OBG MANAGEMENT

Steven D. McCarus, MD
Chief, Division of Gynecologic Surgery, and Medical Director, Center for Pelvic Health, Florida Hospital Celebration Health, Orlando, Fla

Tamberly F. McCarus, MD
Co-Director, Laparoscopic Fellowship Program, Gynecology, Center for Pelvic Health, Florida Hospital Celebration Health, Orlando, Fla

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Opinion: A time for change

Laparoscopic hysterectomy: Learn it—or get left behind!

A minimally invasive approach has clear advantages over abdominal surgery. So why not embrace it?

Human beings are master adapters. Thrust into a hostile environment, or subjected to other overwhelming forces, we quickly adapt to new demands, however harsh they may be. Then we maintain our new skill set with impressive devotion.

And that is the problem: We embrace our skills long after their usefulness has passed.

Gynecologic surgeons are guilty of the same failing. Although we know the vaginal route to be safer, quicker, cheaper, and easier on the patient, 65% to 70% of us still perform hysterectomy using the abdominal approach.[1,2]

The reason? That was the way we were taught, back in the sometimes hostile years of residency, and no compelling force since has caused us to update our behavior.

Let us not cling to abdominal hysterectomy when a less invasive alternative would be better for the patient. Like the vaginal approach, the laparoscopic route has much to offer. Although some surgical teachers have successfully integrated laparoscopic surgery into their residency training programs, many more opportunities are needed. Applications for laparoscopic fellowships continue to increase in number, largely because young physicians feel their training is deficient in this area.

The time has come to refocus our attention on the alternatives to abdominal hysterectomy, and to learn and perform the least invasive surgical approach whenever possible. This article explores in brief the indications, goals, and basic technique for laparoscopic hysterectomy, and the technological developments that have made it timely and safe.

Indications

As always, a thorough pelvic–rectal examination and evaluation of uterine mobility and vaginal accessibility remain the standard of care for deciding the route of hysterectomy. We believe—as many surgeons do—that the size of the uterus is usually irrelevant when determining the surgical approach.

Laparoscopic-assisted vaginal hysterectomy is indicated when the surgeon needs to remove the uterus and cervix vaginally at the time of other laparoscopic procedures, such as excision of endometriosis, appendectomy, or salpingo-oophorectomy.

Total laparoscopic hysterectomy is warranted when vaginal exposure is inadequate, a large uterus would make the vaginal approach too difficult, the patient has undergone multiple surgeries, or an adnexal mass is suspicious for malignancy.

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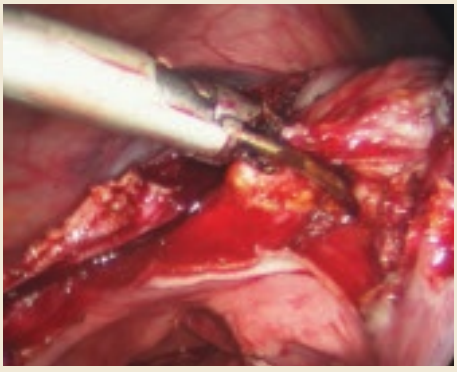
FIGURE 1

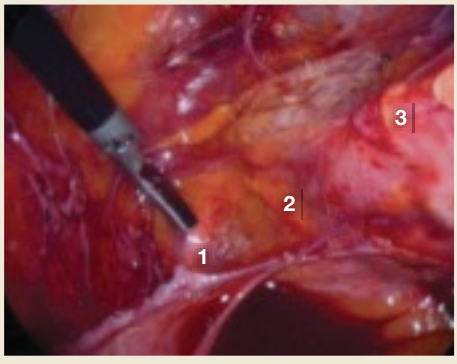
Secure the uterine vessels



The left ascending uterine vessels are secured using the curved, ultrasonic shears.

