

UNC FIBROID CARE CLINIC

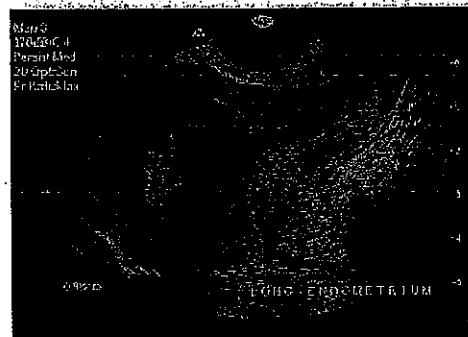
BASIC INFORMATION ABOUT FIBROIDS

Fibroids (also called myomas or leiomyomata) are benign tumors of the smooth muscle cells of the uterus. They are extremely common, affecting 70-80% of women, but not all women experience symptoms of fibroids, such as abnormal bleeding, painful periods, pelvic pressure or pain, altered bladder or bowel function, or infertility. Treatment differs from person to person and depends on symptoms as well as the number, size, and location of the fibroids.

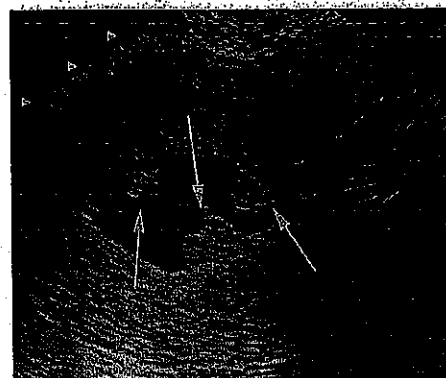
DIAGNOSTIC TESTS FOR FIBROIDS OR PELVIC MASS

Several diagnostic tests may be used to diagnose or better describe fibroids or other pelvic tumors. They may help to plan the method of treatment or to follow fibroid size. It is important to remember that no test is perfect, but the following tools can help you and your medical team make careful and logical decisions.

Ultrasound uses high-frequency sound waves to provide images of structures in the body, such as the uterus, ovaries, fibroids, or other tumors. The sound waves are transmitted by a hand-held transducer, which may be used abdominally, or, for more clear images of the uterus and ovaries, vaginally. Ultrasound is painless and safe, and it may be used to diagnose a fibroid or follow its growth.



Saline Infusion Sonogram (SIS) (also referred to as a sonohysterogram) is an ultrasound performed while sterile water is injected into the uterus through a small catheter placed in the cervix. The water pushes the uterine walls apart, allowing for better visualization of the inside contour of the uterus. This procedure can determine the size and location of fibroids or polyps and their relationship to the uterine lining (endometrium). It can be especially helpful in planning a hysteroscopic myomectomy. Cramping may occur, but usually responds well to ibuprofen.





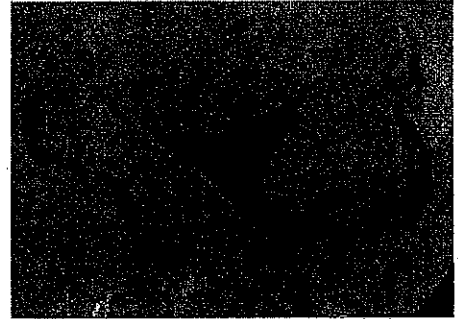
UNC
HEALTH CARE



Advanced Laparoscopy and Pelvic Pain
within the scope

UNC FIBROID CARE CLINIC

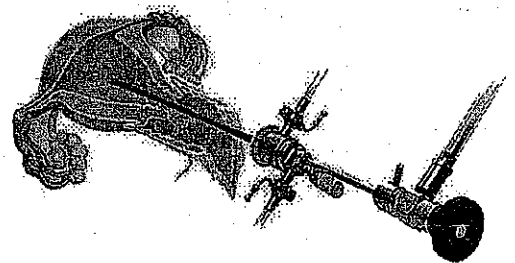
Hysterosalpingogram (HSG) is an X-ray of the uterus and fallopian tubes. During this procedure, an iodine-containing dye is injected through the cervix into the uterus, which spills through the fallopian tubes if they are open. The dye can reveal distortion of the tubes and uterine cavity from scarring, polyps, or fibroids. Times this test cannot be used include pregnancy, active pelvic infection, or allergy to contrast dye, iodine, or shellfish. This test is best performed just after a menstrual period.



