



CENTER FOR WOMEN'S CARE AND REPRODUCTIVE SURGERY

Gynecologic Endoscopic Surgery

Endoscopic Myomectomy

Uterine fibroids remain the most common tumor of women of either benign or malignant derivation (1). Estimates of prevalence of range from 20-50% of adult females in most reports (2). The cell of origin is presumed to be smooth muscle cells of the uterus although other fibro muscular tissues have reportedly developed changes, which are called myomatous. Myomas may cause symptoms ranging from excessive or dysfunctional uterine bleeding, severe pain, or pressure related symptoms from excessive enlargement (1). Conversely, myomas of significant girth and weight have been described in patients with little or no symptoms. Infertility or recurrent pregnancy loss has been associated with myomas that significantly distort the uterine cavity (2).



[view
larger
image](#)

Fibroid Tumors as seen at
Laparoscopy



[view
larger
image](#)

Appearance of uterus after
removal of uterine fibroids

Growth/enlargement of uterine myomata appears to be related to the tissues exposure to estrogen (5,6). This sensitivity to estrogen has become a helpful therapeutic association as limitation of growth of these neoplasias can be seen with the use of an anti-estrogenic or pseudo-menopausal therapy prior to or in lieu of surgical therapy (7,8).

The goal of the physician caring for patients with uterine myomas is to accurately diagnose the disease, (ruling out other or more significant pathology), assess the need for medical or surgical therapy, and then choose the most efficient and more healthy alternative for that patient undergoing treatment for this extremely common gynecological disorder.

Diagnosis:

Symptoms, which may suggest the presence of uterine myomas, are:

- Dysfunctional uterine bleeding
- Anemia of undetermined origin
- Pelvic/uterine mass with rapid growth
- Uterine mass enlarging after menopause
- Recurrent pregnancy loss
- Infertility

*1140 Hammond Drive, Bldg. F-6230
Atlanta, GA 30328
770-352-0037 or
Toll free 888-545-0400*

The physical examination should be able to suggest pelvic mass although the presence of sub-clinical submucous uterine myomata may be hard to define in a routine pelvic exam. Transvaginal sonography can provide an excellent method of localization and measurement of uterine disease particularly when paired with hysterosalpingo sonography to assess submucous lesions (9).

Magnetic resonance imaging is an excellent tool but is rather expensive and not as readily available to many practicing physicians. CT scan has little or no place in routine evaluation of myomata. Flexible or rigid diagnostic hysteroscopy can target surgery for submucous lesions most accurately and may be performed in office by the physician, thus reducing the economic burden to the patient. In some cases a trial of hormonal therapy can provide information with regard to those myomata, which may be of a more suspicious nature, i.e. unresponsive tumors may suggest a more proliferative possibly malignant process (10).

Therapy

Medical therapy can be mounted in those patients who wish to conserve the uterus and/or those who have questionable indications for surgery. Therapies can include progesterone therapy (11), oral contraceptive therapy (12), Danocrine (13), GnRH agonist (14), anti-progesterone agents (RU 486) or anti-prostaglandins (15). The length of therapy with these drugs is considered variable but two dictums seem to be true:

1. Maximum reduction in uterine volume occurs at approximately 12 weeks of treatment and
2. Cessation of therapy will usually result in reoccurrence of myoma size (7).

On our service, pre-operative therapy usually involves GnRH agonist (Depo Leuprolide 3.75 mg) for three monthly injections with scheduling of surgery following the third injection. This schedule allows for maximum reduction in myoma size, reduction in active blood supply to the uterus and adequate time and stimulus for hematopoiesis allowing the patient to "auto transfuse" thereby increasing red blood cell count in the pre-operative period.

Surgical therapy may be considered conservative or more radical. If the patient has completed child bearing, she may want to consider removal of the uterus. Multiple fibroids imply a recurrence rate as much as 50%, whereas, solitary myoma return in only 10-20% of reported studies (10). However, a number of women do not wish to have the uterus removed, and therefore, should have the option of myomectomy.

In that patient who wishes to continue fertility, myomectomy can be considered either via hysteroscopy or via an abdominal approach depending upon the location of the myomata. Any patient undergoing myomectomy must be counseled regarding the risk of hysterectomy, and the risk of potential pregnancy related complications if that patient does conceive (17) these complications can be related to disorders of placentation or weakness in the uterine wall predisposing uterine rupture. Patients who have had a myomectomy who become pregnant may need to consider cesarean delivery at the fetal maturity if a significant defect is encountered.

Technique

Submucous myomas of 3-5 cm diameter may be removed by resectoscope or Nd:YAG laser resection via hysteroscopy. Myolysis can be considered hysteroscopically if appropriate. Simultaneous laparoscopy is recommended for safety and further diagnosis during these hysteroscopic procedures.

Controversy surrounds the methods of abdominal myomectomy. The major criticism leveled at laparoscopic methods of myomectomy concerns the ability to obtain adequate closure of the defect after myoma removal from the uterine wall (18). With current curved needle suturing techniques which have made retropubic suspension and posterior floor defect repair possible, most if not all of these myoma defects may be closed via laparoscopy. Most would agree that if these closures can be accomplished, the documentably lower morbidity associated with laparoscopy would make this the procedure of choice. Clinical results including lower adhesion scores (or scarring) and increased or similar pregnancy rates achieved with laparoscopic approaches to ectopic pregnancy and endometriosis would support this position (19,20). Currently pedunculated fibroids and small subserosal myomas are readily removed via minimally invasive techniques (21). It is reasonable to assume that with good clinical closure larger intramural myoma can be included in this group. The current author's experience is consistent with this assumption (Figure 1).

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Conclusion

Uterine myomas are a frequently seen gynecological malady. Only a fraction of those patients with myomas are candidates for surgical therapy. However, for those individuals with indications for surgery, all options should be explored including minimally invasive techniques. Clinical outcome data must be gathered and reported in order to evaluate these techniques and the relative morbidity. This authors experience is favorable and other clinicians have reported excellent clinical outcomes (27, 28). However, further study is required. It should be noted that there is no currently available long term or short term data comparing conventional procedures and endoscopic approaches assessing pregnancy success, uterine integrity, recurrence rates etc. In existing literature data exists only as isolated case reports and much of the data obtained is aged significantly. Currently, it seems that the only barrier preventing most patients from accessing these less morbid procedures is the endoscopic skill of their surgeon. It is, therefore, incumbent for those surgeons who care for women to develop those abilities, which can provide for our patients all choices of the most effective and least morbid surgical experience.

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