

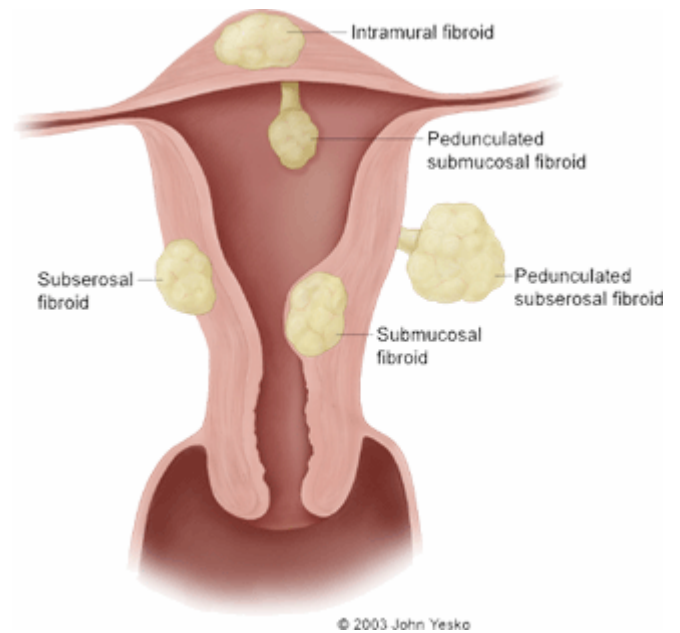
New Treatment for the most common female genital tumour

What is a uterine fibroid?

It is a benign tumor that grows from the muscular wall of the uterus and are made up of muscle and fibrous tissue. There are several types of this tumor and they are named according to its location.

Is it common to have a uterine fibroid?

Fibroid tumors or myomas, are the most common pelvic tumors, with an overall incidence of 35% to 50% among all women. One in four white women and one in two black women are affected (1). The tumors occur mainly in patients who are between ages 35 and 50 years. Leiomyomas are responsible for one third of gynecologic hospital admissions, and they account for approximately 30% of all hysterectomies (surgical removal of the uterus) (1).



Where do they come from?

The factors involved in the initiation, the development, and the growth of uterine fibroids are poorly understood (1).

However Contributory factors for the development of uterine fibroids include:

- Family history (close relative being affected).
- Race (blacks more than whites or Asians).
- Parity (nullipara -women who were never pregnant before- more than multipara).
- Obesity (increased body mass index).

What symptoms do they cause and how can I tell that I have a uterine fibroid?

In many patients those tumors are asymptomatic causing no detectable symptoms and are usually discovered accidentally during routine pelvic examination.

In symptomatic patients, the most common presenting complaints are abnormal bleeding (which can take several forms for e.g. prolonged or heavy menstrual bleeding), pain (in the form of sense of heaviness in the pelvis or back pain, pain during the menstrual cycle, pain during sexual intercourse...etc), and pelvic pressure (since the uterus is located within the pelvis and it shares place with the urinary bladder and rectum when a tumor grows in the uterus it encroaches on the adjacent organs resulting in Urinary tract symptoms in the form of frequency, urgency, incontinence, and urinary retention. Gastrointestinal tract symptoms include obstipation and constipation.

In some patients the Reproductive ability may also be compromised i.e. it can be a cause of infertility.

How to accurately diagnose them?

Diagnosis is usually made when clinicians palpate an enlarged, irregular uterus during an abdominal examination and/or a pelvic examination.

Ultrasonography is informative, providing the number, size, and location of the fibroids.

Diagnostic accuracy is enhanced by combining the abdominal and vaginal approaches.

Magnetic resonance imaging (MRI) is currently considered the most accurate imaging method for detection and localization of myomas.

What are the treatment options?

The choice of treatment for symptomatic uterine fibroids reflects the severity of symptoms, the patient's desire for future fertility, and patient and physician preferences.

Medical treatments, such as nonsteroidal anti-inflammatories, oral contraceptive pills, and progestins, are aimed at minimizing abnormal menstrual bleeding or controlling pelvic pain. These treatments are associated with minimal cost and risk, but their effectiveness in women with fibroids is limited.

