Gynecologists Ami Shah, MD, and Valena Soto-Wright, MD

Easing the Pain of Gynecologic Surgery

It was supposed to be a routine checkup. But when an ultrasound in the summer of 2004 showed an abnormal mass on Robin Lofgren's right ovary, her doctor wasn't about to take any chances.

Three years earlier, only days after the September 11 terrorist attacks, Lofgren lost her mother to ovarian cancer. The loss seemed to trigger a host of gynecological health problems for Lofgren, including uterine fibroids—noncancerous tumors of the uterus—heavy menstrual bleeding, and an enlarged uterus.

"When my doctor got my ultrasound results last June, she called and told me to 'come back to her office immediately,'" says Lofgren. "When I got there, she already had an appointment card written for me to see a specialist."

Lofgren, who lives in Lyndenborough, NH, was referred to Valena Soto-Wright, MD, a gynecologic oncologist at Lahey Clinic.

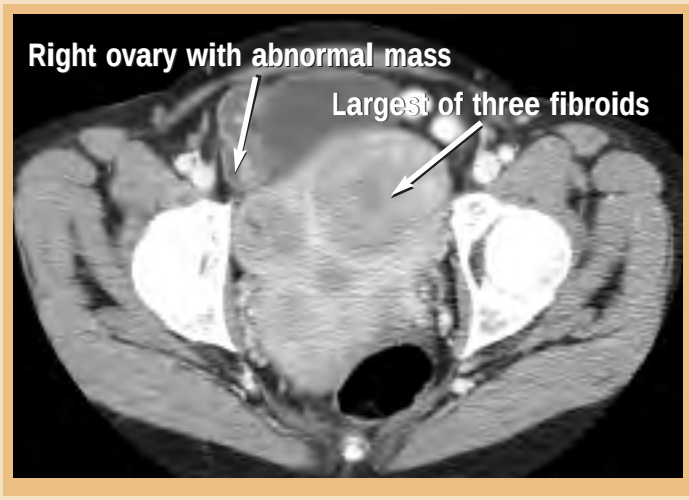
"My doctor thought it would be better to have a cancer specialist perform my surgery, due to my medical history and my enlarged uterus," says Lofgren.

For Lofgren, however, the best part about meeting Soto-Wright was her expertise in gynecologic laparoscopy.

Minimizing Incisions, Maximizing Options

According to Ami Shah, MD, a gynecologist at Lahey, there are two types of minimally invasive techniques used to diagnose and treat women's health problems: laparoscopy and hysteroscopy.

"Laparoscopy is how we examine the reproductive organs by use of a miniature video camera inserted through a tiny incision at the belly button," says Shah. "We use laparoscopy for many conditions. For example, if we're not sure what's causing a patient pain, a



This pelvic CT scan shows uterine fibroids and right ovarian cystic change.

diagnostic laparoscopy helps us view the pelvic organs to find the cause of the pain. The camera provides superior visibility, which in turn allows for treatment if necessary."

In a typical laparoscopic procedure, a 5 or 10 millimeter incision is made in the patient's belly button and a camera of equal size is introduced into the abdomen. After inserting the camera, the surgeon injects carbon dioxide into the area to elevate the abdominal wall, creating more space for viewing and manipulating the organs. In some procedures, extra, small incisions, or ports, are made above the pubic bone, or above the pelvic bone on the lower left or right side. These extra ports allow the surgeon to insert instruments that can move organs, cut tissue, suture and staple structures as needed.

"Let's say a patient has an ovary that's diseased or causing pain, and we want to remove the ovary. Now we can place these long, thin instruments into the port sites and do it all by viewing it on a camera screen, instead of opening the patient up and using our hands," says Shah.

Besides producing minimal scarring, laparoscopic procedures typically require less recovery time than traditional surgeries.

"Complications from infection and blood loss are also much lower," says Shah. "The one major risk is perforating an organ when you put the camera in, but this is very rare."

Similar to laparoscopy, hysteroscopy involves visualizing the inside of the uterus with a camera, allowing any abnormalities within the lining of the uterus to be diagnosed. However, unlike with laparoscopy, no abdominal incisions are necessary.

A hysteroscopy starts out like a pap smear. The doctor inserts the vaginal speculum to visualize the cervix. Once the cervix is in view, a hysteroscope—a long rod 3 to 4 millimeters wide with a video camera and light attached to the end of it—is then inserted through the cervix into the uterus.

"This is a good procedure for women who have abnormal bleeding," says Shah, "or who might have a polyp or fibroid in the uterus and would prefer to have it cut out without removing the whole uterus, as in a hysterectomy."

