

Uterine Fibroid Embolization

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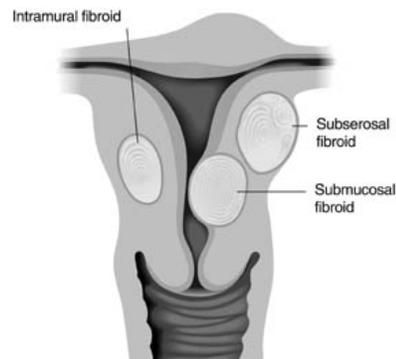
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Uterine leiomyomas (fibroid tumors) are the most common tumors in the female reproductive tract; they occur in 20-40% of women over the age of 35. Fibroids are benign tumors responsive to estrogen and increase in size and number with age and tend to regress after menopause. The most common symptom of a fibroid is heavy bleeding during menstruation (menorrhagia). This heavy bleeding can often lead to anemia. These tumors are the most



common cause of non-acute abnormal uterine bleeding. Other symptoms include pelvic pain due to uterine enlargement, frequent urination due to pressure on the bladder, constipation due to pressure on the bowel, pain during sexual intercourse, and infertility or late miscarriages

Patients are typically diagnosed with uterine fibroids after a gynecological exam during which the physician feels the uterus is enlarged. The diagnosis is confirmed either by an ultrasound examination or a MRI.

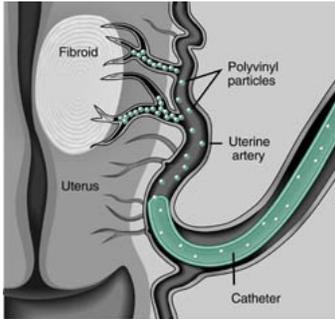


Approximately 150,000 hysterectomies are performed annually for the treatment of uterine fibroids in the United States. Although hysterectomy is reliable and completely curative, patients and physicians have been seeking alternatives to this invasive therapy. The hospital stay is short for most patients but the recovery time usually lasts 6 to 12 weeks. Also, the potential for serious complication during surgery is a risk, and many women are seeking organ-sparing therapy for their fibroid symptoms.

Alternatives to hysterectomy include hormonal therapy, myomectomy, and uterine fibroid transcatheter embolization. Hormonal therapy is effective in some patients but is associated with amenorrhea, osteoporosis, and menopausal symptoms. Myomectomy is a surgical procedure often using a laproscope and/or hysteroscope and is more technically difficult than hysterectomy. Myomectomy also has a higher risk of bleeding and subsequent need for transfusion than hysterectomy.

Uterine fibroid embolization is a new approach to a common problem. Although, pelvic embolization for bleeding has been performed for more than 20 years its use for symptomatic relief of fibroids is relatively new. More than 2000

embolizations have been performed worldwide in the last 5 years. The results have been very encouraging. **Studies have shown that 85 – 94% of patients have marked or complete resolution of symptoms requiring no additional therapy after uterine fibroid embolization.** Also, in patients with bulk symptoms (pressure, abdominal fullness) follow-up ultrasound studies demonstrate a 44 – 61% reduction in fibroid size by 3 months after uterine fibroid embolization.



The technique for uterine fibroid embolization is similar to other arteriograms. The patient receives IV sedation and antibiotics are given. Although the patient remains awake they are very comfortable. Local anesthetic is applied to the groin and a small incision is made in the skin. The common femoral artery is punctured and a catheter is passed into the aorta. Contrast material is injected and initial radiographs are taken to evaluate the blood supply of the tumor or tumors. The catheter is directed into the arteries supplying the tumor/s and particles are injected through the catheter to block the blood supply. Bilateral embolization has been shown to be more effective than unilateral embolization. The catheter is then removed and any bleeding from the artery is stopped. The entire procedure usually takes 1 – 2 hours. The procedure slows the blood supply to the tumor resulting in fibroid necrosis. A phenomenon very similar to this occurs naturally in some women when the tumor out grows its blood supply resulting in spontaneous necrosis.

After the procedure the patient stays in the hospital to control any symptoms from the embolization. Nearly all women who undergo the procedure experience some pelvic pain and cramping. They also frequently experience nausea and vomiting. These symptoms are usually well controlled with anti-inflammatory agents, antiemetics and narcotics. The patient usually goes home the day following the procedure. Rarely they may need to stay an additional day to control the symptoms of post-embolization syndrome (fever, nausea, vomiting, and abdominal pain). The patient is given an anti-inflammatory medication to take at home as the symptoms subside.

Complications from the procedure are rare. Complications from angiography occur in less than 1% of patient and include bleeding at the puncture site, allergic reaction to contrast material, infections, and arterial thrombosis. Complications from the embolization include non-target embolization (there have been no reported cases of significant pelvic organ



ischemia) however; some patients do stop menstruating after the procedure. Amenorrhea (the absence of menstruation) usually occurs in women who are peri-menopausal and may be due to uterine-ovarian arterial connections. Although there have been patients who have had children after the procedure has been performed, the effect on fertility is unknown.

In conclusion, uterine fibroid embolization is an exciting emerging technique for the control of uterine fibroid symptoms. Results have been excellent and several studies using questionnaires demonstrate that a vast majority of women undergoing the procedure would choose uterine fibroid embolization in the treatment of their fibroids if they had to make the decision again. The advantages over surgery include shorter hospitalization times and shorter recovery, and the potential for fertility. The disadvantages as compared with hysterectomy include the facts that uterine fibroid embolization is palliative instead of curative, there is the risk of later development of a malignancy in the uterus, and there is exposure to low dose radiation.

References

Uterine fibroid embolization: measurement of health-related quality of life before and after therapy. James B. Spies, MD, Elisabeth H. Warren, Susan D. Mathias, MPH, Sheila M. Walsh, RN, MA; Antoinette R. Roth; Michael J. Pentecost, MD, *JVIR* 1999; 10:1293-1303

The appropriateness of recommendations for hysterectomy. Broder MS, Kanouse DE, Mittman BS, Bernstein SJ. Department of Obstetrics and Gynecology, University of California, Los Angeles. *Obstet Gynecol* 2000 Feb; 95(2):199-205

Preliminary experience with uterine artery embolization for uterine fibroids, University of California, Los Angeles Medical Center. Goodwin SC, Vendantham S, McLucas B, et al. *JVIR* 1997;8:517-26.