Pessary Care: Follow Up and Management of Complications

Katharine O’Dell and Shanna Atnip

Even after a successful pessary fitting, a woman’s level of satisfaction and duration of pessary use are difficult to predict. In one qualitative study, successful pessary use was described by participants as a learning process, leading to increasing comfort and confidence (Storey, Ashton, Price, Irving, & Hemmens, 2009). Women initially reported feelings of isolation and embarrassment about pessary use. However, through encouraging interactions with providers, most commonly the office nursing staff, positive attitudes toward wearing a pessary developed during follow up, and visits became anticipated social outings for several users (Storey et al, 2009).

The first article in this series (Atnip & O’Dell, 2012) discussed clinical issues related to initiating support pessary use, including a summary of evidence related to patient and pessary selection, and the likelihood of symptom relief. This article summarizes evidence related to pessary use, follow up, and complications; describes current recommendations for clinical practice where data are not available; and identifies potential areas for future research.

Objectives:
1. Describe complications that may arise in women who use pessaries.
2. Explain the course of pessary follow up, including instructions, intervals between office visits, and pessary surveillance.
3. Discuss pessary management and prevention of pessary-related complications.

Duration of Pessary Use

Because women use pessaries for different reasons (for example, to totally avoid or defer surgery), duration of pessary use can be expected to vary. Reported use continuation rates range from 56% to 70% in up to three years of follow up (Clemons, Aguilar, Sokol, Jackson, & Myers, 2004; Komesu et al., 2007). One long-term follow-up study concluded that women are more likely to...
continue pessary use if they are over 65 years or have comorbidities that increase surgical risk (Clemons, Aguilar, Sokol et al., 2004). In a case series of women seeing a single provider in Australia (n = 273), 60% continued pessary use for four weeks, while 14% were continuing users over an average follow up of seven years (range: 2 to 14 years) (Sarma, Ying, & Moore, 2009). During their period of follow up, 44% of initial pessary users opted to return to no intervention, and 30% proceeded to surgery. These findings confirm that some, though not all, women can expect to experience an extended period of satisfactory pessary use.

Potential Complications During Pessary Use

The importance of on-going, regular re-evaluation, even for women who are comfortable and asymptomatic during pessary use, must be emphasized to all providers and users. Because there is no centralized reporting option, true pessary complication incidence is not known. In the 14-year follow-up of Australian Ring pessary users, 56% reportedly had some type of complication, including genital bleeding, involuntary pessary expulsion, unusual vaginal discharge, pain, and constipation (Sarma et al., 2009). Unfortunately, this study design does not help women compare risks of pessary use with risks of untreated prolapse.

While mild and/or transient symptoms appear to be fairly common during pessary use, rare serious adverse effects can also occur, particularly if pessary care is neglected. In a review of individual case studies published between 1950 and 2007, serious adverse events related to pessary use included vesicovaginal and rectovaginal fistulas, impaction or entrapment of the pessary requiring surgical removal, bowel perforation and sepsis, and uremia, urosepsis, and/or kidney damage due to infection and/or obstruction (Arias, Ridgeway, & Barber, 2008).

Although these cases represent severe morbidity and occasional mortality, only 39 of these major complications were reported during a period of more than 50 years. Most cases occurred in women with neglected or forgotten pessaries, though two cases of vesicovaginal fistula occurred in older adult women who were obtaining regular care. The first was discovered two hours after initial insertion of a Ring pessary, suggesting a possible pre-existing, unidentified vaginal wall abnormality. The second occurred in a woman using a Gehring (arch) pessary over a 12-year period. During that time, she reportedly performed daily self-removal, cleaning, and re-insertion, and attended regular follow-up visits. The latter case reminds providers and pessary-users that occasional serious complications may occur even with the most diligent care.

Finally, in a recent case report, an 82-year-old woman experienced vaginal evisceration during initial fitting, causing displacement of the pessary into the abdomen, with resultant emergency colpocleisis (Rubin, Jones, & Harmanli, 2010). While the scarcity of reports suggests an overall low-risk of serious pessary complications, these publications highlight the need for careful assessment prior to pessary placement at each routine visit and whenever new symptoms occur.

Pessary Follow Up

While it seems clear that regular pessary follow up is important, both appropriate intervals for follow-up and interim self-care recommendations continue to be largely based on expert opinion (Cundiff, Weidner, Visco, Bump, & Addison, 2000; Gorti, Hudelist, & Simons, 2009; Pott-Grinstein & Newcomer, 2001). The following sections discuss common self-care and provider care options.

