An 80-Year-Old Woman With Vaginal Prolapse

Geoffrey W. Cundiff, MD, Discussant

DR SHIP: Mrs H is an 80-year-old woman with Medicare insurance who recently began feeling tissue coming out of her vagina. She called to make an appointment to see her long-time gynecologist.

She feels generally well and lives with her husband of more than 50 years. She has systolic hypertension and osteoporosis. Decades ago, Mrs H had 4 vaginal deliveries of healthy, term infants. She has had regular Papanicolaou smear screening, but her most recent smear showed atypical cells of undetermined significance. It was her first abnormal smear. She denies vaginal bleeding or urinary incontinence; she does experience some urinary urgency. Her bowels are regular. She is sexually active, without dyspareunia or other problems.

Her medications include enalapril, hydrochlorothiazide, and alendronate. A daughter and sister have been diagnosed with breast cancer. She has good exercise tolerance, is very active, and wants to preserve her quality of life.

On physical examination, the patient is a thin woman in no distress. Her weight is 125 lb, and her height is 63 inches. The blood pressure is 170/70 mm Hg, heart rate 60/min and regular. On pelvic examination, her cervix has prolapsed 2 cm past the hymen; there is very little cystocele or rectocele. Aside from the abnormal cervical smear, her laboratory values are unremarkable.

Mrs H is not eager to try a pessary. She is trying to decide whether to have surgery or to do nothing about her prolapse at this point in time.

MRS H: HER VIEW

I first noticed that there was something wrong when I felt a lump. I understand this means that the cervix has prolapsed. But I feel no different than I did before this happened.

My husband and I are sexually active. This may be a surprise to young people, but it is part of our married life. And we’ve enjoyed it. And I must say that, at this point, my husband’s a little nervous that he’ll hurt me.

I want to be fair with him. And I don’t want him to continue being worried about me. So I’m trying to make the right decision. If I were a single woman, I’d probably consider just letting it go. But where I’m a married woman, I don’t want to be an imperfect wife for him. That’s the way I feel. And I don’t want him worrying about it.

I’ve been told that my options are as follows: let things be the way they are and see what results; try a pessary, a little plastic device; and the third option was surgery.

First, I’d like to know more about what exactly has happened. From what I understand, the cervix has collapsed. If I don’t do anything about it, what is the danger? If I try a pessary, I’d want more detail on that. How often does it go in? Is it apt to irritate? The third thing, surgery: how risky is surgery for this? Am I putting myself in danger for something that could happen when I’d be better off going without the surgery? And would it improve anything, having surgery? I’m not uncomfortable. I’d never know that this had happened if it weren’t for that lump, and there are times when I don’t even feel it. So that’s what I’m faced with.

AT THE CROSSROADS: QUESTIONS FOR DR CUNDIFF

What is the prevalence of uterine prolapse? What are the risk factors for developing uterine prolapse? Is there any way to prevent it or to prevent its progression? How is uterine prolapse diagnosed and can it be assessed objectively? What are the indications for treating uterine prolapse? What are the nonsurgical treatment options, the surgical options, and potential complications? What outcomes can patients expect? How do you choose among the available procedures? What does the future hold? What do you recommend for Mrs H?

DR CUNDIFF: Mrs H has pelvic organ prolapse (POP), defined as protrusion of pelvic organs into or out of the vaginal canal. More specifically, POP refers to loss of the support of the anterior or posterior vaginal wall or the vaginal apex. This failure permits the surrounding organs—

See also Patient Page.

CME available online at www.jama.com
the bladder, rectum, small bowel, sigmoid colon, and uterus—to protrude into the vaginal canal and, in its most severe form, there is complete eversion through the vaginal introitus. For most patients, POP is a collection of support defects. Recognition of the heterogeneous nature of POP is important to understanding its clinical presentation and planning therapeutic intervention.

