

Uterine Fibroids

Fibroids, also called myomas or leiomyomas, are benign smooth muscle tumours. They are the most common uterine neoplasm (benign tumour), and the most common reason for hysterectomy in women under the age of 50. Fibroids are usually multiple. At least half of all women over the age of 35 have fibroids, but less than 50% have symptoms. They are more common among nulliparous (no children), obese, and African women, and shrink after the menopause.

Menorrhagia (heavy periods), pressure symptoms, and pain are the 3 most common symptoms associated with fibroids. They are not a common cause of infertility. Symptoms depend on the location, size and number of fibroids.

Treatment options include observation, drug therapy, myomectomy (surgical removal of the fibroids, but not the uterus), embolization of the blood supply to the fibroids, uterine artery ligation, and hysterectomy. There are no "alternative" therapies that have been objectively demonstrated to shrink fibroids.

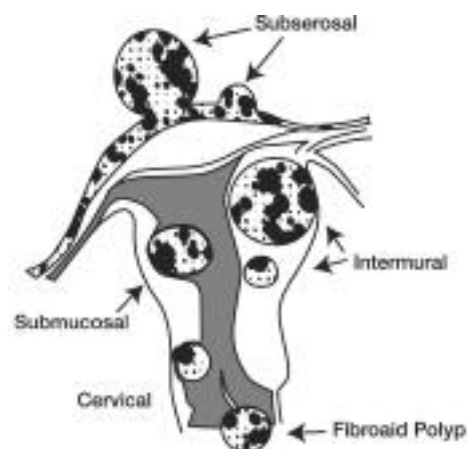
Pathology

Fibroids are benign smooth muscle tumours that arise from a single smooth muscle cell, and appear to be dependent on female sex hormones for their development and continued growth. Individual fibroids develop at different times in a woman's life. When a leiomyosarcoma (cancerous fibroid) is found in a fibromyomatous uterus, it is almost always the largest fibroid that is the malignant one. There is good evidence to show that leiomyosarcomas arise de novo and not from pre-existing fibroids, i.e. cancerous fibroids are malignant from the start and grow very quickly.

Symptoms

Menorrhagia (heavy periods)

Heavy periods are the presenting symptom in 30% of women who have fibroids treated surgically. Submucosal and intramural, but not subserosal, fibroids are to blame (see below).



Fibroids are classified according to their position within the uterus

Pressure

Pressure on the bladder, bowel and pelvic floor (most commonly from large and/or multiple subserosal and intramural fibroids) can cause urinary and bowel dysfunction, as well as dyspareunia (discomfort or pain with intercourse).

Pain

Up to 30% of women with fibroids experience pain. It is usually acute and due to degeneration or torsion (twisting). Chronic pain is unusual, and other causes should be sought.

Infertility

Fibroids may contribute to infertility by distorting the uterine cavity or interfering with the patency of the intramural (in the wall of the uterus) part of the Fallopian tube, and thus compromise sperm transport. Submucosal fibroids may adversely affect implantation. When all other causes of infertility are excluded, fibroids become responsible for only 2-3% of infertility cases. Nevertheless, it is noteworthy that 27% of women with fibroids have fertility problems, and 40% become pregnant after myomectomy. Foetal loss decreases from 41% to 19% in women who have myomectomies performed because of recurrent foetal wastage.

Signs

Abdominal and pelvic examination will reveal a solid, irregular mass in continuity with the uterus that may rise out of the pelvis. It is usually mobile, non-tender, and not associated with ascites (free fluid in the abdomen and pelvis).

Investigations

Ultrasound

Transabdominal and transvaginal real time ultrasound by a gynaecological ultrasound sub-specialist is the most reliable, readily available imaging technique to evaluate the fibromyomatous uterus, and exclude associated ovarian pathology. A diagram showing the number, size, and location of the fibroids should be requested. When dealing with a suspected submucosal fibroid, the use of saline contrast clearly defines how much of the fibroid is in the uterine cavity and how much is in the wall of the uterus. This information is very helpful in making a decision on the suitability for hysteroscopic resection (see below).

