



Conservative Management of Pelvic Organ Prolapse

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Introduction

Pelvic floor disorders encompass a broad range of debilitating conditions predominantly affecting middle-aged and elderly women. Prevalence of any degree of prolapse in women ages 20 to 59 years is estimated to be 30.8%.¹ Over the next 30 years, it is predicted that growth in demand for services to care for female pelvic floor disorders will increase at twice the rate of growth of women between the ages of 30 and 89 years.² It will, therefore, be important for gynecologists to be skilled in the assessment and treatment of these conditions.

Whereas surgical management of pelvic floor disorders is common and often needed, conservative forms of therapy such as pessaries and pelvic floor therapy can often be successfully used.

The purpose of this chapter is to provide a review of recent literature on the practical

use of pessaries and pelvic floor therapy for the management of pelvic organ prolapse. The review covers the current role of pessaries in gynecologic clinical care, indications for their use, fitting techniques, follow up, and possible complications and contraindications. This chapter also presents a review of data related to pessary use regarding patient satisfaction, efficacy in improving prolapse symptoms, factors affecting successful fitting, and compliance. The role of physiotherapy in the prevention and management of pelvic organ prolapse is described.

Current Role and Use of Pessaries by Gynecologists

Pessaries are most often used when the patient has a strong preference for nonsurgical management of pelvic organ prolapse or when the patient's health status confers a significant risk for surgical morbidity and mortality. In recent surveys, 87% to 98% of gynecologists reported using pessaries in their practices.^{3,4}

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Pessary Efficacy in Improving Prolapse Symptoms

Only a few studies have evaluated the efficacy and patient satisfaction of pessaries in relieving symptoms of prolapse. Clemons⁵⁻⁷ followed 100 women fitted with pessaries for stage II prolapse for changes in prolapse and urinary symptoms. At 2 months, 92% of women fitted with a pessary were satisfied. Nearly all prolapse symptoms (bulge, pressure, discharge, and splinting) had resolved and concurrent urinary symptoms (baseline stress incontinence, urge incontinence, and voiding difficulty) had improved in approximately half of patients. However, among women with no urinary symptoms at baseline, 21% complained of occult (de novo) incontinence with pessary use.

Many clinicians have noted the decrease in prolapse stage after long-term pessary use and the successful role of pessaries in preventing progression of prolapse. One small study suggested that there was a therapeutic effect of wearing a supportive pessary as evidenced by an improvement of stage of pelvic organ prolapse in 21% of patients followed for 1 year.⁸ The authors speculate that the mechanism of this improvement might be the result of improved levator ani function, and that pessary support of pelvic organs may allow for recovery of passive stretch, thus improving levator function and muscular support of pelvic organs.

Factors Effecting Successful Pessary Fitting

Achieving optimal results and satisfaction with pessary use requires accurate identification of appropriate patient candidates and proper choice of pessary type. Successful pessary fitting rates range from 56% to 74%. The two studies with the highest rates of success used similar protocols. Patients were first fitted with ring pessaries and, if expelled, a space-filling pessary such as the Gellhorn was then attempted.

Important in the discussion of successful pessary fitting is to speculate which patients are likely to choose pessary management over surgery or expectant management. A study evaluating the clinical factors that affect a patient's treatment choice for symptomatic pelvic organ prolapse found that older patients (age 70 ± 12 years) were 10% more likely to choose pessary over surgery. History of prior pelvic surgery, on the other hand, was the strongest predictor of a patient choosing surgery as their form of treatment.⁹

Clemons et al fitted 100 women with pessaries for symptomatic pelvic organ prolapse and found that no patient demographic or comorbidity could be identified as a risk factor for an unsuccessful pessary fitting trial. However, this study did find an association with shorter vaginal length (≤ 6 cm) and wider vaginal introitus (4 finger breaths) on pelvic examination predicted an unsuccessful pessary fitting trial. Interestingly, stage III or IV prolapse in each compartment (anterior vaginal wall, posterior vaginal wall, and vault/uterine prolapse) was not a risk factor for an unsuccessful fitting. A similar study also evaluated variables, which would diminish a patient's ability to retain a pessary. In this particular study, physical examination findings that predicted a patient's inability to retain a pessary were absence of sacral reflexes, inability to Kegel, higher stage of prolapse, and an enlarged genital hiatus (greater than 4 cm).¹⁰