Initial Instructions

New pessary users are generally instructed to note improvement in symptoms and report new problems, such as pain or discomfort, genital bleeding, abnormal vaginal discharge, sexual problems, and problems with elimination of urine or stool (Atnip, 2009). Optimal intervals for self-care have not been determined, and recommendations vary. For example, one pessary manufacturer’s packet instruction states that in ideal circumstances, users should be taught to remove all styles of pessary nightly for cleaning and reinsertion (CooperSurgical, 2008). Optional daily removal and cleaning are encouraged during the use of some pessaries, and referred to as mandatory during use of latex inflatable and Cube pessaries, the latter without reference to the presence or absence of drainage holes.

For the newer silicone inflatable pessary, manufacturer recommendations suggest removal for cleansing every day or two (Panpac Medical Corporation, 2010). When pessaries are removed, they can be washed with soap and water, rinsed thoroughly, and re-inserted, or stored for future use. While providers may offer women optional teaching related to self-removal and reinsertion, some may not be either able or willing to perform self-care (Sarma et al., 2009).

In addition, women initiating pessary use are likely to have many questions related to how pessary use may affect their lifestyle and activities. Some answers will require experience. For example, women who are of reproductive age may need to experiment to identify their preference for management of their
menses, either by pessary removal through the entire menses, or by more frequent removal and reinsertion after cleaning. As noted in the first article of this series (Attnip & O’Dell, 2012), some pessaries, such as the Ring, are expected to be more compatible with use during intercourse; however, couples’ preferences may vary. Well-fit pessaries are expected to allow women to perform a full range of physical activities and exercise comfortably, but experience may identify extreme activities that are not pessary-compatible for an individual. Women may also express concern about pessary use during medical testing, such as colonoscopy and diagnostic imaging. Because preferences may vary, women may be best advised to query the provider performing the endoscopic procedure or imaging regarding the need for pessary removal.

Women planning Magnetic Resonance Imaging can usually be reassured that silicone pessaries do not include metal; however, confirmation of this should be sought through the pessary manufacturer. Finally, women often have questions about the implication of pessary use for security surveillance. While metal detectors will not respond to silicone-only pessaries, newer surveillance technologies, including full-body scanning, are likely to identify a pessary in place. Although the utility is unclear, some clinicians provide women with confirmation of pessary use via brochure, written prescription, or form letter on practice letterhead to help preclude potential delay or embarrassment (Bradway, 2011). Table 1 presents additional provider-generated self-care options for women who use pessaries.

**Intervals Between Office Follow Up**

Regardless of the follow-up plan, if pessary users report warning symptoms between regular return visits, they will need to be triaged to emergent or urgent care related to the severity of symptoms. Triage options have not been well studied. Clinical judgment related to symptom severity must be used with pain, bleeding, and acute retention of urine or stool likely to be reasons for emergent care.

Recommendations for appropriate routine intervals for follow up of women reporting comfortable, effective pessary use also vary, typically based on expert opinion. For example, one manufacturer’s product insert for a variety of pessary types instructs providers to require women to return within 24 hours of initial fitting, again in 72 hours, and every few months, with schedule variations based on clinical judgment (Cooper Surgical, 2008). Another manufacturer’s package insert for the Inflatable Donut pessary also provides a mix of very specific recommendations (for example, the device can only be prescribed by a physician, and fitting should be followed within 24 to 48 hours to rule out allergy to the product) with instructions that are more vague (for example, subsequent follow-up visits can be planned to fit the needs of the patient) (Panpac Medical Corporation, 2010). This review of manufacturer concerns suggests that allergic reactions to pessaries may have occurred, and inclusion of the risk may be needed in informed consent discussions, even though cases have not appeared in the medical literature.

When providers make follow-up decisions that deviate from manufacturers’ recommendations, decisions should be based on available evidence. However, there is a dearth of interval comparison trials. In observational follow up, 104 women were successfully fitted with Ring pessaries with or without support membrane, and six with Cube pessaries, with the presence or absence of drainage holes not reported (Wu, Farrell, Baskett, & Flowerdew, 1997). These women were followed initially at two weeks post-fitting, then every three months for the first year, and every six months thereafter in the absence of erosion. The authors concluded that
participants had no serious complications, although 15 women developed vaginal abrasions (all using Ring pessaries), eight developed vaginal erosions (five with Cube pessaries and three with Rings, \( p < 0.001 \)), and 10 reported pelvic pain (three Cube-users and seven Ring-users). Complication management was not addressed in the Wu et al. (1997) publication.