**Pathophysiology**

A basic understanding of the normal vaginal support is necessary to understand the pathophysiology of POP. The vaginal canal is enveloped by a sheet of connective tissue known as the endopelvic fascia (Figure 1). This fibromuscular layer is a constituent of the anterior and posterior vaginal walls where it is sometimes referred to as the vaginal muscularis. Its condensations at the vaginal apex form the cardinal and uterosacral ligaments, which provide the support of the cervix and adjoining uterus. The endopelvic fascia serves as a backup support for the muscular component of pelvic support, the pelvic diaphragm comprising the paired levator ani and coccygeus muscles. Functionally, these muscles create a bowl-shaped pelvic floor with an inner muscular sling that encircles the genital hiatus through which the rectum, vagina, and urethra exit. Contraction of these muscles creates a horizontal pelvic floor and pulls the rectum, vagina, and urethra anteriorly toward the symphysis pubis (Figure 1B). When not voluntarily contracted, their resting tone provides day-to-day support of the pelvic viscera. The role of the endopelvic fascia is to tether the pelvic organs during normal bodily functions that require relaxation of the pelvic diaphragm, including urination, defecation, coitus, and parturition.

POP can result from failures of the connective tissue, muscular support, or both (Figure 2). Connective tissue failure manifests as attenuation or, more commonly, as tears in the endopelvic fascia. Analogous to a hernia, these tears permit the opposing soft tissues to bulge through the vaginal wall. Loss of apical support results in prolapse of the uterus and cervix, which Mrs H has noticed. This is referred to as “uterine prolapse” or, following a hysterectomy, “vaginal vault prolapse.” Uterine prolapse is generally accompanied by support defects in the anterior and posterior vaginal walls due to tears in different locations of the endopelvic fascia, frequently in multiple locations. Loss of muscular support places the endopelvic fascia under constant strain that, over time, results in damage to the connective tissue support. Conversely, tears in the endopelvic fascia can cause stretch injury to the innervation of the muscular support. This additive effect helps to explain the progression of POP and suggests that women with loss of both connective tissue and muscular supports have the most severe disease.

**Epidemiology**

POP is extremely common among women. The 2002 Women’s Health Initiative revealed uterine prolapse in 14.3%, and...
Pelvic support defects can cause minimal to significant prolapse of the uterus (left) or, posthysterectomy, of the vaginal vault (right). A, Sagittal view of pelvis showing both anterior and posterior vaginal wall prolapse but preserved uterine support. Tears or weakness in the pubocervical and rectovaginal fascia permits herniation of pelvic organs against the vaginal wall. B, Apical prolapse. Loss of apical support by the uterosacral and/or cardinal ligaments results in prolapse of the uterus (left) or, posthysterectomy, of the vaginal vault (right).

Factors other than vaginal delivery also play a role. Swift et al. reported that each year of advancing age was associated with a 12% increase in the odds of prolapse, while another study found incidence approximately doubled with each decade of life between the ages of 20 and 59 years. The reason for the increased risk is unclear. Menopause itself is not an independent risk factor for POP. However, high-impact occupational and recreational activities may increase the risk of POP by chronically increasing intra-abdominal pressure. In a study of 28 000 nursing assistants, a profession requiring substantial heavy lifting, women had 60% more surgeries for POP than the general population. Chronic illnesses that increase intra-abdominal pressure such as constipation, chronic obstructive pulmonary disease, and obesity have been implicated. Mrs H does not have any of these acquired risk factors, although theoretically her use of enalapril could contribute if it led to a chronic cough.