A diagnostic hysteroscopy is used to evaluate a problem with the uterus and can usually be performed in the doctor's office. Should treatment be necessary, an operative hysteroscopy can then be performed (often these two procedures are done in combination with one another). When an operative hysteroscopy is necessary, a slightly wider (8 to 10 millimeters) hysteroscope is used in order to accommodate the appropriate surgical instruments, such as small scissors or a wire loop.

According to Shah, who performs about 70 to 80 percent of her cases through laparoscopy or hysteroscopy, most of these procedures are day surgeries. "The patient is out of the hospital more quickly, but probably the biggest advantage is a much faster recovery time. Patients are usually up and walking that day, driving in three to five days, and back to normal much faster than with traditional, open surgery."

Combining Tradition with Innovation

Gynecologists have always been on the forefront of minimally invasive surgery. Throughout the 1960s and 1970s—despite the "large problems require large incisions" thinking that still pervaded many areas of medicine—gynecologists were developing laparoscopic techniques and carrying out small surgical interventions on a regular basis.

(Continued on page 6)

"Lahey was one of the first places to add laparoscopy into resident training," says Soto-Wright. "It's a program dedicated to teaching the most advanced techniques."

This innovative mindset continues at Lahey, where surgeons such as Shah and Soto-Wright are performing procedures that other gynecologists might not be trained or willing to do. Such was Robin Lofgren's experience.

"When I first started having fibroids, I was told by other doctors that the only way to treat them was through open surgery, that it was too risky to do it laparoscopically. Then I met Dr. Soto-Wright," says Lofgren.

According to Soto-Wright, "It requires good surgical judgment to decide who is an appropriate candidate for laparoscopic surgery. Not all patients are good candidates, particularly if there are unique circumstances or if the patient has had many previous surgeries."

In Lofgren's case, it was a multifibrous, enlarged uterus that made the situation more complicated. "In the end, we decided to combine a newer procedure with an older one and do a laparoscopic assisted vaginal hysterectomy, or LAVH," explains Soto-Wright. Using the minimally invasive approach, Soto-Wright was able to determine that Lofgren's ovarian mass was not cancer. Then her uterus was removed through the vagina, along with both ovaries and her fallopian tubes. No abdominal incision was necessary.

For Lofgren, the procedure was more than she could have hoped for. "Everyone at Lahey made me feel comfortable, and my recovery was so fast. I expected to be in the hospital four to five days, but my daughters, Kim and Inger, picked me up the next day and took me to our summer house on Cape Cod. The following Saturday, I was off to a yard sale!"

Leaving the Cervix in Place

Laparoscopic supracervical hysterectomy (LSH) is another innovative minimally invasive technique being performed at Lahey. Using advanced laparoscopic techniques, LSH allows gynecological surgeons such as Mary Briggs, MD, to remove a woman's uterus (and ovaries if necessary) through a small abdominal incision, without removing the cervix and without having to make any vaginal incisions. "Unlike with traditional surgery," says Briggs, "patients having LSH can typically leave the hospital within 24 hours of their surgery and return to normal activities within 10 days."

The benefits to leaving the cervix in place include lower risk of surgical complications such as infection, bleeding or injury to the urinary tract. "More patients are requesting that the cervix be left in place if it is normal," notes Briggs, "and this is safe as long as regular Pap smear screening is continued."

The Future of Minimally Invasive Surgery

Currently, laparoscopy and hysteroscopy are being used primarily for diagnosing and treating benign conditions such as endometriosis, ovarian cysts, fibroids and abnormal bleeding.

"There's simply not a lot of long-term data yet to support using minimally invasive techniques in cases of cancer," says Soto-Wright. "Diagnostic procedures—evaluating masses on an ovary or in the fallopian tube—are being done, but they are still controversial."

One current study by the Gynecologic Oncology Group (GOG) hopes to prove that patients with endometrial cancers treated with laparoscopic surgery have equivalent long-term survival rates as those treated by traditional surgery. "The research looks promising," says Soto-Wright. "Nonrandomized studies have shown similar survival rates for patients treated with laparoscopic surgery and marked reduction in length of hospital stay and recovery time."

Lahey is also educating a new generation of laparoscopic surgeons. The Marino Center is a state-of-the-art training lab that teaches minimally invasive techniques to residents and fellows. "Lahey was one of the first places to add laparoscopy into resident training," says Soto-Wright. "It's a program dedicated to teaching the most advanced techniques."

With more skilled surgeons, more health benefits, and fewer risks for patients, the future of minimally invasive gynecologic surgery looks bright.

"Minimally invasive is the wave of the future," concludes Soto-Wright. "No doubt, patients will demand it more and more."

To make an appointment with a gynecologist at Lahey, call 781-744-3250.