In a subsequent survey of pessary providers, the most common follow-up interval pattern was one week, one month, and every three months thereafter, with no variation specified related to type of pessary (Pott, Grinstein & Newcomer, 2001). Standard practice recommendations are also published as incidental elements of broader discussions. One case discussion suggests office-visit intervals varying from three to six months, with closer intervals for pessaries that are self-retaining or lack drainage holes (Kaaki & Mahajan, 2007). Responding to a survey in the United Kingdom, providers also reported intervals between pessary visits ranging from 3 to 12 months with low complication rates, although patient characteristics, self-care practice, and pessary type were not ascertained (Gorti et al., 2009). These reports support the practice of longer intervals between pessary removal and cleaning as safe, standard, and cost-effective care.

**Pessary Surveillance**

In the absence of a definitive evidence base comparing surveillance practices, standards of care at pessary return visits also rely on expert opinion. These visits generally include some combination of focused history, pessary removal and cleaning, and vaginal inspection, with or without irrigation or topical treatment (Atnip, 2009). Components of a typical interim-focused history are listed in Table 2.

Removal techniques also remain unstudied. Suggestions to aid difficult removals include tenaculum or Ring forceps, pessary removers, or dental floss tied to the pessary as a loop prior to insertion. Tips for removal of different shapes of pessaries are summarized in Table 3.

Once the pessary has been removed, an appropriately sized vaginal speculum is used to aid careful inspection of the vaginal epithelium for mechanical irritation (Kaaki & Mahajan, 2007). A proctology swab or other displacement device can be used to increase visualization of cervical fornices or the vaginal apex (see Figure 1). Following complete hysterectomy, the vaginal apex may be as thin as 2 to 4 mm (Tulikangas, Walters, Brainard, & Weber, 2001), increasing the risk of life-threatening erosion into the peritoneum. Careful manipulation of any folds of redundant vaginal tissue, especially of areas that may be more difficult to visualize in standard lithotomy or semi-Fowler’s position (including the anterior vaginal wall, cervical fornices, or vaginal cuff post-hysterectomy) is important for identifying mechanical injury of the vaginal epithelium. Typical areas of injury that may result from different styles of pessary are illustrated in Figure 2.

Vaginal cleansing at pessary follow-up visits or during routine self-care is not universally performed, and there is currently no evidence to support routine irrigation. If excessive discharge is observed in the absence of identifiable pathogens, the vagina can be cleansed in a variety of ways. One cleansing option is wiping of the vagina with a proctology swab moistened with water, saline, vaginal water-based lubricant, or a mild antiseptic solution prepared with diluted povidone-iodine or chlorhexidine gluconate. Similar solutions may also be used for vaginal lavage using a 10 to 60 cc syringe with size choice based on clinical determination of vaginal diameter (Atnip, 2009). Lavage

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**Table 2. Components of a Return Pessary Visit**

<table>
<thead>
<tr>
<th>Focused History of Interim Changes in Systemic and Pelvic Status</th>
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<tbody>
<tr>
<td>• Lower urinary tract symptoms</td>
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<td>• Bowel status</td>
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<tr>
<td>• Abnormal discharge/bleeding/odor</td>
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<tr>
<td>• Pelvic pressure/pain</td>
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<tr>
<td>• Vaginal bulge beyond pessary</td>
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<td>• Sexuality issues</td>
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<td>• Current self-care regimen</td>
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<tr>
<td>• Medication changes</td>
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<td>• Social changes (caregiver status, employment, exercise or weight management regimens, new sexual partner)</td>
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<th>Targeted Physical Examination</th>
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<td>• Regional lymphadenopathy or rashes</td>
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<td>• Abdominal tenderness or masses</td>
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<td>• External genital examination</td>
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<th>Routine Pessary Care</th>
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<tr>
<td>• Pessary removal and cleaning</td>
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<tr>
<td>• Inspection for vaginal or cervical irritation or erosion</td>
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<tr>
<td>• Replacement of stained or damaged pessary</td>
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<th>Other Components Based on Findings</th>
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<tr>
<td>• Vaginal microscopy (irritation, increased discharge or odor)</td>
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<tr>
<td>• Vaginal irrigation (suspected vaginitis)</td>
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<tr>
<td>• Urinalysis (dysuria, change in continence status)</td>
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fluid can be contained using waterproof pads, toweling, and/or a collection vessel, such as an emesis basin.