Magnetic Resonance Imaging (MRI) uses powerful magnets that act on the water molecules of the body to produce images of internal organs. This test can sometimes be better at quantifying the number and size of fibroids, especially when planning a myomectomy (surgical removal of a fibroid). MRI is safe, but patients with certain metal implants should not have an MRI. Intravenous contrast dye is sometimes used. Because the MRI scanner is a narrow tube, some individuals experience claustrophobia and may need anti-anxiety medication or help with relaxation techniques.



Hysteroscopy is a surgical procedure that uses a narrow camera (hysteroscope) passed through the cervix to examine the inside of the uterus. Liquid is injected with the camera to open the walls of the uterus so the entire cavity can be seen. It is used to diagnose abnormalities such as scarring, polyps, or fibroids that affect the uterine lining. *Operative hysteroscopy* involves treating these conditions by inserting small instruments, sometimes with electrical energy, alongside the hysteroscope to remove abnormal tissue. Hysteroscopy is generally an outpatient procedure and requires sedation or light anesthesia.



Endometrial biopsy is a test where a small catheter is placed through the cervix to remove a sample of the uterine lining (endometrium). It can diagnose uterine cancer or precancerous hyperplasia. Because women over 35 years old are at higher risk for these conditions, it is recommended a biopsy be obtained when abnormal bleeding is present. Women with other risk factors for the disease, such as obesity and diabetes, should also have biopsies. It is performed in the office; cramping is usually short-lived and abates with ibuprofen.



UNC
HEALTH CARE



Advanced Laparoscopy and Pelvic Pain
within the scope

UNC FIBROID CARE CLINIC

MEDICAL TREATMENT OPTIONS for UTERINE FIBROIDS

Nonsteroidal anti-inflammatory drugs (NSAIDs) are a first-line treatment for the pain and discomfort associated with fibroids. Examples of NSAIDs include ibuprofen (Advil ®, Motrin ®, Midol ®) and naproxen (Aleve ®). NSAIDs limit the body's production of prostaglandins, chemicals that cause uterine cramping. NSAIDs work best if they are taken on a regular schedule, beginning several days before the start of a period. NSAIDs should not be taken with food and avoided in patients with stomach ulcers or allergies to aspirin.

Oral contraceptive pills (OCPs) can control pain and bleeding associated with fibroids by limiting the length and amount of bleeding with periods. OCPs contain the hormones estrogen and progesterone or progesterone alone. Limited evidence does not support that OCPs either increase or decrease fibroid size. OCPs that contain estrogen may increase the risk of forming blood clots in the legs or lungs, particularly for smokers over the age of 35.

Progesterone, in addition to progesterone-only OCPs, is also available as an injection (Depo Provera ®), implant (Implanon ®), or pill form (Provera ®, norethindrone or Aygestin ®, Megace ®). By thinning the lining of the uterus, progesterone can temporarily control bleeding due to fibroids.

Mirena ® IUD was developed as a contraceptive device, but, because it releases progesterone, it also thins the lining of the uterus and decreases menstrual flow and cramping. Periods stop altogether for many women after six months to a year. It is safe for most women and does not usually cause side effects because the progesterone acts mainly in the uterus; very little is absorbed into the bloodstream.