Factors Affecting Continued Pessary Use

Factors that affect a patient's likelihood to continue with pessary use have been evaluated by several studies. Clemons et al found that 72% of women satisfied with their pessary after 2 months continued to use their pessary after 1 year and 64% continued use after 2 years. In their study, older age (>65 years) was the strongest predictor of continued pessary use after a successful fitting. Stage III and IV posterior wall prolapse

was associated with discontinued use of the pessary. This finding is not surprising because anecdotally, women with large posterior wall defects are less likely to experience relief of their prolapse symptoms with pessary use. Initial desire for surgical management of prolapse symptoms was also found to be associated with discontinued use of pessaries. Brincat¹¹ performed a retrospective chart review of 136 current "users" versus "nonusers" (women who stopped wearing the pessary during the study period) to determine clinical variables predicting continued pessary use. The authors reported that women with prolapse and incontinence or prolapse alone were more likely to continue with long-term pessary use than women with isolated incontinence. Their most significant finding of this study was that long-term pessary use was acceptable to sexually active women.

In summary, there is insufficient evidence to allow a practitioner to know which patients are likely to accept and continue pessary use. Therefore, all patients with symptomatic prolapse should be offered conservative management of prolapse using pessaries.

Indications

Indications for pessary use are:

- Primary therapy for prolapse symptoms
- Diagnosis and preoperative evaluation of patients with pelvic prolapse
- Temporary treatment of prolapse symptoms
- Urinary incontinence and obstetric indications

PRIMARY THERAPY

The pessary has 4 primary indications. The first and most common, is the relief of prolapse symptoms as initial treatment or recurrence of prolapse.

DIAGNOSIS AND PREOPERATIVE EVALUATION

The second indication for pessary use is to diagnose symptoms associated with genital

prolapse before surgery. Occult incontinence, urinary retention, and pelvic pain are conditions that should be evaluated preoperatively to allow for comprehensive counseling as to the best surgical or nonsurgical form of treatment. A recent study addressed the question of whether preoperative reduction of the anterior vaginal wall in patients with urinary retention (postvoid residual [PVR] ≥ 100 cc) with a pessary would predict voiding function after reconstructive surgery. Lazarou¹² concluded that pessary reduction of the anterior vaginal wall in patients with urinary retention has good sensitivity, specificity, and positive predictive value for postoperative voiding function.

TEMPORARY TREATMENT

Preoperatively, a pessary can be useful in the healing of vulvar erosions secondary to a large prolapse. Second, mechanical devices can be used as an interim measure while a patient prepares for surgery and considers nonsurgical options for relief of symptoms. In a similar manner, younger women will benefit from the symptomatic relief of their prolapse symptoms as they wait to complete childbearing.

URINARY INCONTINENCE AND OBSTETRIC INDICATIONS

Pessaries are an important conservative mode of therapy used for urinary incontinence as well as the use of pessaries in obstetrics for the management of an incarcerated uterus or incompetent cervix. Pessaries designed to support the urethrovesical junction with a knob or prongs may be successful alternatives for surgery for the management of stress incontinence with a success rate ranging from 15% to 59%.¹³ In obstetrics, pessary use has been reported in the first trimester for the treatment of incarcerated uterus. Rarely pessaries have been used in cases of incompetent cervix. A recent review of the use of pessaries in women at risk for preterm delivery reports that they might be helpful and seem to be

without risks. However, the existing data are limited by a lack of inclusion criteria and selection bias. The review recommends that pessaries be used as an adjunct to cerclage and not to replace the use of cerclages in the treatment of incompetent cervix.¹⁴

Patient Evaluation

HISTORY

The evaluation of a patient for a pessary must be made in the context of her daily activities, level of functioning, and the impact of pelvic organ prolapse on her quality of life. In addition, the patient's specific prolapse symptoms must be identified. As discussed previously, most symptoms of prolapse (bulge, pressure, discharge, and splinting) are effectively relieved by pessaries.⁵⁻⁷ Urinary symptoms have been shown to improve or worsen with pessaries. Patients with chronic constipation may have difficulty retaining a pessary. The pessary may increase defecation symptoms such as difficult evacuation.