Congenital factors can increase the risk of POP. More than two thirds of women with bladder extrophy develop POP, and more subtle differences in connective tissue have also been implicated. The endopelvic fascia of women with POP has been shown to have less total collagen and a higher proportion of weaker collagen than controls. Similarly, Handa et al. reported differences in the architecture of the bony pelvis in women with POP, hypothesizing that certain bony pelvic morphologies predispose to increased risk of obstetrical trauma. These studies support the hypothesis that most women with more severe POP have multiple risk factors. Bump and Norton organize these into predisposing, inciting, promoting, and decompensating risk factors (Box 1). The multifactorial etiology helps to explain why women who develop support defects following vaginal delivery frequently do not become symptomatic until later in life. Women with symptomatic POP early in life may have more predisposing factors or more severe inciting factors. Similarly, with the accumulation of additive risks in older populations with POP, vaginal delivery becomes less important as a risk factor.
nary incontinence and found an 11.1% lifetime risk for surgery for POP or urinary incontinence. A related study by Luber et al²⁴ projected the future demand for pelvic floor surgery by using age-specific current demand for treatment of POP or urinary incontinence and modeled the future based on Census Bureau data. They estimated that the growth of the elderly population will lead to a 45% increase in patients referred for pelvic floor surgery by 2030.

**Evaluation**

Vaginal support defects occur with and without symptoms, and many of the symptoms attributed to POP can result from other etiologies. Consequently, the clinical evaluation of POP focuses on the patient’s symptoms, defining the location and severity of support defects, and establishing a relationship of these symptoms to the support defects through elimination of other etiologies of pelvic floor symptoms.

**History**

POP can result in a variety of symptoms depending on which pelvic organs are affected. Mrs H primarily reports tissue protruding from the vagina. Protrusion is often associated with vaginal or pelvic pressure or fullness. These herniation symptoms occur with loss of support in any part of the vagina and tend to increase as the severity of the POP increases.²¹ Prolapse has also been strongly associated with sexual complaints,²⁶ including dyspareunia, decreased sexual desire, and anorgasmia.²⁷ Patients often abstain from coitus due to concern that coitus will worsen the POP. Sexual complaints may be related to the physical or emotional impact of POP or to other factors such as menopause, prior surgeries, or age.²⁷,²⁸

Unlike Mrs H, many patients also have urinary and bowel complaints. Voiding and lower urinary tract symptoms (TABLE 1) are often related to anterior compartment prolapse. Conversely, symptoms of urinary incontinence decrease with increasing anterior wall prolapse because rotation of the bladder base with loss of anterior vaginal wall support obstructs the urethra.²⁹ Symptoms of defecatory dysfunction (Table 1) have been correlated with posterior wall prolapse.²⁰,²¹

Because pelvic support defects generally involve more than 1 anatomic compartment, numerous symptoms may coexist; studies have failed to find clear correlations between individual symptoms and specific support defects.²⁶ This lack of specificity is exacerbated by other diagnoses that produce similar symptoms. Of all complaints, herniation symptoms are the most specific for POP.²² Other symptom groups have an extensive differential diagnosis (Table 1). Assessing risk factors for POP can inform decisions about treatment alternatives.

**Physical Examination**

The physical examination primarily focuses on the pelvic examination, but an evaluation of nutritional status, mobility, mental status, and abdominal wall integrity as well as a neurological examination focusing on the integrity of the motor and sensory components of the lower sacral roots and the perineal reflexes are also important. The pelvic examination begins with an evaluation of vulvar architecture, perineal scars, and perineal support. The perineal body is normally at the level of the ischial tuberosities. Descent of more than 2 cm below this level with flattening of the intergluteal sulcus indicates perineal descent, which is a support defect associated with defecatory dysfunction.²²,²³ The vaginal epithelium is evaluated for ruggations and evidence of atrophy due to the absence of estrogen effects on the epithelium. It is also

<table>
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<th><strong>Table 1. Differential Diagnosis for Prolapse-Associated Symptoms</strong></th>
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<tr>
<td><strong>Symptom Group</strong></td>
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<tr>
<td>Herniation</td>
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<tr>
<td>Voiding</td>
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<td>Lower urinary tract</td>
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<td>Urinary incontinence</td>
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<td>Defecatory dysfunction</td>
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<td>Fecal incontinence</td>
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<td></td>
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<tr>
<td>Sexual dysfunction</td>
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*Adapted from Bump and Norton.²²
The pelvic examination should include a systematic evaluation of all components of the pelvic floor, including innervation and muscular and connective tissue support. The bulbocavernosus reflex, an anal contraction elicited by a gentle stroke of the ipsilateral labia majora, demonstrates integrity of the sensory and motor innervation. Most daily activities do not occur in the supine position, and the dorsal lithotomy position may mask the extent of POP. To reproduce the patient’s POP, the patient should strain, as for a Valsalva maneuver. A handheld mirror helps a patient to confirm maximal protrusion. If protrusion does not occur in the lithotomy position, the patient should be examined while she strains in a seated or standing position.