Clinicians should take care if vaginal cleansing products are used. Both chlorhexidine and povidone-iodine have been studied for pre-operative and obstetric vaginal use in attempts to decrease wound infection. While chlorhexidine (4%) has been identified as more effective than povidone-iodine (10%) in reducing vaginal wall bacteria within five minutes (Vorherr, Vorherr, Mehta, Ulrich, & Messer, 1984), this may not translate to decreased infection risk (Webster & Osborne, 2007), is off-label use (Van Wicklin, 2006), and may result in significant irritation, including acute desquamation of the vaginal epithelium (Shippey & Malan, 2004). To avoid this risk, providers may prefer to perform any pessary-related vaginal cleansing with simple saline or water and treat identified microbial infections as discussed below.

**Prevention of Pessary-Related Complications**

Although providers often advise routine use of vaginal products in conjunction with pessary use, the relative costs, preventive role, and comparative outcomes of these products have not been well-studied. Current evidence related to the role of three strategies is summarized below, including topical estrogen treatment of urogenital atrophy, vaginal moisturizers, and vaginal acidification.

**Vaginal Estrogens**

Urogenital atrophy due to low estrogen levels results in thinning of the epithelial lining, loss of elasticity, contraction of the introitus, and dryness due to decreased vascularity and transudate (Freedman, 2008). Factors that contribute to urogenital atrophy include post-menopausal status, smoking (which increases...
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Estrogen metabolism, and use of certain medications and breast cancer treatments, such as some selective estrogen receptor modulators (Al-Baghdadi & Ewies, 2009). Atrophic changes can result in increased discomfort or tissue injury with pessary insertion and removal, and have been associated with higher rates of mechanical vaginal erosion during pessary use (Arias et al., 2008). It may be possible to modify problems related to pessary use in the presence of vaginal atrophy by modifying reversible risks (such as through smoking cessation). In the absence of comparative evidence, provider prescription of vaginal estrogen continues to vary and includes use prior to initial pessary fitting as needed during ongoing pessary follow up and/or continuously throughout pessary use (Arias et al., 2008; Sarma et al., 2009).

Estrogens used vaginally are more effective than systemic estrogens in relieving symptoms of urogenital atrophy (North American Menopause Society [NAMS], 2010). Vaginally applied estrogen relieves vulvovaginal symptoms by promoting epithelial cell growth and cellular maturation, fostering re-colonization with normal lactobacilli, enhancing vaginal blood flow, decreasing vaginal pH to premenopausal levels, increasing vaginal wall thickness and elasticity, and improving sexual response (Freedman, 2008).

Several options for low-dose or ultra-low-dose vaginal estrogen therapy are available and listed in Table 4. It is important for women to understand that estrogens used vaginally do not offer the same risks and benefits as systemic hormone therapy. For example, while topical estrogen use can improve dyspareunia, recurrent urinary tract infection (UTI), and urinary urgency, low doses do not improve vasomotor symptoms or osteoporosis, or affect breast cancer risk (NAMS, 2010).

Table 4.
Options Approved by the FDA for Treatment of Moderate to Severe Vaginal Atrophy Using Vaginally Placed Estrogen

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<tr>
<th>Generic Estrogen (Trade Name)*</th>
<th>Dose*</th>
<th>Use Instructions</th>
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| Estradiol (Estrace®)          | 0.1 mg/gram | Use measured applicator.  
Initial: 2 to 4 grams daily for 1 to 2 weeks. Gradually reduce to 1 to 2 grams for 1 to 2 weeks.  
Maintenance: 1 gram one to three times a week; adjust dose as needed to control symptoms.  
Note: Attempt to taper or discontinue at 3 to 6 month intervals. |
| Conjugated equine estrogen (Premarin®) | 0.625 mg/gram | Initial: 0.5 gram daily for 21 days; off for 7 days. May increase to 2 grams based on clinical response.  
For dyspareunia: 0.5 grams twice a week continuously. |
| Estradiol (Vagifem®)          | 10 mcg | Insert to upper vagina using applicator.  
Initial: Once daily for 2 weeks.  
Maintenance: Twice weekly.  
Adjust dose as needed to control symptoms, attempt to taper or discontinue periodically. |
| Estradiol (Estring®)          | 0.0075 mg/24 hours | Insert into the upper third of the vagina for 90 days, then remove.  
Replace for additional therapy; attempt to taper or discontinue at 3 to 6 month intervals. |

In addition, concomitant use of progestogens is not required for endometrial protection in women with intact uteri, although surveillance to confirm this recommendation during intermittent use or for use longer than 12 months is still not available (NAMS, 2010).