The patient's general health status must also be assessed. Although ideally, a patient would care for her own pessary, some need following by a physician for regular pessary checks. In planning for their follow up, it is also important to ascertain a patient's living situation and their access to medical care. Undoubtedly, a neglected pessary presents a clinical dilemma for most physicians because most of these patients are typically poor surgical candidates. A sexual history should be included because recent data demonstrates that sexually active women find pessaries an acceptable long-term treatment option.¹¹ Ultimately, one of the most important components of a pessary evaluation is an assessment of the patient's capacity to understand the pessary's function, maintenance, and the importance of medical follow up.

PHYSICAL EXAMINATION

Some of the key components of the physical examination pertain to the patient's pelvic

floor strength, severity of prolapse, specific pelvic floor defects, and health of the vaginal epithelium.

Pelvic Floor Assessment

Evaluation begins with careful examination of the external genitalia for signs of excoriation and erythema, which may be present after prolonged complete vault or uterine prolapse. The size of the genital hiatus (defined as middle of the external urethral meatus to the posterior midline hymen) is measured, and a size greater than 4 to 5 cm is generally felt to be enlarged. Vaginal depth and caliber is estimated by digital vaginal examination. Pelvic floor strength is important in retaining a pessary, and it is evaluated by placing 2 fingers in the patient's vagina and asking her to perform a Kegel contraction.

Prolapse Severity and Specific Pelvic Floor Defects

The severity of pelvic organ prolapse and the site-specific defects are evaluated by examining a patient in a semirecumbent dorsal lithotomy position. The patient is asked to perform a Valsalva maneuver and possibly cough to demonstrate the maximum extent of the prolapse. If the maximum protrusion is demonstrated, the vaginal walls will appear tight, and it is essential to confirm with the patient if this is the most severe protrusion that she experiences. If it is difficult to differentiate which part of the vagina is prolapsing, half of a speculum is used to reduce the prolapse to ascertain which wall of the vagina most prolapsed.

Health of the Vaginal Epithelium

Evaluation for vaginal and vulvar atrophy secondary to estrogen deficiency should be assessed on examination. Little to no data is currently available to dictate whether vaginal atrophy is indeed a contraindication for pessary fitting. Wu and colleagues¹⁵ reported on their experience with 110 women who were prospectively enrolled in a study

evaluating a pessary protocol. They reported that hormone replacement therapy (HRT) did not predict successful pessary fitting. Moreover, the health of the vaginal epithelium was recorded in 75 of these women, and no correlation was found between current hormone replacement status and vaginal abrasions rates. However, the incidence of vaginal abrasions was increased significantly as the vaginal epithelium became thinner. This study points out that it is difficult to control for various aspects of HRT and its role in maintaining healthy vaginal epithelium with pessary use. These factors include the type, route, frequency, and length of treatment of hormone therapy. Most experts would advocate local estrogen therapy in pessary users provided that there are no contraindications to its use. Recent studies have shown that oral HRT/estrogen replacement therapy (ERT) provides no functional improvement of the lower urinary tract.¹⁶ To definitively answer the question of estrogen use and pessaries, we need trials on type, route, frequency, and so on.

Choosing a Pessary

There are 2 general categories of pessaries for the management of pelvic organ prolapse: 1) support pessaries and 2) space-filling pessaries (Table 2). Support pessaries such as the ring pessary use a spring mechanism that rests in the posterior fornix and against the posterior aspect of the pubic symphysis.¹⁷ The space-filling devices, such as the cube pessary, function by creating suction between the device and the vaginal walls, or by merely occupying a space larger than the genital hiatus as demonstrated by the donut pessary. The Gellhorn pessary is thought to function through a combination of these latter 2 mechanisms.

Currently available pessaries are made of flexible silicone or less frequently latex material. The advantages of silicone or other inert plastics include convenient patient insertion and removal, lack of allergenic potential, greatly reduced odor absorption, and their

durability. Rigid pessaries are no longer recommended, and if found on a patient's examination, they should be removed.

There are 2 generally accepted approaches to choosing and fitting a pessary to manage symptomatic pelvic prolapse. Most commonly, a physician will choose a pessary based on the specific support defects (complete uterine prolapse, anterior, apical, or posterior wall defect). A second approach involves using the same pessary for all defects.