The connective tissue support is assessed with a bivalve speculum. Apical, anterior wall, and posterior vaginal wall support are assessed independently. For each evaluation, the patient should strain forcefully while the clinician measures the degree of descent with respect to the hymenal ring. Many ordinal staging systems to describe the degree of descent exist, but the Pelvic Organ Prolapse Quantitation (POPQ) examination is most widely accepted, having been adopted by the American Urogynecologic Society, the International Continence Society, and the National Institutes of Health.36,37 Generally, it includes 6 topographical points on the vaginal walls and 2 on the perineum, as well as the vaginal length. The stages of the POPQ system are summarized in Box 2; these have not been correlated with treatment outcomes or prognosis. Mrs H has stage 3 by the POPQ system. Many practitioners also try to determine the specific location of tears in anterior and posterior vaginal walls, but the accuracy of the clinical assessments of connective tissue compromise are poor when compared with the actual findings at surgery.5,6

Ancillary Tests

Ancillary tests to augment the physical examination of POP include physiological tests of bladder and rectal function and imaging tests to clarify anatomical derangements. Urodynamic studies use pressure transducers to delineate the storage and emptying function of the bladder. They are commonly used for patients who have urinary incontinence in addition to POP. The role of urodynamics for women who have POP without urinary incontinence is controversial and is being investigated in a randomized clinical trial.38 Similarly, anorectal physiological testing is used for women with concurrent fecal incontinence.

Pelvic floor fluoroscopy can be useful for women with POP and defecatory dysfunction. In this type of study, the small bowel is opacified with oral contrast, the vagina and bladder with liquid contrast, and the rectum with contrast paste. Sagittal fluoroscopic images are obtained while the patient defecates on a radiolucent commode. This not only provides radiological evidence of herniation of the surrounding organs into the vagina, but also provides dynamic assessment of pelvic floor function during defecation. While it is more accurate than the physical examination for defining which organ is herniating into the vagina,39 it is usually reserved for patients with defecatory dysfunction.40 Dynamic magnetic resonance imaging offers similar information, but also provides multiplanar data about the soft tissues of the pelvic floor.41 It is most appropriate for patients with complex POP or symptoms that are not explained by the physical examination.41

Therapeutic Options

The 3 therapeutic options for POP are observation, nonsurgical, and surgical. Observation is a reasonable approach for mildly symptomatic POP, especially given the reported 1-year regression rate of 48% for uterine POP42 and reoperation rate of up to 30%.23

Nonsurgical Treatment. For those patients who desire intervention, most surgeons will recommend a trial of nonsurgical treatment first.43 Many physicians consider pelvic muscle exercises only in treating urinary incontinence, yet Kegel originally proposed the exercises that bear his name as a method to strengthen pelvic support.44 Unfortunately, the literature only addresses their efficacy for urinary incontinence. Pessaries are the mainstay of nonsurgical therapy. While traditionally these were reserved for women who are not surgical candidates, when surveyed, more than half of physicians use pessaries as first-line therapy.45 Nevertheless, few data address which of the plethora of pessaries should be used for a given patient. Adams et al46 performed a Cochrane Database Review in 2004 and could not find a single randomized trial to evaluate effectiveness of pessaries for POP.