Although biodioidentical hor- mones (those that are chemically identical to ovarian estrogens) are increasingly marketed, there is no evidence to support claims of their enhanced safety or efficacy (NAMS, 2010).

Generally, the lowest effective estrogen dose needed to decrease symptoms is recom- mended (NAMS, 2010). One new option, an ultra-low-dose vaginal tablet containing 10 micrograms of estrogen, has been shown to result in serum estradiol levels that are 50% lower than prior 25 microgram vaginal tablets (Eugster-Hausmann, Waitsinger, & Lehnick, 2010). However, because ultra-low-dose products have not been tested in pessary users, it is not yet clear if they provide sufficient estrogenic effect to improve comfort or decrease complications during pessary use, or what the optimum dose interval and duration will be.

Vaginal Acidification

The normal vaginal pH in women who are of reproductive age is typically 3.5 to 4.5 but rises to greater than 4.5 within 12 months of becoming hypoestro- genic (Freedman, 2008). This alkaline environment is thought to be a risk factor for atypical bacterial overgrowth. Some women report increased discharge or odor during pessary use, and acidification of the vagina has been suggested as a potential deterrent or remedy. One pessary manufactur- er includes an acidifying gel for use with all their pessaries (CooperSurgical, 2006). While some pessary users report a positive clinical response to vaginal acidification, there appears to be little data to support a universal recommendation. In woman of reproductive age, vaginal acidifica- tion has not been shown to decrease the risk of pathogenic bacterial overgrowth (Holley, Richter, Varner, Pair, & Schwabek, 2004). Outcomes related to vaginal acidification in post- menopausal women are even less well studied.

When vaginal acidification is part of the follow-up plan, two options include douching with vinegar and water, and using an acidifying gel. Generally, vaginal douching remains contra-indicated in pre-menopausal women because of concerns of altered vaginal flora and increased risk of vaginal and upper genital tract infections (Cottrell, 2010). These concerns may have little applica- tion to post-menopausal pessary users with atrophy-related absence of normal vaginal flora, or to women who have undergone hysterectomy and/or bilateral salpingo-oophorectomy. In those cases, clinicians may be best advised to review potential risks and benefits, allow women to make their own choice and help them evaluate their individual symptom outcomes during subsequent visits. If douching is chosen because optimal solutions, intervals, and outcome expectations are understudied, specific practice is based on expert opinion and preferences of the individual pessary user. One suggest- ed option involves weekly use of a solution of one-fourth cup of vinegar mixed in one cup of warm water (Atip, 2009).

A non-prescription acidifying gel recommended to pessary users contains triethanolamine, hydroxy- quinolone sulfate, and sodium lauryl sulfate in a glycerin base (Trimosan™) (CooperSurgical, 2006). It is recommended for use two to three times per week, reportedly to adjust and maintain a vaginal pH of 4.0, and lubricate the vaginal walls, reducing odor- causing bacteria (CooperSurgical, 2008). While no specific support- ive references are provided, the pessary manufacturer describes the product as non-perfumed, and compatible with latex and silicone pessaries. The gel appears to be a low-risk interven- tion, which may improve tempo- rary lubrication, comfort, and pessary satisfaction for sympto- matic women who prefer a non- hormonal choice.