FIGURE 2

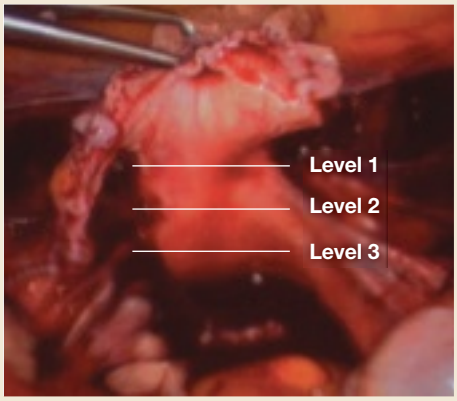
Proximity of key structures



Because the ureter (no. 1) and uterine vessels (no. 2) are in close proximity, it is advisable to secure the vessels at the ascending branches (no. 3).

FIGURE 3

Three levels of tissue



Level 1 corresponds to the ascending uterine vessels, level 2 to the uterosacral–cardinal ligament junction, and level 3 to the cervical–vaginal junction.

***FAST** TRACK*

To avoid the ureter, secure the uterine vessels at the ascending branches rather than at their entry into the lower uterus

Supracervical laparoscopic hysterectomy is appropriate when there is normal pelvic support without dyspareunia or cervical abnormalities.

Goals of laparoscopic hysterectomy

For both total and supracervical hysterectomy, the first goal is to secure the uterine vessels (**FIGURE 1**). This goal can be achieved using a number of tools:

- Electrosurgery with bipolar cautery
- Harmonic energy
- Vascular clips
- Ligating suture

Our preference is to clamp and coagulate the uterine vascular bundle using curved ultrasonic shears (Harmonic Ace).[3]

Secure the uterine vessels at the ascending branches rather than where they enter the lower uterus, as the latter area is in close proximity to the ureter (**FIGURE 2**). To ensure hemostasis when using the ultrasonic shears, relax tissue tension and activate the device using minimum power.

Secondary goal: Identify tissue structures

To identify the 3 levels of tissue structures in the lower pelvis, it is necessary to manipulate the uterus. We recommend learning to use a laparoscopic uterine tissue manipulator instead of a cervical–vaginal manipulator. The former makes it possible to maintain visualization throughout the procedure, obtain adequate exposure, and control tissue tension.

The 3 levels of tissue to be identified are (**FIGURE 3**):

- Level 1—ascending uterine vascular bundle
- Level 2—junction of the uterosacral–cardinal ligaments
- Level 3—junction of the cervix and vagina

If the uterus is large enough to interfere with visualization of the uterosacral–cardinal ligaments or the cervical–vaginal

junction, or both, in situ tissue morcellation is warranted. This debulking should eventually allow visualization of the lower tissue structures.

How tissue levels come into play

Total hysterectomy. Level 3 is the endpoint. Once the uterine vessels are secured and the levels are identified, perform anterior and posterior colpotomy (**FIGURE 4**). Using traction and countertraction, coagulate and divide the broad ligament, starting at level 1 and ending at level 3. Perform this step bilaterally.

Remove the cervix, uterus, and adnexa (if planned) via the vagina. Close the vaginal cuff using laparoscopic suturing for appropriate cuff support.[4]

Supracervical hysterectomy. Level 2 is the endpoint. Begin at level 1 using reverse cone drilling (**FIGURE 5**). This will enable you to reach level 2. Then extract the uterus using the tissue morcellator.

Laparoscopic-assisted vaginal hysterectomy. Clamp, cut, and ligate the uterine vessels vaginally.

Always locate the ureter

Regardless of the type of hysterectomy being performed, it is critical to observe the ureter and ensure that it is out of harm's way before securing the uterine vessels and identifying the tissue levels.