Box 2. Staging of the Pelvic Organ Prolapse Quantitation (POPQ) System

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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<tbody>
<tr>
<td>0</td>
<td>Perfect support</td>
</tr>
<tr>
<td>1</td>
<td>No point lower than 1 cm above the hymenal ring</td>
</tr>
<tr>
<td>2</td>
<td>Lowest point within 1 cm of the hymenal ring</td>
</tr>
<tr>
<td>3</td>
<td>Lowest point &gt;1 cm below hymenal ring but not completely prolapsed</td>
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<tr>
<td>4</td>
<td>Complete prolapse</td>
</tr>
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</table>

Important to look for erosions, which can occur with severe POP. The bimanual examination determines the location, size, and tenderness of the bladder, uterus, cervix, and adnexa. Evaluation of the pelvic diaphragm informs therapeutic decisions, including type of pessary and surgical technique. The pelvic diahragm is assessed by digital examination for integrity of the muscle body and insertion, as well as the strength, duration of a contraction, and the anterior lift of the contraction. Several standardized systems have been described to assess muscle strength objectively, but none are universally accepted.35 Weak pelvic floor muscles can compromise the ability to retain many types of pessaries and also predispose to recurrence of POP after surgery.

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There are 2 basic types of pessaries, supportive and space occupying. The ring pessary with or without floor is a common supportive pessary, while the Gelhorn and cube pessaries are common space-occupying pessaries.43 Clemons et al46 found that 73 of 100 consecutive women with POP could successfully retain a pessary for at least 1 week. A short vaginal length (≤6 cm) and a wide vaginal introitus (4 fingerbreadths accommodated) were associated with unsuccessful trial. Ring pessaries were used more with stage 2 and 3 prolapse, whereas Gelhorn pessaries were used with stage 4 prolapse. Other factors that could potentially affect successful use are hormonal status, sexual activity, prior hysterectomy, pelvic floor strength, and stage and site of POP. Sulak et al47 found that while pessaries were effective in women who declined surgery, 20% discontinued them. Pessaries have not been compared directly with surgical management of POP. Reported complications of pessaries include vaginal wall ulceration,48 fistula formation,49 and bowel herniation,50 although these are case reports and their actual prevalence is unknown. Complications should be minimized by experienced fitting of a pessary that does not exert excessive pressure on the vaginal epithelium and by emphasizing proper pessary care, including regular surveillance, cleansing, and the use of estrogen cream or a deodorizing cream.51 Pessary fitting is a learned skill that is developed through experience but does not require special training and can be learned by primary care clinicians.

Surgical Limitations and Goals. Up to 30% of women who seek surgical repair return for a subsequent procedure44; therefore, the physician and patient should recognize the limitations of surgical repairs. Of the causes of support defects, connective tissues, muscles, or nerves, surgery is limited to correction of connective tissue tears or breaks. The aim of surgical correction is to alleviate the symptoms of pelvic floor support defects; to approximate normal anatomical relationships; and to maximize bladder, bowel, and coital function. Overcorrection must be avoided because it can create new problems.

Types of Surgical Repairs. Reconstructive procedures can be accomplished through a vaginal, abdominal, or laparoscopic approach or some combination thereof. Choice of procedure depends on the precise support defects, the etiology of the defects, whether the inciting and promoting events are ongoing processes, as well as the patient’s desires and expectations.

The first step is to choose the type of repair: compensatory, restorative, or obliterator (Table 2). For the frail patient whose health status precludes prolonged extensive surgery, an obliterator repair that closes the vaginal vault affords symptom relief with minimal morbidity except that it precludes sexual intercourse, which must be acceptable to the patient. The 2 types of repair, colpocolesis and colpectomy, both start with removal of the vaginal skin, followed by closure of the vagina by slightly different techniques. Cure rates for colpocolesis of 86% to 100% are reported, although what constitutes a “cure” is generally not defined.52,53 The most common complication is development of stress urinary incontinence in 1% to 9% of patients.54,55