Vaginal Moisturizers

Vaginal moisturizers have also not been widely studied with pessary use but offer another over- the-counter option to counter-act symptoms associated with atro- phic vaginal changes. Unlike more temporary vaginal lubricants, they affect epithelial cells directly. For example, some mois- turizers contain the negatively charged bioadhesive polymer, polycarbophil (Fiorilli, Molteni, & Milani, 2005). This polymer has both acidifying and water-carrying qualities, and adheres to the superficial cells of the vaginal epithelial tissue until they are normally shed in two to three days. This adherence is thought to temporarily increase intracel- lular electrolyte and water vol- ume, and may have a vasodilating effect, increasing blood flow. Polycarbophil products have been shown to lower vaginal pH, improving signs of bacterial over- growth seen with bacterial vagin- osis (Fiorilli et al., 2005; Wu, Fielding, & Fiscella, 2007). On the other hand, non-polymer-based moisturizers, such as those with a pectin base, may offer similar temporary symptom relief (Caswell & Kane, 2002). In comparison tri- als with estrogen-products, poly- carbophil-based moisturizers pro- vided only transient symptom improvement, and did not pro- vide the sustained subjective and objective changes seen with the use of vaginal estrogen products (Biglia et al., 2010). With regular use, vaginal moisturizers may limit vaginal discharge, odor, and dyspareunia for pessary users, but are unlikely to prevent ongo- ing atrophic change or associated mechanical irritation and ero-
sion. Pending conclusive data, helping women extrapolate research results such as these may also help them evaluate the costs and benefits of various self-care products.

**Management of Pessary Complications**

Complications can occur even in women who initially report satisfactory pessary-related symptom relief and comfort. Problems may present as genital bleeding, unusual vaginal discharge, pain or pressure, and/or defecatory complaints, or may only be identified on routine vaginal examination (Sarma et al., 2009; Wu et al., 1997). Some pelvic symptoms, including constipation, urinary frequency, dysuria due to UTI, and incomplete or difficult bladder emptying, are also common in postmenopausal women without pessaries, and the relative rate of symptoms in users and non-users is not well studied. Although management of these common problems is beyond the scope of this article, when they occur in pessary users, the pessary’s potential role as an aggravating or mitigating factor should be carefully evaluated. In addition, all clinicians providing pessary care must consider their own knowledge base and scope of practice, the resources available in their office setting, and the general health or frailty of each pessary user in deciding which complications to manage and which to refer to specialty care.

Generally, when clinical assessment of any complication suggests pessary use as an etiology, management options include refitting for pessary size and shape, temporary or permanent removal of the pessary, treatment of any active infection, and/or modifying the vaginal environment with acidifying products or vaginal estrogen. Table 5 describes general clinical suggestions for common pessary-related problems. Management of two common pessary-related problems – mechanical injury of the vaginal epithelium and abnormal discharge – is presented in greater depth below.

### Mechanical Injury of the Vaginal Epithelium

Vaginal inspection at regular visits detects early signs of significant mechanical injury, allowing for alterations in the clinical plan to avoid serious sequelae, such as fistula formation. To determine which women were at higher risk of mechanical epithelial injury, Wu and colleagues (1997) assigned study participants to visually determine categories using assessment criteria not extrapolated in the text. Women were described as having epithelium that was normal thickness \((n = 14)\), moderate thickness \((n = 28)\), or atrophic \((n = 33)\). Atrophic tissue was more likely to develop epithelial abrasion when compared to the other two groups \((\text{range} = 0\% \text{ to} 18\%; \ p \leq 0.05)\), and abrasion occurrence was more common in Cube versus Ring pessary users \((83\% \text{ versus} 3\%, \ p \leq 0.001)\). There was no correlation related to oral estrogen use. These findings support current recommendations for more frequent return visits for users of self-retaining pessaries (such as Cubes) and for the use of vaginal estrogens for treatment of atrophy.

### Table 5. Clinical Management Options for Common Pessary-Related Problems

<table>
<thead>
<tr>
<th>Symptom or Sign</th>
<th>Management Options</th>
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<tbody>
<tr>
<td>Increased pelvic pressure, pain, or obstruction of elimination (urine or feces)</td>
<td>Pessary removal, with re-fitting, or decision to proceed to alternate treatment (observation or surgery).</td>
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<tr>
<td>Bleeding, mechanical irritation, or erosion of the vaginal epithelium</td>
<td>Evaluate need for endometrial biopsy. Consider initiation of vaginal estrogen use if appropriate. Consider biopsy of erosions or lesions that persist despite intervention. AND Remove pessary and re-evaluate in 2 to 4 weeks. OR Remove pessary and re-fit with alternate shape or size of pessary to moderate points of pressure.</td>
</tr>
<tr>
<td>Vaginal odor or unusual discharge</td>
<td>Rule out erosion. Decrease intervals between pessary removal and cleansing. Acidify the vagina (using appropriate vaginal moisturizers or topical estrogen). Treat any identified specific vaginal infection. Consider replacing or sterilizing pessary.</td>
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related to bleeding risk, degree of atrophy and potential benefits of vaginal estrogen use, evidence of treatable infection, and risk of co-existing pathology, such as cancers of the vagina, cervix, or endometrium) (Kaaki & Mahajan, 2007; Kenton, 2003). Temporary pessary removal to eliminate mechanical pressure is often recommended (Wu et al., 1997). Typical practice then includes a recheck in two to four weeks, depending upon the extent of the epithelial injury (Atnip, 2009; Sarma et al., 2009). During that time, any exposed vaginal epithelium is typically protected from dryness and chaffing on clothing or pads. Potential treatment products, including vaginal acidifiers, moisturizers, vaginal estrogens, and/or oral or vaginal antimicrobials, are described in more depth elsewhere in this article, although their comparative effectiveness has not been studied. Once repeat vaginal inspection confirms epithelial health, a follow-up routine is re-initiated, typically including pessary re-fitting, with or without modifications in size or shape and/or ongoing use of treatments, such as vaginal estrogen.