Currently, neither approach has been proven more effective than the other. A survey given to members of the American Urogynecologic Society found that a majority of responding physicians (78%) tailored their choice of pessary to the specific support defect. The findings of this survey point to the fact that the pessaries most commonly in use are the ring, Gellhorn, and the donut pessary. What specific defects are most improved by mechanical devices is a question for which there is no clear data on which to make clinical recommendations. Table 1 reports the pessary choices of a survey of members of the American Urogynecologic Society.

Despite the lack of evidence that any 1 pessary is best in managing a patient's symptoms, most experts would agree on some basic tenets. Anterior vaginal wall defects (cystoceles) are best managed with ring pessaries or lever pessaries (Smith-Hodge). Stage II apical (middle) compartment defects (uterine, vaginal vault, enterocele) are also well suited to management with ring pessaries. Gellhorns are best suited for stage III or stage IV uterine prolapse or vaginal vault prolapse. The donut pessary can also be helpful in managing complete uterine prolapse or vault eversion. Posterior vaginal wall defects have traditionally not been felt to be as adequately managed with pessaries. This is likely the result of the design of most pessaries, which function through either the support of the pessary resting against the pubic symphysis and anterior or apical compartment. For this reason, the donut, a

TABLE 1. Choices of Pessary by Support Defects Among Physicians Who Tailor the Pessary to the Support Defects

Physician Response	Support Defect			
	Anterior	Posterior	Apical	Procidentia
Would use pessary	89%	60%	74%	76%
First choice	Ring	Donut	Ring	Gellhorn
Second choice	Hodge	Risser	Gellhorn	Donut

space-occupying pessary, can be attempted for the relief of symptoms of a rectocele.

In addition to the specific vaginal wall defects, pelvic floor muscle strength is another factor to consider in choosing a pessary. A wide genital hiatus is generally attributable to damaged levator muscles. If the patient is unable to contract the pelvic floor, most authors generally recommend using a space-filling pessary versus a support pessary.

Also important in choosing a pessary is to consider whether a patient will be removing and reinserting the pessary at home or returning to the office for regular pessary checks. The ring's design makes it a very desirable candidate for a patient who wants to care for her pessary as a result of its ease of insertion and removal. The Gellhorn and donut, on the other hand, can be quite difficult to remove even for experienced practitioners, and for this reason, these types of pessaries are generally best cared for in an outpatient setting.

Fitting and Insertion

Fitting of pessaries requires trial and error with a goal of fitting the largest possible pessary that does not cause discomfort. It is helpful to have various types of pessaries in different sizes available in the examination room.

GENERAL PROCEDURE

The patient is first asked to empty her bladder before the fitting. A digital examination is then performed to assess both vaginal length and caliber with the patient in a dorsal lithotomy position. A small amount of water-based lubricant is then placed on the

leading edge of the pessary. Once the pessary is in place, the physician's finger should easily fit between the circumference of the pessary and the vaginal wall. With the labia separated, the patient is asked to bear down at which time some movement of the pessary will be seen. The examiner should ask the patient to sit, stand, and ambulate in the clinic and attempt to void with the pessary in place. A helpful test is to place a hat on the toilet and have the patient attempt to defecate. For many women, this type of exertion is likely to expel the pessary once she leaves the office. A successful pessary fitting is defined as 1) pessary not expelled with Valsalva or cough; and 2) patient comfortable and not aware of the pessary in the vagina with ambulation, voiding, sitting, and defecation.

Ring

As previously mentioned, the ring pessary is the most widely used pessary for management of prolapse symptoms. Its popularity, in all likelihood, is the result of its simple design, similar to a diaphragm, and its ease for insertion and fitting. Typically, the use of ring pessaries has been designated for less severe forms of uterine and vaginal vault prolapse. Likewise, most clinicians will also use rings for management of symptomatic cystoceles. The ring is available with and without support, the advantage of the support being that theoretically it prevents incarceration of the cervix. The ring is inserted by folding the device in half and pointing the arc so that it faces downward. Once inserted in the vagina, it is then oriented past the cervix into the posterior fornix and behind the pubic symphysis.