Mrs H wants to preserve coital function. For her, a restorative or compensatory repair is more appropriate. Restorative repairs are limited to suturing indigenous tissues and may be sufficient for women with discrete defects in the endopelvic fascia. Such repairs can be accomplished from the vaginal approach, which provides a shorter recovery than compensatory procedures performed through a laparotomy. While there are several restorative techniques, few have been compared directly (Table 2).56-69 When native tissues are insufficient, compensatory repair is used to provide additional support mechanisms. The theoretical basis for compensatory repairs comes from the hernia literature, in which reinforcing the fascial repair with a graft reduces the 3-year recurrence rate from 54% to 20%.70 Reinforcement materials include synthetic materials, allografts, and xenografts. While no randomized trials have compared allogenic with synthetic grafts, a review by Nygaard et al71 suggests that autologous grafts have a higher failure rate. Alternatively, native tissue can be harvested from the rectus fascia or fascia lata of the thigh. Sacral colpopexy, the compensatory repair for apical POP, has been reported to correct the anatomical deficits and relieve associated symptoms in more than 90% of patients.72-77 However, it is generally performed via a laparotomy, and complications include rare excessive intraoperative hemorrhage78 and a 3.3% incidence of vaginal mesh erosion.79 Since insufficient data exist to define the indications for a compensatory repair, I reserve it for women with conditions at risk for failure, including those with ongoing occupational or recreational stressors, chronic illness, a weak pelvic diaphragm, attenuation of native tissues, or recurrent POP. I also recommend it for patients with vaginal foreshortening.

Like compensatory repairs for apical POP, compensatory repairs for the anterior and posterior vagina walls have lower reported recurrence rates than restorative repairs and higher complication rates.80-82 Therefore, the use of grafts for these repairs remains controversial.

Unfortunately, few data exist to identify the best treatment for a given patient, and the literature describing these procedures often does not meet scientific standards for outcomes analysis.8 Three prospective randomized studies compared restorative and compensatory repairs. Benson et al83

Table 2. Reconstructive Pelvic Surgeries by Type and Site

<table>
<thead>
<tr>
<th>Site</th>
<th>Compensatory</th>
<th>Restorative</th>
<th>Obliterator</th>
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<tbody>
<tr>
<td>Vaginal apex</td>
<td>Sacral colpocleisis</td>
<td>Uterosacral suspension</td>
<td>Colpocleisis</td>
</tr>
<tr>
<td>Anterior vaginal wall</td>
<td>Anterior fascial replacement</td>
<td>Anterior colpocleisis</td>
<td>Colpocleisis</td>
</tr>
<tr>
<td>Posterior vaginal wall</td>
<td>Posterior fascial replacement</td>
<td>Posterior colpocleisis</td>
<td>Colpocleisis</td>
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randomized 80 women to undergo a bilateral sacrospinous ligament fixation vs sacral colpopexy and with a mean of 2.5-year follow-up. Sacral colpopexy was twice as likely to result in optimal effectiveness (free of prolapse and incontinence symptoms [58% vs 29%]) and half as likely to produce unsatisfactory outcome requiring reoperation (symptomatic descent of the vagina [16% vs 33%]). These differences led the authors to stop the trial early. A trend toward higher complications with the sacral colpopexy did not reach statistical significance. Conversely, Maher et al\textsuperscript{84} randomized 95 women to receive sacral colpopexy vs sacrospinous ligament fixation and found that at a mean of 24 months, the subjective success rate was 94% in the sacral colpopexy group and 91% in the sacrospinous group, while the objective success rates were 76% and 69%, respectively. These differences were not statistically significant, and sacral colpopexy had a longer operating time, a slower return to activities of daily living, and a greater cost than the sacrospinous fixation. The different conclusions of the 2 studies are likely a function of the different outcomes assessed, but in both studies, sacral colpopexy had better anatomical results at the cost of a more difficult recovery.

After the surgeon and patient choose the type of surgical repair, the repair should address all levels of support defects, including the vaginal apex, the anterior vaginal wall, and the posterior vaginal wall (Table 2); failure to do so can predispose to failure at the weakest site.\textsuperscript{85} Since Mrs H primarily has loss of apical support, she will not need concurrent repairs for the anterior or posterior vaginal walls. Moreover, since she does not have any known risk factors for recurrence, either a restorative or compensatory repair would be appropriate.