Gonadotropin releasing hormone agonists (GnRHa), such as leuprolide (Lupron ®), interrupt the ovaries from producing estrogen and progesterone. Menstrual bleeding usually stops and, because fibroids are fed by the body's hormone production, can shrink in size. These medications simulate menopause, so they can't be used long-term. Hot flashes, vaginal dryness, and mood changes are common. Leuprolide can be a temporary treatment if a woman is near natural menopause or prior to surgery to increase the chance of being able to use a smaller incision or decreasing blood loss. It is not unusual for a woman to experience an increase in bleeding shortly after receiving the first injection of leuprolide.



UNC
HEALTH CARE



Advanced Laparoscopy and Pelvic Pain
within the scope

UNC FIBROID CARE CLINIC

Hysteroscopic myomectomy is used for fibroids close to the uterine lining (called “submucosal fibroids”). Here, a camera similar to that used in laparoscopy, is inserted through the cervix into the uterine cavity and the fibroid is shaved off in layers using electrical energy to cut through the tissue. General anesthesia is required, but it is usually an outpatient procedure.

Vaginal myomectomy is used when submucosal fibroids grow through the uterine lining and, over time, begin to deliver into the vagina by dilating the cervix. This doesn’t happen very often and usually causes severe bleeding. In this case the fibroid is removed through the vagina. The cervix returns to its original shape within 1-2 weeks.

HYSTERECTOMY

Hysterectomy is the surgical removal of the uterus. To do so, it is separated from the vagina, bladder, ovaries, blood supply, and ligaments attaching it to the walls of the pelvis. Like myomectomy, it is considered a major pelvic surgery and carries similar risks. For a woman who has completed her childbearing and is interested in surgical treatment of fibroids, it is the treatment of choice as it eliminates, rather than improves, the symptoms associated with fibroids. Also, at times it might be possible to complete a hysterectomy laparoscopically when it would not be feasible to perform a myomectomy that way.

A *total hysterectomy* involves removing both the uterus and cervix (the lower part of the uterus—it’s the opening that dilates when a pregnant woman is in labor and the place where cells for a pap smear are taken). This does NOT necessarily mean removing the ovaries as well.

A *supracervical (“subtotal”) hysterectomy* involves separating the uterus and cervix and removing only the body of the uterus that contains the fibroids. The cervix remains attached to the vagina. It was previously thought that leaving the cervix was associated with less pelvic organ prolapse or better sexual function, but the best data we have now does not support these hypotheses. When the cervix is left, pap smears are still required and there is a small (around 5%) chance of having monthly bleeding like a period after surgery.

There are three main techniques to perform a hysterectomy:

Abdominal hysterectomy, like an abdominal myomectomy, is performed through a horizontal or vertical incision and uses traditional instruments and techniques to remove the uterus. The risks of this surgery include those for pelvic surgery in general as described above. Recovery, like for abdominal myomectomy, usually requires 4 – 6 weeks.



UNC
HEALTH CARE



*Advanced Laparoscopy and Pelvic Pain
within the scope*

UNC FIBROID CARE CLINIC

Vaginal hysterectomy utilizes only an incision in the vagina to detach and remove the uterus. No abdominal incisions are required. Women who have had vaginal deliveries and who have smaller fibroids are usually better candidates for this approach to hysterectomy. One night hospital stay is generally required and recovery time is similar to that for laparoscopic hysterectomy, usually around 2 – 3 weeks.

Laparoscopic hysterectomy utilizes small incisions and trocars to access the abdomen, as in laparoscopic myomectomy. Four to five incisions are required. Patients usually spend one night in the hospital and recovery is around 2 – 3 weeks. As in laparoscopic myomectomy, laparoscopy affords less pain with surgery, faster recovery, usually less blood loss from the surgery, and a better cosmetic outcome than with abdominal hysterectomy. Our division at UNC specializes in performing this procedure even when the uterus is markedly enlarged from fibroids. Sometimes Lupron ® (see GNRH agonists in “medical therapies” section) is used to shrink the uterus to make it more likely to complete the procedure with laparoscopy.