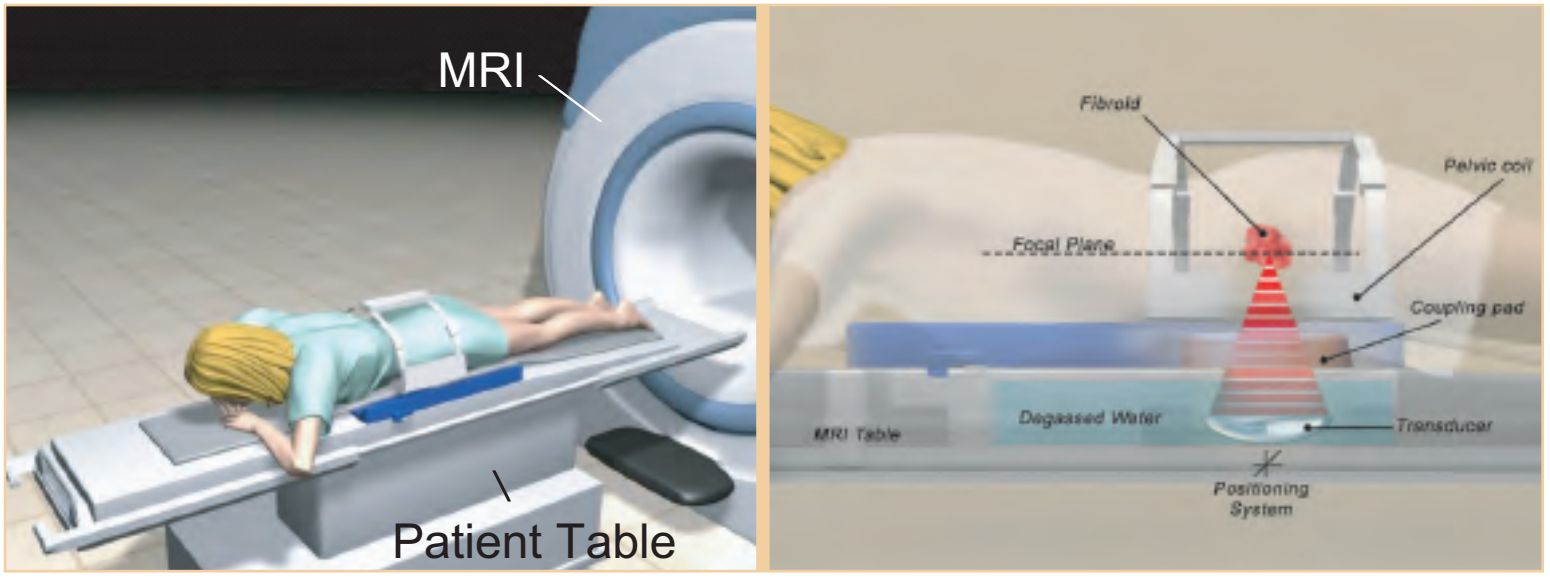


Illustration supplied by InSightec.

MR-guided high-frequency ultrasound is a technology used to destroy tumors without surgery. During the procedure, the patient lies on a table that fits inside a magnetic resonance imaging machine. Inside this table is a device that generates ultrasound and focuses it on the uterine fibroid, effectively ablating the fibroid tissue.

Innovative Methods for Treating Uterine Fibroids

The Centers for Disease Control and Prevention estimates that about 25 percent of women in the United States have symptomatic, noncancerous tumors of the uterus called fibroids. Roughly 250,000 women undergo surgery for fibroids each year.

Lahey recently began using MR-guided focused ultrasound technology (known as MR-FUS) as a way of treating uterine fibroids without surgery in eligible patients. In October 2004, MR-FUS was approved by the Food and Drug Administration for the treatment of uterine fibroids.

During the MR-FUS procedure, the patient is asked to lie down on a surface covered by water and a gel pad, which aid the flow of ultrasound into the body. An interventional radiologist sits in an adjacent room, using a computer to guide both the MRI and ultrasound machines. MRI is used to precisely locate the fibroid. Meanwhile, the physician targets the fibroid with the ultrasound and adjusts the power and width of the beam. By measuring the temperature of the fibroid with MRI, the physician can determine when the ultrasound beam is adjusted to a level that is optimal for destroying fibroid tissue.

The entire treatment for a uterine fibroid currently takes about three hours, and the patient typically stays for about an hour after treatment to be observed. The procedure is relatively painless when compared to traditional surgery. Patients are conscious and given a sedative such as Valium and a pain medication. After the procedure, the patient rarely needs any further pain medication.

"This new procedure is less invasive than traditional surgery, or even uterine artery embolization, because we are not putting any instruments into the body of the patient. We are instead delivering energy through the patient's body, and this is something people are familiar with, since many patients have had X-rays and ultrasounds before," says Raffael Bruno, MD, Gynecology. Bruno, Alison Dick, MD, and Mary Briggs, MD, are co-investigators for the evaluation of this technology for the treatment of fibroids.

For more information, visit our Web site: www.lahey.org