly assigned either to 12 weeks of individual Pilates instruction (with pelvic floor emphasis) at a local studio or to 12 weeks of traditional physical therapy-based pelvic floor muscle training in a medical setting. Pelvic floor muscle strength (as measured objectively with a perineometer) improved significantly in both groups, and there was no difference between groups in terms of strength gained.

Further study will be required to determine whether Pilates or "pelvic fitness" classes can actually result in symptomatic, objective, or both improvements among women with POP, but in the meantime, it is reasonable to recommend these no-risk options as being at least potentially beneficial. Even for those patients who ultimately choose to undergo surgical correction of their POP, preoperative pelvic floor muscle strengthening can only be beneficial. Of course, traditional pelvic floor muscle training as offered in a physical therapy setting may be the most useful initial strategy because those hands-on sessions can ensure proper isolation and engagement of the pelvic floor muscles.

### **CONCLUSIONS**

Patients with POP should be made aware of nonsurgical treatment options. Modern pessaries can provide symptomatic relief to the majority of patients with prolapse, and pelvic floor muscle training can stabilize or even slightly improve objective and subjective signs and symptoms of POP. In either case, when choosing these conservative treatment options, patients have nothing to lose but time if they are unsuccessful.

#### REFERENCES

- 1. Wu JM, Hundley AF, Fulton RG, Myers ER. Forecasting the prevalence of pelvic floor disorders in US women: 2010 to 2050. Obstet Gynecol 2009;114:1278-83.
- Bump RC, Mattiasson A, Bo K, Brubaker LP, DeLancey JO, Klarskov P, et al. The standardization of terminology of female pelvic organ prolapse and pelvic floor dysfunction. Am J Obstet Gynecol 1996;175:10–7.
- 3. Swift SE, Tate SB, Nicholas J. Correlation of symptoms with degree of pelvic organ support in a general population of

women: what is pelvic organ prolapse? Am J Obstet Gynecol.  $2003;189{:}372{-}7.$ 

- Boyles SH, Weber AM, Meyn L. Procedures for pelvic organ prolapse and urinary incontinence in the United States, 1979–1997. Am J Obstet Gynecol 2003;188:108–15.
- Barber MD, Walter MS, Bump RC. Short forms for 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.
- Prietto N, Luber KL, Nager CW. Simple yet thorough office evaluation of pelvic floor disorders. OBG Management 2003; 15:80–95.
- Sampselle CM, Brink CA. Pelvic muscle relaxation: assessment and management. J Nurse Midwifery 1990;35:127–32.
- Handa VL, Jones M. Do pessaries prevent the progression of pelvic organ prolapse? Int Urogynecol J Pelvic Floor Dysfunct 2002;13:349–51.
- Friedman S, Sandhu S, Wang C, Mikhail M, Banks E. Factors influencing long-term pessary use. Int Urogynecol J 2010;21: 673–8.
- Clemons JL, Aguilar VC, Tillinghast TA, Jackson ND, Myers DL. Risk factors associated with an unsuccessful pessary fitting trial in women with pelvic organ prolapse. Am J Obstet Gynecol 2004;190:345–50.
- 11. Abdool Z, Thakar R, Sultan AH, Oliver RS. Prospective evaluation of outcome of vaginal pessaries versus surgery in women with symptomatic pelvic organ prolapse. Int Urogynecol J 2009;22:273–8.
- Cundiff GW. Amundsen CL. Bent AE, Coates KW, Schaffer JL, Strohbehn K, Handa VL. The PESSRI study: symptom relief outcomes of a randomized crossover trial of the ring and Gellhorn pessaries. Am J Obstet Gynecol 2007;196:405.e1–8.
- Pott-Grinstein E, Newcomber JR. Gynecologists' pattern of prescribing pessaries. J Reprod Med 2001;46:205–8.
- Ghroubi S, Kharrat O, Chaari M, Ben Ayed B, Guermazi M, Elleuch MH. Effect of conservative treatment in the management of low-degree urogenital prolapse [in French]. Ann Readapt Med Phys 2008;51:96–102.
- Hagen S, Stark D, Glazener C, Sinclair L, Ramsay I. A randomized controlled trial of pelvic floor muscle training for stages I and II pelvic organ prolapse. Int Urogynecol J Pelvic Floor Dysfunct 2009;20:45–51.
- Stüpp L, Resende AP, Oliveira E, Castro RA, Girão MJ, Sartori MG. Pelvic floor muscle training for treatment of pelvic organ prolapse: an assessor-blinded randomized controlled trial. Int J Urogynecol 2011;22:1233–9.
- Braekken IH, Majida M, Engh ME, Bo K. Can pelvic floor muscle training reverse pelvic organ prolapse and reduce prolapse symptoms? An assessor-blinded, randomized controlled trial. Am J Obstet Gynecol 2010;203:170.e1–7.
- Bo K, Kvarstein NI. Lower urinary tract symptoms and pelvic floor muscle exercises after 15 years. Obstet Gynecol 2005; 105:999-1005.
- Brubaker L, Shott S, Tomezsko J, Goldberg RP. Pelvic floor fitness using lay instructors. Obstet Gynecol 2008;111: 1298-304.
- Culligan PJ, Scherer J, Dyer K, Priestley JL, White GG, Delvecchio D, Vangeli M. A randomized clinical trial comparing pelvic floor muscle training to a Pilates exercise program for improving pelvic muscle strength. Int J Urogynecol 2010;21:401–8.

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