Computerized Axial Tomography (CAT)

CAT scanning is a sub-optimal modality for assessing uterine or ovarian pathology in comparison to ultrasound and MRI.

Magnetic Resonance Imaging (MRI)

MRI is the imaging technique of choice for fibroids, but too expensive for routine use in Australia as there is no Medicare rebate. It not only clearly defines fibroids but also can often detect degenerative changes and exclude adenomyoma. Surgical attempts to remove adenomyomas which were believed to be fibroids can result in uncontrollable bleeding that necessitates hysterectomy. As the information provided by MRI may avoid the necessity for surgery, or surgery that could result in an unplanned hysterectomy, it may actually be cost saving in certain clinical situations.

Hysteroscopy

Hysteroscopy (see hysteroscopy under medical information on this website) can be performed in the "awake" state (with or without local anaesthesia), or under a light general anaesthetic. It will confirm the diagnosis of a submucosal fibroid, but may require supplementary ultrasound examination with saline contrast to delineate (outline) the portion of the fibroid that is within the uterine wall.

Full Blood Examination

Full blood examination (FBE) and iron studies are indicated if heavy periods are the presenting symptom.

Complications

Degeneration

Fibroids undergo various forms of degeneration, all of which should be managed conservatively.

Torsion

This is confined to pedunculated (on a stalk) subserosal fibroids that have twisted, and been responsible for acute abdominal pain. This usually results in laparoscopic or open myomectomy.

Infection

Fibroids may become infected after confinement, but infection can also occur after embolization of the blood supply to the fibroid. It is uncommon, but can be very serious and necessitate hysterectomy.

Indications for treatment

Before discussing treatment options, one needs to decide if any treatment is indicated in the first place.

Rapid change in size

The normal rate of growth of fibroids is unknown, and there is no study that has evaluated the reliability of rapid change in size as a predictor of cancer. There is however a retrospective study of over 1300 women undergoing surgery for fibroids which showed no correlation between rapid growth and cancer. On the other hand, it is known that cancerous fibroids grow very quickly.

Uterine size

There is no data to substantiate the recommendation that a fibroid uterus equivalent to the size of a 12-14 week size pregnancy warrants surgical intervention if it is not causing symptoms. However, further increase in size may reduce surgical treatment options, and the route by which they are performed.

Ovarian evaluation

Usually fibroids are diagnosed at a pre-menopausal age when ovarian cancer is far less common. Ovarian cancer is usually diagnosed in the presence of a normal-sized uterus. There is therefore no justification for hysterectomy of a fibromyomatous uterus to facilitate ovarian evaluation. Furthermore, high quality pelvic ultrasound is a much better way of assessing suspected ovarian pathology than bimanual pelvic examination.

Facilitation of oestrogen replacement therapy

Whilst standard doses of oestrogen replacement therapy may stop fibroids from shrinking post-menopausally, they are insufficient to stimulate fibroid growth to the extent that symptoms will become apparent. The indications for hysterectomy or myomectomy of the post-menopausal fibromyomatous uterus need to be viewed in this light.

Appropriate indications for intervention

Menorrhagia (heavy periods)

If heavy periods are socially incapacitating, or responsible for symptomatic anaemia or iron deficiency (fatigue and lack of energy making it difficult to deal with normal day to day activities).

Pelvic pressure (see symptoms above)

This symptom warrants very careful evaluation before deciding on surgery.

Infertility or recurrent miscarriage

When considering myomectomy for the treatment of infertility one needs to be mindful of the small risk (no more than 1% in most cases) of needing to perform a hysterectomy for intra-operative life-threatening haemorrhage, as well as the risks of scar dehiscence (uterine rupture) during pregnancy, and the necessity for caesarean section if the uterine cavity is entered during myomectomy. The risks are far less with a submucosal fibroid that is suitable for hysteroscopic resection. There is also the potential problem of post operative adhesions which may contribute in their own right to infertility.