Robotic-assisted laparoscopy utilizes the da Vinci ® surgical system to provide advantages such as 3-D visualization and finer instrument control. The incisions might be in slightly different locations, but are the same as those used for conventional laparoscopy, so the recovery time is no different. Many times laparoscopic hysterectomy can be done with or without the robotic system and is more a matter of surgeon preference.

Should the ovaries be removed at the time of hysterectomy?

Many people refer to a hysterectomy with removal of the ovaries as a “total hysterectomy,” but as described above, “total” refers to removing the uterus and cervix. Removing the ovaries (oophorectomy) is not necessary for a hysterectomy.

When the ovaries are removed, menopause begins immediately for women still menstruating. The side effects of menopause can be helped with the addition of hormone replacement. Hormone replacement can include progesterone and estrogen, but, when the uterus is removed, only estrogen is needed. There is no increased risk of breast cancer among women who only need estrogen for hormone replacement.

Generally, women over 45 were recommended to have their ovaries removed at the time of hysterectomy to prevent the development of ovarian cancer and the need for future surgery. Although ovarian cancer is a very dangerous disease, it only affects about 1.5% of women. When large studies evaluated mortality in women who retained their ovaries at the time of hysterectomy and those who had them removed, survival rates were higher among those who kept their ovaries. Mostly this was due to a decreased risk of heart disease. If you have a history of breast cancer or ovarian cancer in your close family, your risk is higher and could warrant having the ovaries



UNC
HEALTH CARE



Advanced Laparoscopy and Pelvic Pain
within the scope

UNC FIBROID CARE CLINIC

removed, but, in general, we tend to recommend retaining ovaries unless a woman is in her mid-50s or older. Ultimately, this is an individual decision. Abnormal appearing ovaries should be removed. Sometimes large fibroids make it impossible to keep the ovaries and still remove the uterus, and some women have pain that localizes to an ovary, all reasons oophorectomy is indicated.

FIBROIDS, FERTILITY, and PREGNANCY

Most women with fibroids have no difficulty with fertility and have uncomplicated pregnancies. Some women, however, particularly with very large fibroids or ones that distort the uterine cavity, may have trouble conceiving or may experience miscarriage or preterm birth. Fibroids can be large enough to prompt a cesarean, rather than vaginal, delivery. Changes in blood flow to the uterus and hormone levels can cause fibroids to grow and become more painful during pregnancy.

Women with fibroids who also experience infertility may need additional tests to assess other contributing factors, including blood tests, imaging, or a semen analysis of their partner's sperm.

Removing certain types of fibroids can improve fertility, but this is to be weighed against the potential for scarring between the uterus and other nearby structures such as the fallopian tubes and intestines. Having multiple myomectomy surgeries increases this risk.

We generally recommend women wait at least 3 months after myomectomy before trying to get pregnant so the uterus has a chance to heal from the surgery. Many women will need to have a cesarean delivery to avoid the chance of the uterine scar breaking down during labor.

Generally, medical treatments won't interfere with future pregnancy plans, but treatments such as uterine artery embolization (UAE) and especially endometrial ablation are not recommended for women who wish to have children in the future as it is not known how the change in blood flow after these procedures will affect a developing fetus. Rarely, UAE can lead to premature failure of the ovary (premature menopause).



UNC
HEALTH CARE



Advanced Laparoscopy and Pelvic Pain
within the scope

UNC FIBROID CARE CLINIC

UTERINE ARTERY EMBOLIZATION FOR FIBROIDS

Uterine artery embolization (UAE) is a uterus-sparing, minimally-invasive procedure performed by an interventional radiologist to block the the main blood supply to uterine fibroids. This causes fibroids to shrink, usually decreasing their volume 40-50% over six months. Most women (80-85%) experience a decrease in bleeding and pressure symptoms.