### Future Areas of Research

Future research should focus on randomized evaluation of surgical management of POP, assessing functional rather than structural outcomes. Watchful waiting and pessaries should be systematically evaluated, and the patients most likely to benefit from pessaries and from which type determined. Research is needed to identify prospectively which patients are likely to fail restorative approaches and might benefit from a compensatory approach. Neurophysiological testing to evaluate the presence of neurological injury or evaluation of individual connective tissue types are interesting possibilities that deserve further attention.

### Recommendations for Mrs H

Mrs H’s vaginal prolapse clearly hinders her lifestyle, but she is fortunate that her symptoms are limited to herniation, which are most consistently relieved by intervention. Her options include observation, a pessary, or surgical repair. If her symptoms are sufficiently bothersome to pursue treatment, a trial of a pessary is recommended, since it has the potential to alleviate her symptoms without the po-

### Table 3. Anatomical and Symptomatic Cure Rates in Case Series for Apical Repairs

<table>
<thead>
<tr>
<th>Repair</th>
<th>Source</th>
<th>No. of Patients</th>
<th>Follow-up, mo</th>
<th>Anatomical Cure, %</th>
<th>Symptomatic Cure, %</th>
<th>Undesired Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Restorative Repairs</strong></td>
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<tr>
<td>Uterosacral suspension</td>
<td>Jenkins,\textsuperscript{56} 1997</td>
<td>50</td>
<td>48</td>
<td>100</td>
<td>96</td>
<td>Suture erosion</td>
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<tr>
<td></td>
<td>Shull et al,\textsuperscript{27} 2000</td>
<td>289</td>
<td>1.5</td>
<td>87</td>
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<td>Ureteral injury</td>
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<td></td>
<td>Barber et al,\textsuperscript{56} 2000</td>
<td>46</td>
<td>16</td>
<td>94</td>
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<td></td>
<td>Amundsen et al,\textsuperscript{10} 2003</td>
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tential risks of surgery. If she decides to pursue surgery, since her vaginal prolapse is limited to the vaginal apex, she is a good candidate for either a uterosacral suspension or a sacral colpopexy. In the absence of well-designed and definitive comparisons of these techniques, her decision should balance the easier and quicker recovery of the restorative repair with the possibly greater durability of the sacral colpopexy.

QUESTIONS AND DISCUSSION

QUESTION: I'm a gynecologist with experience treating uterine prolapse, but I've had a hard time finding information about pessaries. Do you have any suggestions for increasing our skill at fitting the right one?

DR CUNDIFF: This is another area with minimal data. My colleagues and I have just finished a 5-year randomized trial of 2 pessaries. The data are still being evaluated, but I hope we will have some objective data on pessary use.

QUESTION: Can an internist fit a pessary?

DR CUNDIFF: It's not hard to put a pessary in. It's the same concept as fitting a diaphragm. You don't want it to impinge on the vaginal walls and you want it to be comfortable. So the patient should not be able to feel it when it's in correctly. It's time-consuming.

QUESTION: What about the fate of the uterus? If a patient has a suspension, does she need a hysterectomy too?

DR CUNDIFF: Most surgeons suggest a hysterectomy at the time of repair, regardless of whether they were doing it abdominally or vaginally. I actually have a lot of patients who want to retain their uterus. And you can do either one of these repairs without removing the uterus. I mentioned the fact that the cervix is the hub of the wheel. And it really is the center of support. And one advantage of taking out the cervix, which means taking out the uterus, is that you can really correct that hub. You can make sure that the support is completely repaired at that location. So I think that's an advantage. The other thing is, if you're trying to decide what the efficacy is, almost all of the data are with hysterectomy. And so it's hard to counsel patients on the outcomes without a hysterectomy.

QUESTION: Can you comment on the laparoscopic sacral colpopexy or laparoscopic paravaginal repairs as opposed to the traditional approaches?

DR CUNDIFF: The laparoscopic sacral colpopexy is really gaining a lot of ground. It has a steep learning curve and some people refer to it as the “forever-scopic sacral colpopexy,” because it can add a lot of time. As surgeons, we have to ask whether there is a real advantage for all that added OR time, so I don't think that question is answered yet. But we do laparoscopic sacral colpopexies too.