Treatment options

Observation

Whilst leaving an asymptomatic fibroid alone is an option, it should be remembered that an asymptomatic subserosal fibroid that could have been removed laparoscopically may grow and require a laparotomy for its removal, when it is much larger and symptomatic several years later.

Drug treatment

GnRH analogues are the only currently available proven effective drug treatment. They create a pseudo-menopause (hypo-oestrogenic state). Their therapeutic use is largely confined to women who are peri-menopausal and wish to avoid surgery until menopause supervenes, and the fibroids shrink spontaneously.

They may also be used pre-operatively to shrink the fibroids to facilitate a laparoscopic, hysteroscopic or open myomectomy, as well as making it possible to perform a vaginal or laparoscopically assisted vaginal hysterectomy rather than an abdominal hysterectomy by shrinking the fibroids.

Embolization

Embolic occlusion of the blood supply to the fibroid(s) can be performed as an outpatient procedure under local anaesthesia with non-steroidal anti-inflammatory drug premedication, e.g. Naprogesic. However, post-procedural pain necessitates overnight hospital admission for patient controlled analgesia in more than 50% of cases. It is very effective in treating menorrhagia, but its efficacy in shrinking fibroids is very variable, especially if they are large.

The procedure is associated with a 3-4% risk of inducing premature menopause. Its effect on future pregnancy outcome is unknown, although case reports of successful pregnancies after embolization have been reported in the literature. It is currently not recommended for treatment of fibroids in women who are contemplating pregnancy in the future. The mortality rate for embolization is less than for hysterectomy, and the risk of complications necessitating hysterectomy is comparable to myomectomy.

Although more than 30,000 cases of embolization have been performed worldwide, in Australia it has been classified as experimental until the results of randomized prospective studies being performed in the United Kingdom are completed. Therefore, there is currently no Medicare rebate for the procedure.

Uterine Artery Ligation

Laparoscopic uterine artery ligation with suture, clip or diathermy can result in fibroid shrinkage, and being a global therapy should have comparable results to embolization. There is only limited experience with this technique in Australia.

Hysteroscopic resection

Submucosal fibroids, as long as they are not too large and at least half within the uterine cavity, can be hysteroscopically resected. The procedure is not without risks, including fluid overload, bleeding and uterine perforation.

Myomectomy

Whether this is performed laparoscopically, or as an open procedure, may depend not only on endosurgical expertise, but also on the number, size and location of the fibroids.

There are some concerns about scar integrity in pregnancy after laparoscopic myomectomy because the defect is often closed in a single or double layer, whilst a multi-layered closure is usually performed with the open procedure.

Removal of a fibroid from the peritoneal cavity after its removal from the uterus, if it is large, can also be a problem unless an electric morcellator is available. If it isn't, the specimen needs to be removed through a posterior colpotomy (vaginal removal through a cut at the top of the vagina behind the cervix) or a "bikini line" mini-laparotomy .

Although a 30% recurrence rate after myomectomy is commonly quoted, one large series (3000 myomectomies) found only a 15% recurrence rate and a 10% re-operation rate, i.e. recurrence does not necessarily mean another operation.

Hysterectomy

If one subscribes to the philosophy that there are only two absolute indications for hysterectomy, i.e. cancer and life-threatening uterine haemorrhage, hysterectomy becomes just another treatment option for fibroids, not the only one, but sometimes the most appropriate one.

It may be the treatment of choice in a 40 year old mother of 4 children who had previously been sterilized, and now day to day life is a struggle because of iron deficiency anaemia due to heavy periods associated with a uterus enlarged to the size of a 16 week pregnancy by a dozen fibroids.

Another genital tract problem such as prolapse associated with a fibromyomatous uterus may also make hysterectomy the treatment of choice.

Hysterectomy can be performed vaginally, abdominally, laparoscopically, or with laparoscopic assistance (see see hysterectomy medical information on the www.rafaelkuhn.com.au website). The cervix and/or ovaries maybe removed or conserved. The pros and cons of the various techniques require discussion in each individual case.