Although temporary pessary removal can be expected to quickly relieve mechanical pressure and facilitate healing, some women experience serious, acute symptoms during pessary removal. These can include acute prolapse recurrence, pain, urinary retention, UTI, and bowel dysfunction. For these women, a trial of other options may be beneficial. For example, use of a different shape or size of pessary may alter the area of mechanical pressure enough to allow healing. Another unstudied option might be temporary use of an inflatable Donut pessary that is removed nightly. If an alternate pessary does not seem safe or practical, other options must be formulated. For example, acute urinary retention due to recurrence of anterior compartment prolapse might be mitigated through use of intermittent support of the anterior vaginal wall digitally or with a device such as a proctology swab, which can straighten the urethra and allow voiding. If this is unsuccessful, intermittent self-catheterization or temporary use of an indwelling urinary catheter may be necessary.

When erosions do not resolve within one month, biopsy is indicated because occasional cases of vaginal and cervical cancer in pessary users have been reported (Schraub et al., 1992). In addition, recurring or poorly healing mechanical injuries may make pessary use impractical, suggesting the need to re-examine benefits and risks of alternate treatments, such as surgery.

Abnormal Discharge

Typical complaints related to vaginal discharge during pessary use include changes in discharge amount, color, or odor. Some temporary increase in vaginal discharge is commonly reported by new pessary users, which may be reassuring for some women to bear. When bothersome symptoms continue, treatment planning is generally based on extrapolation of data from other contexts and on expert opinion.

Initial assessment of changes in discharge should include very careful inspection of the vaginal epithelium in its entirety, looking for mechanical injury. Vaginal pH and microscopy can be assessed, although little is known about the implications of typical changes seen in post-menopausal pessary users (Alnaif & Drutz, 2000). Vaginal culture is typically not helpful unless otherwise unidentified yeast organisms are suspected. If vaginal bleeding is present, an endometrial biopsy should be considered even when vaginal erosion is identified to rule out co-existing problems, such as endometrial hyperplasia or cancer.

Management strategies for abnormal discharge in pessary users may include a variety of options: the woman can opt for temporary or permanent removal of the pessary; pessary drainage holes can be added to limit pooling of vaginal exudate, a potential medium for growth of odor-producing micro-organisms; atrophy or vaginal infections can be treated; or acidifying products may be used (see also “Vaginal Acidification” and “Vaginal Moisturizers” sections above). If an overgrowth of yeast or bacterial pathogens is suspected, treatment options include the use of antimicrobials in regimens extrapolated generally from vaginitis treatment guidelines.

Use of antimicrobials. Comparisons of the typical vaginal microscopy findings in symptomatic and asymptomatic pessary users have not been described, and implications in clinical practice are not known. One study reported higher rates of gram stain findings consistent with bacterial vaginosis (BV) in pessary users than in controls (32% versus 10%, relative risk of developing BV 4.37, 95% confidence interval, 2.15 to 9.32) (Alnaif & Drutz, 2000). Although it is not clear whether the pessary users were symptomatic, the authors hypothesized that pessary removal 10 days pre-operatively might normalize vaginal flora and decrease risk of vaginal cuff cellulitis. There is no direct evidence that treatment of pessary users with findings consistent with BV is beneficial related to decreasing vaginal discharge symptoms, prevention of upper tract infection, or protection of vaginal epithelium from future injury.