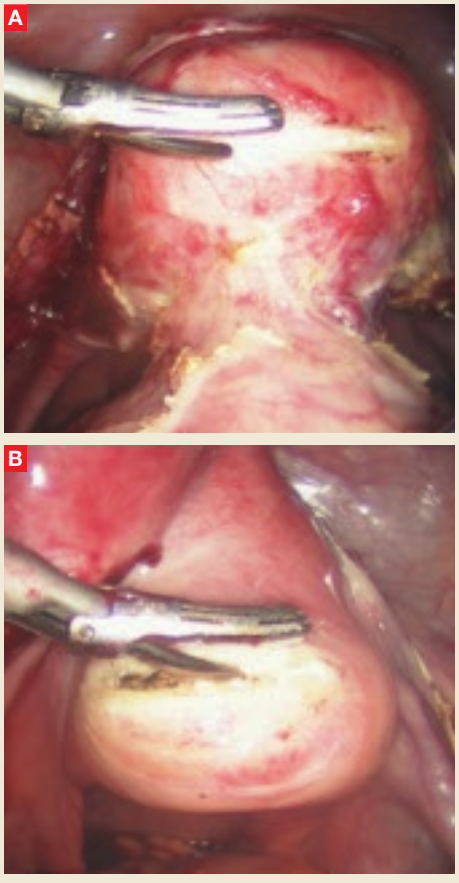
At the end of the procedure, always reduce intra-abdominal pelvic pressure to 5 mm Hg and check all tissue sites for hemostasis.

It isn't the same old OR

Not so long ago in the mid-1980s, we had fewer trocar options, laparoscopic suturing was limited, unipolar cautery was popular, endocutters could not guarantee hemostasis across staple lines, laparoscopes were large, images were unpredictable, monitors and cameras were nonexistent, and gas insufflators were bulky and slow. Despite these shortcom-

FIGURE 4

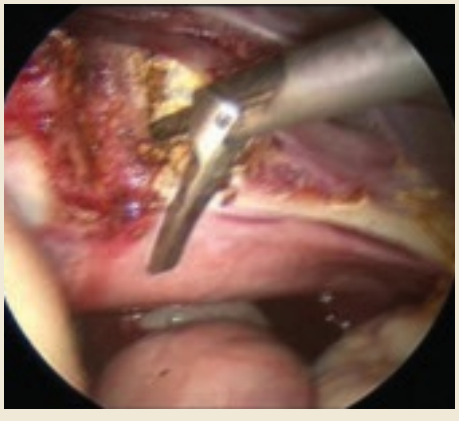
Anterior and posterior colpotomy



After the uterine vessels are secured and the 3 tissue levels have been identified, perform anterior (A) and posterior (B) colpotomy.

FIGURE 5

Supracervical hysterectomy



Begin the procedure at tissue level 1 using reverse cone drilling to reach the level 2 endpoint.

***FAST** TRACK*

Always ensure that the ureter is out of harm's way before securing the uterine vessels

ings, many surgeons and nurses believed minimally invasive surgery conferred advantages worth pursuing.

Then Semm pelviscopy (Kiel, Germany) reached the United States and intrigued American surgeons, both general and gynecologic.[5] The ability to suture laparoscopically was crucial to the success of advanced operative laparoscopy.[6] Laparoscopic cholecystectomy emerged, hastening further improvements in equipment and instrumentation.

Beginning in the late 1990s, laparoscopic surgeons witnessed even bigger changes in operating room technologies. The Internet increased the patient's understanding of her options, and this new awareness motivated hospitals, industry, and physicians to upgrade women's surgery. One result was specialized gynecologic OR nurse directors with telesurgery/telemedicine integrated into the suites. Digital platform cameras; smaller, clearer laparoscopes; and voice-activated lighting soon followed, as did better insufflators, image capturing, and other advances.

Today we rely on safer electrosurgery units (bipolar and tripolar) and "harmonic" energy.[7] Tissue extractors enable us to remove large volumes of tissue quickly and safely. And all these developments have led to proven, enhanced outcomes for the patient.[3]

A promising future

The future for advanced operative laparoscopy is bright. As patients continue to press for minimally invasive procedures, the range of surgical options available to them will expand. To keep up, we will have little choice but to acquire expertise in minimally invasive applications. ■

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