Options and outcomes for uterine preservation at the time of prolapse surgery

Patients who want to preserve their uterus during surgical repair for uterovaginal prolapse have a number of options for management. Here, guidelines for optimal patient counseling and tips for technique.

Katherine L. Woodburn, MD, and Kate Meriwether, MD

CASE Patient desires prolapse repair
A 65-year-old postmenopausal patient (G3P3) presents to your office with symptoms of a vaginal bulge for more than 1 year. She has no urinary incontinence symptoms and no bowel dysfunction symptoms. On examination, you diagnose stage 2 uterovaginal prolapse with both anterior and apical defects. The patient declines expectant and pessary management and desires surgery, but she states that she feels her uterus “is important for me to keep, as my babies grew in there and it is part of me.” She denies any family or personal history of breast, endometrial, or ovarian cancer and has no history of abnormal cervical cancer screening or postmenopausal bleeding. What are the options for this patient?

Who is the appropriate hysteropexy patient, and how do we counsel her?
Uterine prolapse is the third leading cause of benign hysterectomy, with approximately 70,000 procedures performed each year in the United States. It has long been acknowledged that the uterus is a passive bystander to the prolapse process,¹ but modern practice often involves a hysterectomy as part of addressing apical prolapse. However, more and more uterine-preserving surgeries are being performed, with one study showing an increase from 1.8% to 5% from 2002 and 2012.² When presented with the option to keep or remove their uterus during the time of prolapse surgery, 36% of patients indicated that they would prefer to keep their uterus with similar outcomes while 21% would still prefer uterine preservation even if outcomes were inferior compared with hysterectomy.³ Another study showed that 60% of patients would decline concurrent hysterectomy if there were equal surgical outcomes,⁴ and popular platforms, such as Health magazine (www.health.com) and AARP magazine (www.aarp.org), have listed benign hysterectomy as a “top surgery to avoid.”

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Patients desire uterine preservation for many reasons, including concerns about sexual function and pleasure, the uterus being important to their sense of identity or womanhood, and concerns around menopausal symptoms. Early patient counseling and discussion of surgical goals can help clinicians fully understand a patient’s thoughts toward uterine preservation. Women who identified their uterus as important to their sense of self had a 28.2-times chance of preferring uterine preservation.³ Frequently, concerns about menopausal symptoms are more directly related to hormones and ovary removal, not uterus removal, but clinicians should be careful to also counsel patients on the increased risk of menopause in the 5 years after hysterectomy, even with ovarian preservation.⁵

There are some patients for whom experts do not recommend uterine preservation.⁶ Patients with an increased risk of cervical or endometrial pathology should be counseled on the benefits of hysterectomy. Additionally, patients who have abnormal uterine bleeding from benign pathology should consider hysterectomy to treat these issues and avoid future workups (TABLE, page 40). For postmenopausal patients with recent postmenopausal bleeding, we encourage hysterectomy. A study of patients undergoing hysterectomy at the time of prolapse repair found a rate of 13% unanticipated endometrial pathology with postmenopausal bleeding and negative preoperative workup.⁷

At this time, a majority of clinicians consider the desire for future fertility to be a relative contraindication to surgical prolapse repair and advise conservative management.
The Le Fort colpocleisis repair technique remains the most reliable prolapse surgery to date; however, it is not an option for everyone, as penetrative intercourse is no longer an option after surgery.

**Uterine preservation surgical techniques and outcomes**

**Le Fort colpocleisis**

First described in 1840 by Neugebauer of Poland and later by Le Fort in Paris in 1877, the Le Fort colpocleisis repair technique remains the most reliable prolapse surgery to date. The uterus is left in place while the vagina is narrowed and shortened. It typically is performed with a levator plication to reduce the genital hiatus.

This procedure is quick and effective, with a 90% to 95% success rate. If necessary, it can be performed under local or regional anesthesia, making it a good option for medically frail patients. It is not an option for everyone, however, as penetrative intercourse is no longer an option after surgery. Studies suggest an approximately 13% dissatisfaction rate after the procedure, with most of that coming from postoperative urinary symptoms, such as urgency or stress incontinence, and some studies show a dissatisfaction rate as low as 0% in a well-counseled patient population.

**Vaginal native tissue hysteropexy**

Many patients who elect for uterine preservation at the time of prolapse surgery are “minimalists,” meaning that a vaginal native tissue procedure appeals to them due to the lack of abdominal incisions, decreased operating room time, and lack of permanent graft materials.

Of all the hysteropexy procedures, **sacrospinous hysteropexy** (SSHP) has the most robust data available. The approach to SSHP can be tailored to the patient’s anatomy and it is performed in a manner similar to posthysterectomy sacrospinous ligament fixation. The traditional posterior approach can be used with predominantly posterior prolapse, while an apical approach through a semilunar paracervical incision can be used for predominantly apical prolapse. Expert surgeons agree that one key to success is anchoring the suspension sutures through the cervical stroma, not just the vaginal epithelium.