TABLE 2. Most Common Pessaries and Their Use


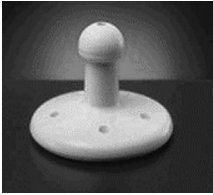
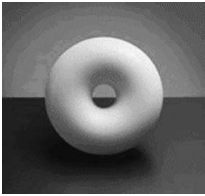
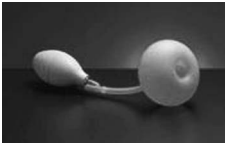
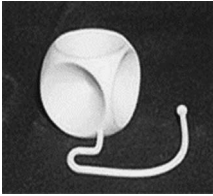
Pessary	Type	Indication	Pros	Cons
 Ring with support	Support	Mild uterine and vaginal prolapse; cystocele	Easy insertion and removal Coitus possible	Less helpful for more severe forms of prolapse
 Gellhorn	Space-filling	Uterine and vaginal prolapse	Ideal for III and IV prolapse	Difficult insertion and removal for patient Coitus not possible
 Donut	Space-filling	Uterine and vaginal prolapse	Ideal for stage III and IV prolapse	Difficult insertion and removal for patient Coitus not possible
 Inflatoball	Space-filling	Uterine and vaginal prolapse	Easy insertion	Difficult to retain
 Cube	Space-filling	Uterine and vaginal prolapse	Ideal for stage III and IV prolapse	Vaginal ulcerations Heavy discharge Frequent removal

Photo courtesy of Milex Products, Inc.

Gellhorn

The Gellhorn is typically used to manage apical and anterior moderate to severe prolapse and uterine procidentia. The concave surface of the device is designed to rest against the cervix or suctioned to the upper vagina if the

cervix is absent. The stem of the pessary points to the posterior vaginal wall adjacent to the introitus. The patient's ability to retain this device will be incumbent on the patient having an intact perineal body. To insert the Gellhorn, the labia are separated and the

device introduced in an oblique angle with some pressure exerted on the introitus. To remove the device, the stem is grasped and the suction broken by gently rocking the device side to side. Downward displacement of the perineum is helpful in removing the device. Typically, this pessary is not easy to remove and for that reason, the device is usually managed in an outpatient setting.

Donut/Inflatoball

The donut and Inflatoball are 2 space-occupying pessaries used traditionally for management of stage III and IV uterine and vaginal vault prolapse. The donut is made of a silicone, whereas the Inflatoball is made of latex and inflated once inserted in the vagina. Unlike the Gellhorn, both of these devices do not necessitate that a patient have an intact perineal body or competent levator ani muscles. The Inflatoball is similar in its shape and mechanism as compared with the donut, however, the advantage being that this device can be inflated with air once it is placed in the patient's vagina. This can be helpful in patients who generally are unable to tolerate the insertion of a donut device but otherwise do not have an intact perineal body. Because the Inflatoball is made of latex and likely to absorb odors, it needs to be removed and cleansed every 2 to 3 days. Its insertion is not unlike that of the Gellhorn in that the pessary is inserted in an oblique angle with the labia separated and pressure applied to the introitus. Its removal is best performed by placing downward pressure on the perineum and gently grasping the donut and removing it in an oblique angle.

Cube

The cube pessary is considered a space-filling device whose mechanism, in all likelihood, stems from the suction it creates through the concave walls it has along the 6 sides of the cube. Although effective in managing stage III and IV uterine and vaginal prolapse, it is associated with increased risk of vaginal ulcerations and heavy vaginal

discharge. For this reason, this pessary is generally more closely monitored in an outpatient setting because most patients cannot remove the device on their own. Patients may need to be seen every 4 to 6 weeks to inspect for ulcerations and to remove and clean the pessary to prevent bothersome discharge. Using a cube with fenestrations may decrease ulcerations and discharge. The discharge associated with a cube is generally secondary to desquamation and does not need antibiotic treatment. The device is inserted by pressing together 2 sides of the cube and advancing it to the most posterior and apical portion of the vagina. The removal of the device is best accomplished by breaking the suction between the device and the vaginal walls, and once this is accomplished, the walls of the cube are collapsed and gently removed.

Other Available Pessaries for Prolapse

In addition to the aforementioned pessaries, other pessaries are available but are less commonly used for the management of prolapse. The Gehrung pessary is a manually shapeable pessary with a design resembling a folded shelf. The manufacturer recommends its use in patients with cystoceles and/or rectoceles. The Shaatz pessary resembles the Gellhorn pessary but lacks the central stem. It is used for uterine and vaginal vault prolapse. Lastly, the Tandem-Cube is used for patients with stage III prolapse or uterine procidentia when a single cube provides inadequate support. See Figure 1 for currently available pessaries.