Surgical interventions—myomectomy and hysterectomy—are known to be more effective, but are associated with higher cost and greater risk of morbidity. Abdominal myomectomy and hysterectomy require general anesthesia, lengthy hospital stays and lengthy recovery periods. However, despite the complete symptom resolution achieved in almost all women undergoing hysterectomy for uterine bleeding, many women are unwilling to assume the risks, discomfort, and inconvenience associated with this procedure. The attractiveness of this treatment modality is further diminished by the inevitable loss of child-bearing potential, and even women not desiring future pregnancy may complain of a sense of incompleteness after removal of the uterus(2).

Several other alternatives are available including a variety of laparoscopic, hysteroscopic, and angiographic techniques (uterine artery embolization).

What is uterine artery embolization and who do it?

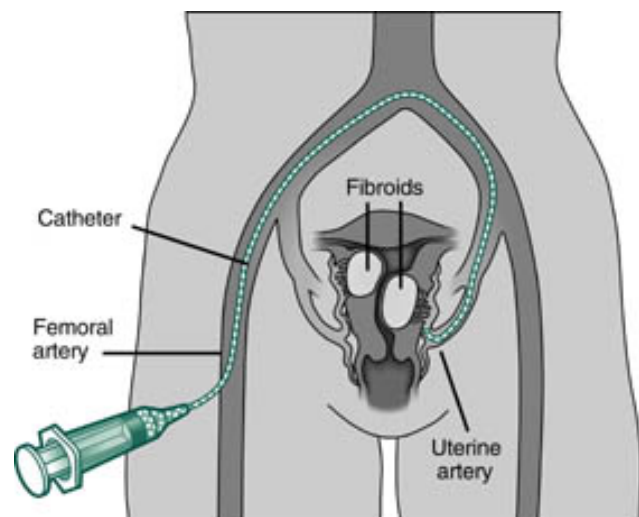
The uterine artery is the artery carrying blood to the uterus (and the fibroid tumor) and the word embolization means the injection of some material to block blood vessels and stop the blood flow. This procedure has been used for over twenty years to control various causes of bleeding from the female uterus (e.g. uncontrolled bleeding after child delivery) and it usually gave good results in these conditions. But its use in treatment of uterine fibroids started in the year 1995. The procedure is done by physicians specialized in the field of interventional radiology. The procedure belongs to the minimally invasive lines of treatment which means that the treatment is made with the least possible invasiveness unlike surgery which is considered invasive therapy.

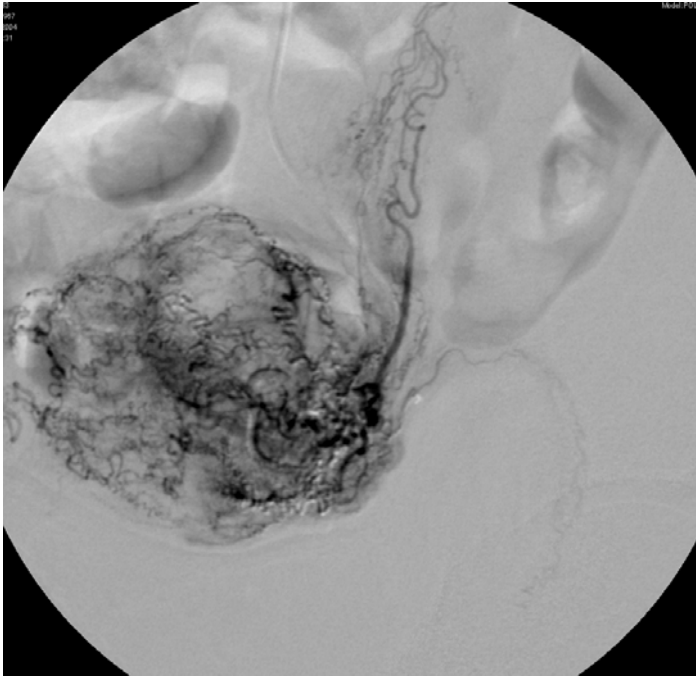
Is it still under trial?

A brief search of the literature yielded over 300 scientific articles published on uterine embolization since its introduction and it is estimated by the Society of Interventional Radiology that over 12,000 of these procedures are performed in the U.S. each year (3). In addition all devices, equipments and medications used for fibroid embolization are approved by the FDA (Food and Drug Administration) for use in people(4)

How is it done?

