

## Uterine Leiomyoma (Fibroids) Characteristics and Presentation

Uterine Leiomyoma, commonly referred to as fibroids, is a benign smooth muscle tumor of the uterus. It is the most common gynecologic tumor with a peak occurrence in patients aged 20–40 years (reproductive years). Fibroids are best described as benign smooth muscle tumors of the uterine myometrium. Risk factors for this condition include early menarche and exposure to hormones (e.g. estrogen, progesterone). There is also an increased incidence in Black women. Most leiomyomas are asymptomatic, however many women do experience symptoms warranting therapy. Common symptoms may include abnormal menses (prolonged or heavy), infertility, and mass effect symptoms such as constipation or urinary frequency due to the fibroids exerting pressure on adjacent organs (e.g. rectum, bladder). On physical examination, the uterine contours are irregular and enlarged.



PLAY PICMONIC

### Most Common Gynecologic Tumor

#### Number (1) Foam Finger on Uterus

Uterine leiomyoma is the most common gynecologic tumor. The exact frequency is not well-defined, but ranges from approximately 7-80% and varies on factors such as age, ethnicity, and parity. Leiomyomas are classified according to their anatomic location within the tissue layers that compose the uterus. Tumors located closer to the inner or mucosal surface are classified as *submucosal* and may protrude into the uterine cavity. In contrast, tumors located on the opposite side, closer to the outer surface of the uterus are classified as *subserosal* and may protrude into the abdominal cavity. Tumors located in the myometrium of the uterus are classified as *intramural*.

### Benign Smooth Muscle Tumor

#### Benign-bunny with Smoothie Tumor-guy

Leiomyomas form as a result of monoclonal benign proliferation of myometrial smooth muscle cells and fibroblasts. Depending on whether they form closer to the endometrial or serosal surface within the myometrium. They are classified as being submucosal (closer to the inner surface of the uterus), intramural (embedded within the myometrium) or subserosal (closer to the outer surface of the uterus).

### Risk Factors

#### Early Menarche

##### Man-arch holding Early Sun

Early menarche (<10 years old) is a risk factor for the development of fibroids. Menarche is associated with an increase of estradiol which subsequently is associated with increased growth of fibroids, as the smooth muscle cells that compose fibroids are hormone-sensitive. Early menarche as a risk factor may also account for the increased incidence of fibroids in women of African descent, in whom menarche on average is earlier when compared to women of other ethnicities.

#### Hormone Sensitive

##### Crying Easter-egg and Progesterone-jester playing Harmonica

Leiomyomas are characteristically sensitive to the effects of estrogen and grow with increased levels of estrogen. For this reason, leiomyomas are most likely to occur in women who are in their reproductive years, as this is when estrogen levels are highest. Recall that in normal uterine physiology, estrogen causes myometrial proliferation in order to prepare for pregnancy. Therefore the cells composing the leiomyoma are carrying out a normal physiologic function in responding to estrogen, but on an increased scale.

#### African Americans

##### African American Woman

Leiomyomas have a predilection to occur in women of African descent with a 3-4 times higher prevalence among Black women compared to average. The exact cause of this association is unknown, but early menarche in women of African descent may play a role.

### Presentation

## **Abnormal Menses**

### **Abnormally Long-menstrual Cycles and Heavy Weight**

Heavy or prolonged menses are commonly reported in patients with leiomyoma. The location of the tumor has been found to have a much higher association with the degree of bleeding compared to the size of the tumor, with submucosal tumors being associated with more bleeding. Therefore women with abnormal uterine bleeding that is unexplained, especially post-menopause, should be evaluated with endometrial tissue sampling.

## **Infertility**

### **Infertile-female Patient**

Leiomyomas that project into the uterine cavity (submucosal or large intramural tumors) are known to result in difficulty conceiving and higher risk of miscarriage, as well as higher risk of pregnancy complications such as placental abruption, fetal growth restriction, and preterm labor. This is because the fibroid may interfere with the normal establishment of maternal-fetal circulation, in addition to causing mass-effect resulting in growth restriction.

## **Urinary Symptoms**

### **Urinal**

Fibroids projecting into the pelvic cavity (ie, subserosal) may press against the bladder or urethra, leading to various urinary symptoms such as frequency, urgency, or retention, depending on the location within the urinary tract that is affected.

## **Irregularly Enlarged Uterus**

### **Large Lumpy Uterus**

On pelvic exam, fibroid uteri can be appreciated as a pelvic-abdominal mass with a large size and irregular contour. The size of the uterus is described in terms of fundal height in the superior-inferior axis and is denoted in terms of weeks with comparison to a gravid uterus. For example, a uterus palpable just above the pubic symphysis would be denoted as "twelve weeks", as this would correspond to the size of a gravid uterus at approximately twelve weeks gestation.