Follow Up and Management

Current recommendations regarding follow up and management of pessaries for pelvic organ prolapse are largely based on expert opinion and case series. A prospective study sought to evaluate a more simple protocol because the authors of this study speculated that reluctance to use pessaries stems from these devices being perceived as inconvenient for physicians and patients.¹⁵ They



FIGURE 1. Various types of pessaries: (A) ring, (B) Shaatz, (C) Gellhorn, (D) Gellhorn, (E) ring with support, (F) Gellhorn, (G) Risser, (H) Smith, (I) tandem cube, (J) cube, (K) Hodge with knob, (L) Hodge, (M) Gehrung, (N) incontinence dish with support, (O) donut, (P) incontinence ring, (Q) incontinence dish, (R) Hodge with support, and (S) Inflatoball (latex). Photo courtesy of Milex Products, Inc.

recommended that patients, at their initial fitting, be educated or given written materials on the possible symptoms and problems that may arise with the device (Table 3). Patients who report or anticipate difficulty removing the device can be taught to tie either dental floss or monofilament suture to the pessary to help with its removal.

TABLE 3. Possible Symptoms and Problems That May Arise With the Device

- Urinary incontinence
- Slower urine stream
- Difficulty with defecation
- Discharge
- Feeling of shifting of pessary
- Spotting or bleeding
- Spontaneous expulsion

In this study protocol, after the initial fitting, patients were asked to come back in 1 to 2 weeks to assess patient satisfaction, possibly refit the patient with a more comfortable pessary, or to further educate on self-care of the device. Specifically, it is important, at this first follow-up visit, to discuss comfort, voiding, defecation, discharge, and ease of care for the patient. In the first year, patients were asked to follow up every 3 months and every 6 months thereafter. At every follow-up visit, the pessary was removed, cleansed with water, and speculum examination performed to evaluate for abrasions and erosions. No serious complications were observed in this study sample.

Complications and Contraindications

Pessary complications are rare occurrences in medically compliant patients. The most common complications are pessary expulsion, urinary incontinence, and rectal pain, depending on the type of pessary. A commonly experienced symptom of pessary use is vaginal discharge. A study comparing pessary users with nonusers found that the presence of a foreign body increased the risk for bacterial vaginosis by 4-fold.¹⁸ If the patient is symptomatic, bacterial vaginosis may be treated, but vaginal cultures are not recommended. Vaginal estrogen is generally recommended to patients who, at the time of their initial fitting or at subsequent follow up, are noted to have vaginal atrophy or areas ulceration or abrasions from pessary use. Typically, if ulceration occurs, the pessary is left out and the patient is advised to use intravaginal estrogen cream daily (0.5–1.0 g/d) for 2 to 3 weeks. At follow up, if the ulcerations have healed, the pessary can be replaced, and it is recommended that the patient continue to use the vaginal cream 2 to 3 times per week. If ulcerations recur, despite estrogen therapy, it may be best to discontinue pessary management and consider biopsy of the site.

More serious complications associated with pessary use are generally attributable to a neglected device. Pessaries may become impacted. This is more commonly seen with space-filling pessaries such as the Gellhorn and cube pessary. These pessaries are more likely to cause vaginal erosions. Applying estrogen cream to an impacted pessary will generally aid in its removal.¹⁹ However, an impacted pessary can require surgical removal. Other less common serious complications have been described in case reports. These include incarceration of the cervix, small bowel prolapse and incarceration, vesicovaginal fistula, and urosepsis. Generally speaking, what these reports all share in common is that the patient had not been examined by a physician for several years. This highlights the importance of evaluating patient compliance in the initial evaluation. Patients at risk for poor follow up should be considered poor candidates for pessary management.

Evidence for Pessary Use (Cochrane)

In 2004, 2 Cochrane Database Systematic Reviews were performed on the topics of “Mechanical Devices for Pelvic Organ Prolapse in Women” and “Conservative Management of Pelvic Organ Prolapse in Women.”^{26,27} The review of mechanical devices concluded that “currently there is no evidence from randomized controlled trials (RTC) upon which to base treatment of women with pelvic organ prolapse through the use of mechanical devices/pessaries.” Likewise, the review of conservative management came to a similar conclusion that there was no evidence from RTC regarding conservative interventions in the management of pelvic organ prolapse.