The procedure is done under angiographic guidance. First a local anaesthesia is injected in the groin (usually the right side) and in most of the cases general anaesthesia is not required and only some sedation maybe given during the procedure. Then a small opening is made in the artery (about the size of a needle diameter) through this opening a catheter is introduced (a thin flexible special tube) and manipulated under angiographic guidance till the uterine artery is reached and the embolizing material (which are very small particles) is injected into both uterine arteries

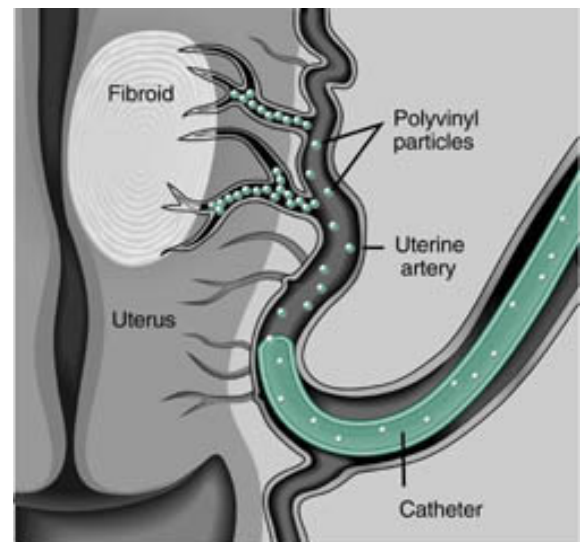




Pictures from the archive of the Institute for Diagnostic and Interventional Radiology. Frankfurt University Hospital

Can this embolizing material harm my normal uterus? Can they leave the uterus and circulate in my body?

The particles that we use are of special well calculated size which means that they go mainly to the tumor and not to the normal uterine tissue this is based on a very simple idea the arteries supplying a tumor are usually larger than those supplying normal tissues since the tumor is an abnormal growth that requires more blood than normal accordingly we use particles that are slightly larger than the size of the arteries supplying normal tissue and at the same time smaller than the size of the arteries supplying the tumor so they go selectively to the tumor in a much higher percentage than to normal tissue. Another factor is that the uterus usually has side ways from which it can drive blood when it needs it.



For the second question normally after the arteries the blood go to much smaller channels called capillaries and then it goes to the veins and to the heart thereafter and since the particles that we use are much larger than the capillaries then they can never pass the capillaries to go to the rest of the body hence they remain where we put them.

Is it safe to leave such particles inside my uterus?

It is reassuring to know that the particles most commonly used in this procedure have been available with FDA approval for over 20 years. During that time, they have been used in thousands of patients without long-term complications (4).

How many patients are being treated with this procedure?