Researchers in the Netherlands published the 5-year outcomes of a randomized trial that compared SSHP with vaginal hysterectomy with uterosacral ligament suspension. Their data showed no difference between groups in composite failure, reoperation rates, quality of life measures, and postoperative sexual function. Adverse events were very similar to those reported for posthysterectomy sacrospinous ligament fixation, including 15% transient buttock pain. Of note, the same authors explored risk

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**TABLE Perceived advantages and disadvantages of uterine preservation compared with prolapse repair with concurrent hysterectomy**

<table>
<thead>
<tr>
<th>Perceived advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Decrease in OR time and EBL</td>
<td>• Ongoing risk for cervical/endometrial pathology</td>
</tr>
<tr>
<td>• Avoid unnecessary procedure</td>
<td>• Challenges with subsequent hysterectomy</td>
</tr>
<tr>
<td>• Perceived role of uterus/cervix in sexual function</td>
<td></td>
</tr>
<tr>
<td>• Patient preference</td>
<td></td>
</tr>
<tr>
<td>• Maintenance of vaginal length</td>
<td></td>
</tr>
<tr>
<td>• Natural menopause timing</td>
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Abbreviations: EBL, estimated blood loss; OR, operating room.

with pessary until childbearing is complete. This is reasonable, given the paucity of safety data in subsequent pregnancies as well as the lack of prolapse outcomes after those pregnancies. Lastly, cervical elongation is considered a relative contraindication, as it represents a risk for surgical failure. This may be counteracted with trachelectomy at the time of hysteropexy or surgeries such as the Manchester repair, which involve a trachelectomy routinely, but currently there is no strong evidence for this as routine practice.
factors for recurrence after SSHP and found that higher body mass index, smoking, and a large point Ba measurement were risk factors for prolapse recurrence. A randomized, controlled trial in the United Kingdom (the VUE trial) compared vaginal hysterectomy with apical suspension to uterine preservation with a variety of apical suspension techniques, mostly SSHP, and demonstrated no significant differences in outcomes. Overall, SSHP is an excellent option for many patients interested in uterine preservation.

**Uterosacral ligament hysteropexy (USHP),** when performed vaginally, is very similar to uterosacral ligament suspension at the time of vaginal hysterectomy, with entry into the peritoneal cavity through a posterior colpotomy. The uterosacral ligaments are grasped and delayed absorbable suture placed through the ligaments and anchored into the posterior cervical stroma. Given the maintenance of the normal axis of the vagina, USHP is a good technique for patients with isolated apical defects. Unfortunately, the least amount of quality data is available for USHP at this time. Currently, evidence suggests that complications are rare and that the procedure may offer acceptable anatomic and symptomatic outcomes.

Some surgeons approach the uterosacral suspension laparoscopically, which also has mixed results in the literature, with failure rates between 8% and 27% and few robust studies. The Manchester-Fothergill operation, currently not common in the United States but popular in Europe, primarily is considered a treatment for cervical elongation when the uterosacral ligaments are intact. In this procedure, trachelectomy is performed and the uterosacral ligaments are plicated to the uterine body. Sturmdorf sutures are frequently placed to close off the endometrial canal, which can lead to hematometra and other complications of cervical stenosis. Previous unmatched studies have shown similar outcomes with the Manchester procedure compared with vaginal hysterectomy.

The largest study currently available is a registry study from Denmark, with matched cohort populations, that compared the Manchester procedure, SSHP, and total vaginal hysterectomy with uterosacral ligament suspension. This study indicated less morbidity related to the Manchester procedure, decreased anterior recurrence compared with SSHP, and a 7% reoperation rate. The same authors also established better cost-effectiveness with the Manchester procedure as opposed to vaginal hysterectomy with uterosacral ligament suspension.

**Vaginal mesh hysteropexy**

Hysteropexy using vaginal mesh is limited in the United States given the removal of vaginal mesh kits from the market by the US Food and Drug Administration in 2019. However, a Pelvic Floor Disorders Network randomized trial compared vaginal mesh hysteropexy using the Uphold LITE transvaginal mesh support system (Boston Scientific) and vaginal hysterectomy with uterosacral ligament suspension. At 5 years, mesh hysteropexy had fewer failures than hysterectomy (37% vs 54%) and there was no difference in retreatment (9% vs 13%). The authors noted an 8% mesh exposure rate in the mesh hysteropexy group but 12% granulation tissue and 21% suture exposure rate in the hysterectomy group.

While vaginal mesh hysteropexy was effective in the treatment of apical prolapse, the elevated mesh exposure rate and postoperative complications ultimately led to its removal from the market.

**Sacrohysteropexy**

Lastly, prolapse surgery with uterine preservation may be accomplished abdominally, most commonly laparoscopically with or without robotic assistance. Sacrohysteropexy (SHP) involves the attachment of permanent synthetic mesh posteriorly to the posterior vagina and cervix with or without the additional placement of mesh to the anterior vagina and cervix. When the anterior mesh is placed, the arms are typically routed through the broad ligament bilaterally and joined with the posterior mesh for attachment to the anterior longitudinal ligament, overlying the sacrum.

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Proponents of this technique endorse the use of mesh to augment already failing native tissues and propose similarities to the durability of sacrocolpopexy. While no randomized controlled trials have compared hysterectomy with sacrocolpopexy or supracervical hysterectomy with sacrocolpopexy to sacrohysterectomy, a meta-analysis suggests that sacrohysterectomy may have a decreased risk of mesh exposure but a higher reoperation rate with lower anatomic success. Randomized trials that compared abdominal sacrohysterectomy with vaginal hysterectomy and suspension indicate that apical support may be improved with sacrohysterectomy, but reoperations, postoperative pain and disability, and urinary dysfunction was higher with SHP.

What further research is needed?

With the increasing patient and clinician interest in uterine preservation, more research is needed to improve patient counseling and surgical planning. Much of the current research compares hysterectomy outcomes with those of traditional prolapse repairs with hysterectomy, with only a few randomized trials. We are lacking robust, prospective comparison studies between hysterectomy and test the effectiveness of a questionnaire assessing both objective and patient-centered outcomes.

References
12. Thys JD, Coolen AL, Martens IR, et al. A comparison of long-