The conservative management review reported that evaluating the effectiveness of pelvic floor muscle training (PFMT) in treating pelvic prolapse is the most pressing research need, in that it is a costly management option. A feasibility study is currently

underway that has an ultimate goal of progressing to a multicenter randomized trial (Pelvic Organ Prolapse Physiotherapy [POPPY]).²⁸ Two other randomized studies were identified by the Cochrane database that evaluated the effectiveness of PFMT in conjunction with surgery for symptomatic prolapse. One of the studies continues to recruit patients,²⁰ and the other has been completed and awaiting publication.²¹

Physiotherapy/Pelvic Muscle Training

One of the first descriptions of physiotherapy for restoring the function of the pelvic floor was reported by Arnold Kegel in his landmark article in 1948.²² Stimulated by intense investigations and experiences in World War II with muscle function and recovery, he developed an exercise regimen for recovery in the immediate postpartum period. However, he speculated on the benefit of “active exercise” for both the prevention of pelvic organ prolapse and its added effect in improving surgical outcomes after surgical correction of pelvic prolapse. Since that time, pelvic muscle training (PMT) had been advocated for the treatment of stress urinary incontinence, pelvic organ prolapse, pelvic pain, and defecatory dysfunction. This section discusses evaluation for the appropriateness of PMT, program regimens, and techniques for teaching PMT. Lifestyle modifications and behavior therapy are briefly discussed. Lastly, this section includes recent publications on the use of PMT and pelvic organ prolapse.

EVALUATION FOR PELVIC MUSCLE TRAINING

To evaluate the appropriateness of PMT for a woman, muscular strength, duration of contraction, and extent of displacement of the examining fingers is assessed. Although not standardized, a scale commonly used to assess pelvic floor strength is shown in Table 4.

A woman's ability to sustain a pelvic contraction a minimum of 2 seconds is likely to ensure a better response to physiotherapy.

TABLE 4. Five-Point Rating Scale

Grade	Description
0	No contraction
1	Flicker, only with muscles stretched
2	A weak squeeze, 2-second hold
3	A fair squeeze with definite "lift" (in which the contraction can be felt to move in an upward direction)
4	A good squeeze, good hold with lift (the contraction must be able to be repeated a few times)
5	A strong squeeze, good lift, repeatable

Modified from Sampsel 1990.

Displacement of the examiner's finger in an inward and upward direction into the vagina is also a physical finding likely to be associated with normal structural attachments of the pelvic muscles as well as intact sensory and motor innervations. A patient who on repeat attempts is unable to perform a 1/5 muscle contraction is likely a poor candidate for PMT and requires more intensive pelvic floor therapy such as transvaginal electrical stimulation therapy.

TEACHING PELVIC MUSCLE EXERCISE

Essential to the success of a program of PMT is to assess the patient's motivation in partaking in an exercise regimen because a minimum of 6 to 8 weeks of therapy will be necessary before improvement can be realized. Patients should be educated that pelvic muscle exercises are like other striated muscles of the body that can be trained. A multidiscipline approach will best tailor a patient's needs in achieving their therapy goals.

Assisting women in isolating the target muscles is the most important task in teaching pelvic muscle exercise (popularly known as Kegels). Approximately 19% to 31% of women who believe they to perform Kegels actually perform them correctly.²³ Teaching women to isolate these muscles successfully can be done at the time of a pelvic examination. The patient is asked to contract her muscles around the examiner's

fingers while the examiner takes note of whether the patient is using auxiliary muscles (abdomen, gluteals, or thighs). A common mistake is that women will bear down when asked to perform a pelvic muscle contraction. Women will initially contract the outermost layer of the pelvic floor (bulbocavernosus and ischiocavernosus muscles) at which time they should be instructed to contract muscles at higher levels (levator ani). Patient should attempt this contraction multiple times, and once this is achieved, attempt to hold a contraction for 10 seconds. Patients who are having trouble isolating pelvic floor muscle might benefit from the care provider applying pressure on these muscles, being instructed on relaxing auxiliary muscles or using a set of weighted cones as an exercise aid.²⁴ A visual guide of the muscle layers involved in performing effective pelvic muscle contractions may be useful (Fig. 2). for some women to further understand the importance of contracting all the various layers of the pelvic floor muscles. Some women might also find it useful to use imagery in performing these exercises. The image is of the vagina pulling in and up toward the sacrum (like an elevator or cable car).