UAE is usually performed with intravenous sedation. The interventional radiologist makes a small incision (1/4 inch) in the groin area and inserts a catheter through the femoral artery. Using fluoroscopic (x-ray) guidance, the catheter is carefully threaded into the uterine artery. Tiny round particles are injected into the blood vessels feeding the fibroids. Both the right and left uterine arteries can be accessed through one skin incision. The procedure usually lasts between 1 to 2 hours, and patients are admitted overnight for observation. Recovery time is usually around a week, but depends on the number and size of fibroids.

Most women require pain medication; other symptoms include nausea, vomiting, fever, vaginal discharge, and muscle aches, but these usually resolve in 1-2 weeks. Severe complications such as injury to major blood vessels, unintended blood clots in the leg, infection, or decreased ovarian function that leads to early menopause, are rare.

UAE avoids surgery and allows for faster recovery than when a traditional surgical incision is used (laparotomy), but it is appropriate only for certain types of fibroids. Very large fibroids, or those which are connected to the uterus by a stalk (called a "pedunculated fibroid") don't respond well to UAE. Because it does not completely eliminate fibroids, approximately 5% of patients will later pursue surgical treatment for new or recurrent symptoms. At the present time, UAE is not recommended for women who may wish to become pregnant in the future because we don't know what effect decreased uterine blood flow could have on a developing fetus.

UNC FIBROID CARE CLINIC

SURGICAL TREATMENT FOR FIBROIDS

MYOMECTOMY

Myomectomy is the surgical removal of uterine fibroids without removal of the uterus. The main advantage of this surgery is to keep open the option of becoming pregnant in the future. The choice of technique depends on the size, number, and location of fibroids, as well as patient characteristics such as obesity or prior surgery. It is sometimes impossible to remove all fibroids, and they can recur after myomectomy. Depending on the extent of surgery, a cesarean delivery may be required for future pregnancies to decrease the risk of the uterine scar breaking open during labor. We are, of course, very careful to avoid unintended problems, but the general complications of gynecologic surgery include bleeding, infection, and injury to the organs near the uterus. Sometimes a blood transfusion is required (be sure to let your doctor know if you are unable to receive blood transfusions before considering any surgery), and rarely an unplanned hysterectomy is needed to control excessive uterine bleeding. Types of myomectomy include:

Abdominal myomectomy is performed through a vertical or horizontal incision (similar to the incision for a Cesarean section) called a laparotomy, and utilizes traditional surgical techniques and instruments. One or more incisions are made in the uterus and fibroids are shelled out from the surrounding muscle tissue. The defect(s) are sewn back together with dissolving suture. Usually, two nights' stay in the hospital are required and full recovery occurs in 4 – 6 weeks. Heavy lifting must be avoided to allow for healing of the strength layer of the abdominal wall (fascia).

A “mini-laparotomy” is sometimes possible in thin patients with easily-accessible fibroids. Mini-laparotomy involves a smaller, horizontal incision, and recovery is often comparable to laparoscopy.

Laparoscopic myomectomy is similar to abdominal myomectomy, but with laparoscopy, instruments are introduced through small incisions that accommodate trocars, or ports. The surgeon can see inside through a laparoscope, a narrow camera that most often is placed through a port in the belly button. Three to five incisions are usually required and recovery time is much faster than with laparotomy. An instrument called a morcellator cuts the fibroids into pieces that fit through these small incisions. Laparoscopy carries a decreased risk of complications such as blood clots in the legs or lungs (deep vein thrombosis) and wound infections. Depending on the extent of the myomectomy, patients are either discharged the same day or the day after surgery.

Robotic-assisted laparoscopy utilizes the da Vinci ® surgical system to provide advantages such as 3-D visualization and finer instrument control that can sometimes be helpful for tasks like suturing. The incisions might be in slightly different locations, but are the same as those used for conventional laparoscopy, so the recovery time is no different. Many times laparoscopic myomectomy can be done with or without the robotic system and is more a matter of surgeon preference.

FIBROID LOCATIONS