If overgrowth of abnormal microbes, such as bacteria or yeast, is suspected from clinical signs, symptomatic relief is the treatment goal. If yeast is identified, any available over-the-counter or oral anti-fungals may be helpful. It is not known whether pes-
sary removal during treatment would improve outcomes. If bacterial infection is suspected, oral treatment options recommended in the United States include metronidazole, clindamycin, or tinidazole (Centers for Disease Control and Prevention [CDC], 2010). Recommended topical vaginal antimicrobials include creams containing clindamycin (Cleocin™) or metronidazole (Metrogel™) (CDC, 2010). Outcome studies in pessary users have not been reported. Associated options, such as pessary sterilization, replacement, or temporary removal during treatment, can be considered but have not been studied.

Areas for Future Research

As this article has illustrated, many recommendations for pessary follow-up and complication management are based on expert opinion or extrapolation from research done in other areas of women’s health. This emphasizes the need and opportunity for ongoing research. For example, there is a need for further research related to prolapse treatment in general. The overall comparative safety and cost-effectiveness of all prolapse treatment options, including observation, pessary, physical therapy, or surgery at each life stage, remains unclear.

Pelvic floor muscle training can also decrease symptoms, such as stress incontinence (Bø, 2004), and prolapse-related feelings of bulging and vaginal heaviness (Bø, Majida, Engh, & Bø, 2010); however, the potential enhanced effect of pessary use in combination with regimens of pelvic muscle strengthening has not been well studied. Pessaries may be able to play a larger role in surgical outcome prediction for symptoms such as low backache that may not be improved by prolapse treatment (Heit, Culligan, Rosenquist, & Shott, 2002), and further inquiry in this area is suggested.

For pessaries in particular, the comparative costs and optimal intervals for self- and clinician-provided care options, especially as they relate to different pessary types (for example, pessaries that are retained by an intact introitus versus those that are self-retaining) are also needed. Further studies of pelvic function in the presence of pessary-support may be aided through the use of real-time ultrasound (Fox, 2009). Innovations in pessary design continue to be described (Jones & Harmanli, 2010). Advances in material and biomedical sciences may offer opportunities for clinical partnerships to develop additional alternatives for pessary shape and content, devices to aid pessary self-care, and agents to protect and rapidly heal damaged epithelium.

The role of pessaries in preventing prolapse progression is not well understood. Initial research suggests that pessary use may improve prolapse, at least temporarily, in some women (Handa & Jones, 2002). However, it is not clear whether pessaries significantly change stress or strain on pelvic support tissue, or whether some degree of pelvic tissue support can regenerate under supported conditions. In addition, while women may question whether earlier initiation of pessary use might slow or prevent symptomatic prolapse progression, there is little evidence to inform this area of decision-making.

The needs of an aging population require additional research in several areas related to pessary use. For example, there may be increasing opportunity to understand normal aging of the genitalia in very old women (over age 85) and to collect data for very long-term pessary use (20 years or more), where advancing atrophy may result either in increasing prolapse as support weakens, or decreasing pessary need as vaginalstrictures and adhesions develop and activity levels decrease.

Prevention and treatment of vaginal atrophy relates both to symptom improvement and potential pessary complications. Emerging treatments, including selective estrogen receptor modulators (Bachmann, Komi, & the Ospemifene Study Group, 2010), and the estrogen precursor dehydroepiandrosterone (DHEA) (Labrie, 2010) are demonstrating efficacy in treatment of genital atrophy. Alternatives such as these may become important as non-estrogenic treatment options to improve outcomes for pessary users.

Conclusion

As the population ages and rates of obesity increase, increasing numbers of women will need care for pelvic floor dysfunctions, including urinary and fecal incontinence and pelvic organ prolapse (Nygaard et al., 2008). Because vaginal support pessaries offer a satisfying, low-risk option for symptom management for many women, a pessary trial should be offered even to women who present with a pre-existing desire for surgery (Clemons, Aguilar, Tillinghast, Jackson, & Myers, 2004). To optimize safe pessary use, providers must be knowledgeable of pessary-related risks and benefits, vigilant in pessary follow up, and prepared to appropriately refer women with pessary-related problems that exceed their scope of practice. In a safe and supported environment, women’s satisfaction with pessary use can also be enhanced by clarifying goals of treatment, optimizing individual regimens for use and follow up, and evaluating outcomes based on those goals.

While the evidence base to support successful pessary use has expanded in recent years, much remains to be studied. This includes the comparative safety of follow-up recommendations and
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