PELVIC MUSCLE EXERCISE REGIMENS

Various protocols are currently available; however, most experts would agree that 2 components are crucial to success with PMT: 1) devoting a particular time to exercise, and 2) gradually increasing the amount or intensity of the exercise. This contradicts the generally held belief that women can perform Kegels anywhere and anytime. Initial recommendations proposed 30 to 80 pelvic muscle contractions per day. More recent protocols recommend a frequency of 30 per day with a greater emphasis on increasing the strength and intensity of the contraction.

PATIENT EDUCATION AND LIFESTYLE MODIFICATIONS

Patients with pelvic prolapse should be counseled on the importance of various

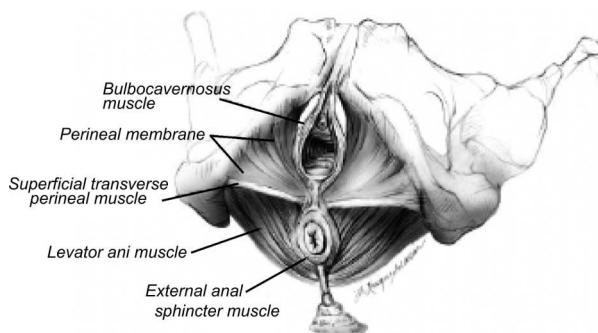


FIGURE 2. Pelvic floor muscle anatomy.

lifestyle modifications that may prevent or improve their symptoms of prolapse. Maintaining an ideal body weight limits the pressure that the abdominal content places on the pelvic floor. Any activity such as walking or gardening that engages the pelvic floor can help strengthen the muscles. Patients should be counseled to squeeze or perform a Kegel contraction when lifting or straining. Physical therapists also recommend discussing bowel habits with patients because bowel movement retraining will teach a passing motion without straining the pelvic floor muscles. Advising women on correct posture will in aid in preventing strain on the pelvic floor muscles. In addition to pessary and physiotherapy management, women should be educated on using tight undergarments to help support and relieve symptoms of prolapse.

RECENT STUDIES ON EFFICACY OF PHYSIOTHERAPY

As previously mentioned, few studies have been published that evaluate and report on the effectiveness of physiotherapy in the management of pelvic organ prolapse. Our review of the literature found one study evaluating the efficacy of PMT and prolapse. This study is a cross-sectional study of 682 elderly women (aged ≥ 60 years) from Thailand.²⁵ The aim of the study was to determine the prevalence of genital prolapse and the effectiveness of pelvic floor exercise in preventing worsening of genital prolapse

in elderly women. Patients in the experimental group ($n = 330$) received training on pelvic floor exercises and were asked to perform 30 exercises after each meal. The prevalence of genital prolapse was 70%, and this elevated prevalence was felt to be the result of the increased risk factors of high parity and no perineal repair after delivery. Comparing mild genital prolapse between the controls and cases at the initial assessment and at 24 months, there was no statistical difference ($P = 0.111$). However, on comparing severe genital prolapse, there was a difference between the initial assessment and the 24-month follow up. There was no statistical difference at 1-year follow up. The authors speculated that a year of pelvic floor exercise might be insufficient time to see improvements in genital prolapse. They concluded that 24 months of pelvic floor exercise program was effective to prevent worsening of genital prolapse in the women who had severe genital prolapse.

Hopefully, future studies will address research questions such as what type of training program is most beneficial, ie, is coordination more important than strength for prolapse? If a certain level of strength is required, what type of training regimen is best? Is the same model shown to be effective for stress incontinence or different?

Conclusion

Recent studies confirm that pessary use for the management of pelvic organ prolapse

is very effective in alleviating symptoms and patient satisfaction is relatively high. Choosing a pessary type continues to be at the discretion of the physician. The evidence as to which pessaries are most effective in relieving symptoms associated with specific defects is a clinical question that remains to be answered.

The role of physiotherapy in the management of pelvic organ prolapse still is in its infancy of development. Because the pelvic floor muscles contribute significantly to support, it would seem logical that improving muscle strength would improve support. Yet much work is needed to evaluate this theory. Specifically, the role of pelvic muscle rehabilitation in conjunction with reconstructive surgery is much needed information.

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