QUESTION: I am a layperson. Does discomfort ever get severe, and is there any medication that can be provided that can give relief?

DR CUNDIFF: Yes, it can become very severe, but symptoms do not accurately match stage of disease. Some women with stage 2 or 3 disease are very symptomatic and others aren't. Unfortunately, this is one of the few areas in medicine that is a completely anatomical problem. There are no medications that I know of for treating prolapse.

MRS H: What I’m concerned about is my activity. Until now I’ve been walking, lifting weights, playing golf, raking leaves, and lugging heavy bags. Is that injuring or furthering my problem? You mentioned Kegels and I wondered if it would strengthen it. There’s no correcting it normally, I understand. I just don’t want to further the cause—I don’t want to sit in a chair.

DR CUNDIFF: Well, I certainly encourage Kegel exercises especially if you are going to pursue observation. I also don’t want to leave the impression that you cannot pursue exercise. But I recommend that you avoid activities that require straining. And what I mean by that is what physicians call a Valsalva, where you hold your breath and push into your abdomen. Now you can lift weights if they’re light and you simultaneously breathe out. And that’s OK, because that really doesn’t increase intra-abdominal pressure. You should avoid things like shoveling snow or lugging bags of leaves. This recommendation is based on the results of a study that revealed that nurse’s aides, a profession with significant heavy lifting, have a 60% higher rate of surgery for POP then other professions.16 Many women with prolapse are concerned that sexual relations may worsen prolapse. This is an unnecessary concern, and there is no need to avoid sexual relations.

MRS H: I have to be lazy around the house. Thank you very much.

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A 50-Year-Old Man With Hepatitis C and Cirrhosis Needing Liver Transplantation, 18 Months Later

In a Clinical Crossroads held at Medicine Grand Rounds in March 2003, Dr Douglas Hanto discussed the case of Mr G, a 50-year-old man needing liver transplantation. Mr G had hepatitis C and cirrhosis and had been treated with ribavirin and interferon unsuccessfully. He had 2 episodes of bleeding from esophageal varices and had undergone a transjugular intrahepatic portosystemic shunt (TIPS) procedure. At the time of the conference, Mr G was receiving disability due to significant fatigue, difficulty concentrating, and poor memory. His model end-stage liver disease (MELD) score was 18.

Dr Hanto reviewed the indications and contraindications to liver transplantation; the pretransplant evaluation, options, and listing; the medical management of hepatitis C and cirrhosis; the medical and surgical issues; and prognosis after transplantation. Dr Hanto observed that Mr G and his family had adjusted to his chronic illness, and that his relatively modest symptoms and stable laboratory markers would not recommend referral for living donor transplantation at that time.

Mr G

Three months after the conference I had a living related donor transplant. The usual bumpy road to recovery was complicated by a resurgence of hepatitis C activity and the consequent beginning of combination therapy 4 months later. It seems to be working, as I have an undetectable hepatitis C virus [HCV] RNA at the moment. My symptoms revolve around interferon/ribavirin side effects: fatigue, nausea, sweats, sleeplessness. In addition, anemia adds to the lethargy. This is treated with erythropoietin, filgrastim, and an occasional transfusion, as well as reducing treatment doses as appropriate.

My liver function is outstanding. I have normal AST [aspartate aminotransferase] and ALT [alanine aminotransferase] readings for the first time in more than 20 years. I’m pretty much immersed in the habits of a liver-sensitive life and find it no hardship at all to protect my new liver. No sane person who doesn’t need one wants a transplant; the prospect of a second sends shivers down my spine.

Posttransplant life seems to be an endless series of minor adjustments: medication, attitude, energy level, and involvement. Energy seems to be the governing factor. One year later, and though I’m a hell of a lot better off than prior to surgery, I’m still somewhat short of fully functional. It is to be expected, but is nonetheless frustrating.

Amy N. Ship, MD