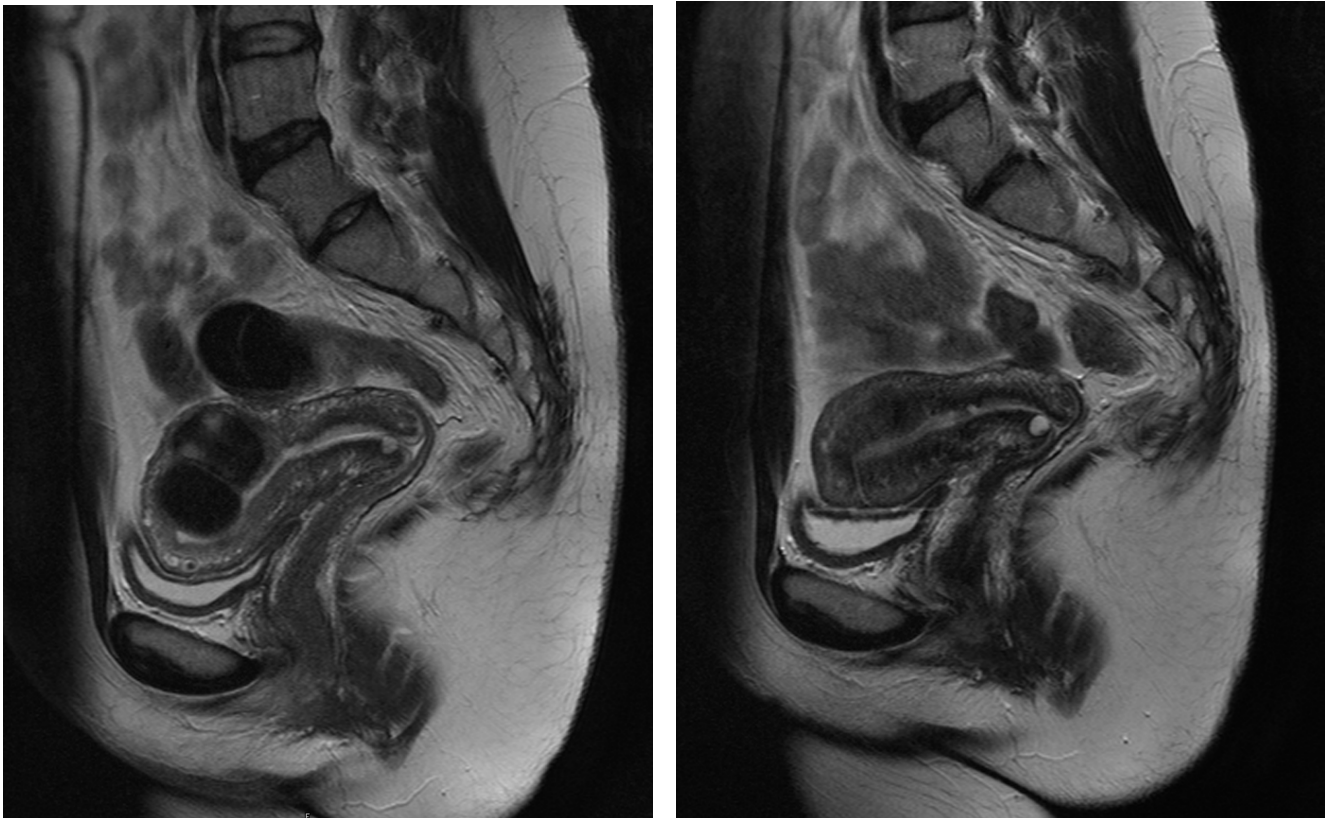
A survey of the Society of Interventional Radiology (SIR) membership in 2001 found a doubling of the number of procedures performed from 1999 (4,165 procedures) to 2000 (8,605 procedures). According to SIR, approximately 25-30,000 UAE procedures have been performed in the United States.

How successful is it?

Uterine fibroid embolization leads to an impressive mid- and long-term improvement of all investigated physical and psychological fibroid-related and fibroid-associated symptoms and significantly improves women's health-related quality of life.

A recent study published in the American Journal of Radiology stated that Uterine fibroid embolization led to a reduction of bleeding symptoms in 79.2% of patients, pain in 81.5%, bulk-related symptoms in 78.6%, urinary dysfunction in 60%, sexual dysfunction in 71.4%, fatigue in 62.5%, limitations in social life in 88.2%, and a depressed mood in 89.5% (5).

Another study conducted in the Institute for Diagnostic und Interventional Radiology, Frankfurt university hospital in association with the clinic for gynaecology and obstetrics and published in Fortschr Röntgenstr journal showed technical success rate in a range between 98 to 100 % and myomatous symptomatology disappearance in 85 to 94 % of the cases. A reduction in the size of the myomata after UAE is observed between 48 to 70 %. A resolution of the hemorrhage disappears in 80 to 96 % of the cases immediately (6).



Pictures from the archive of the Institute for Diagnostic and Interventional Radiology. Frankfurt University Hospital

What to expect after the procedure?

Following the procedure you will experience pain for the first 24 hours which is well controlled under medications, in addition there might be some nausea, slight rise in temperature all of which are well controlled under medications.

How long do I need to stay in the hospital and when can I return to work?

In fact the procedure can be done on an outpatient basis which means that you can leave on the same day but we prefer an overnight stay in the hospital for better pain control. Usually you can resume your normal activity and return to work within few days after the procedure.

What is the incidence of complications?

According to the United States Department of Health and Human Services, Agency for Healthcare Research and Quality, Uterine artery embolization is a very safe method and, like other minimally invasive procedures, has significant advantages over conventional open surgery. However, there are some associated risks, as there are with any medical procedure. A small number of patients have experienced infection, which usually can be controlled by antibiotics. There also is a less than 1 percent chance of injury to the uterus, potentially leading to a hysterectomy. These complication rates are lower than those of hysterectomy and myomectomy (7).

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