

Uterine Fibroids

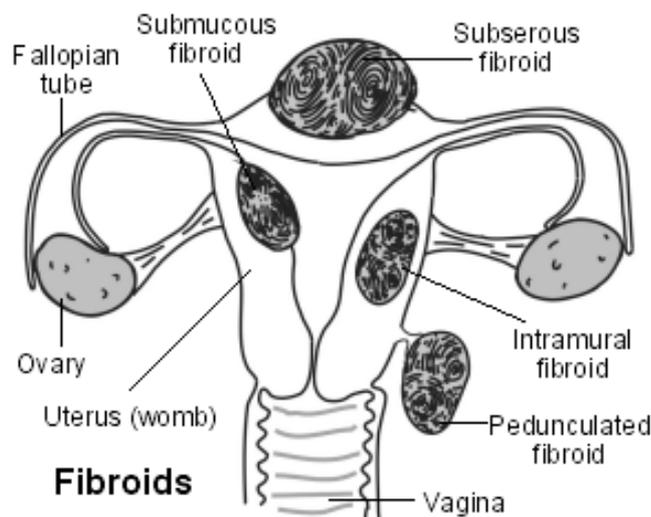
Epidemiology

Uterine fibroids (leiomyomas) are benign tumours that arise from the smooth-muscle cells of the uterus. They are clinically apparent in 25% of women and cause significant morbidity.¹ The incidence of uterine fibroids increases in women with increasing age, affecting more than 30% of women between 40 and 60 years of age. Uterine fibroids are 2–3 times commoner in obese women.

Prospective studies have shown that black women are more like to have fibroids than white women.^{2,3} Several studies have shown that substantial consumption of red meats were associated with an increased risk of fibroids and consumption of green vegetables with a decreased risk of fibroids.⁴ Some studies have showed that the oral contraceptive pill and even smoking decreases the risk.^{5,6}

Aetiology

The exact aetiology of uterine fibroids is not clearly understood, however, there is evidence that suggests that fibroids are monoclonal tumours, which grow from a single mutated uterine smooth-muscle cell at various sites in the myometrium. Furthermore, fibroid growth is strongly dependent on Oestrogen and Progesterone.



This image shows the various location of the growth of fibroids. Intramural fibroids grow within wall of the uterus; subserosal fibroids grow from the outer wall of the uterus and into the pelvis – these can also grow out in a papillary manner to form pedunculate fibroids; submucosal fibroids grow under the endometrium of the uterus.^{7,8}

Diagnosis

Most fibroids are asymptomatic but many women can have significant symptoms:

- Abnormal uterine bleeding (menorrhagia or prolonged menstrual bleeding)
- Pelvic pressure and pain
- Reproductive dysfunction (dyspareunia or infertility) – secondary to anatomical distortion

Other symptoms include: urinary frequency or retention, bloating, backache and painful defecation. During pregnancy, fibroids may be the cause of miscarriage, premature labour, pain or mal-presentation of the foetus.

Fibroids are round, well-circumscribed, solid nodules with variable size, ranging from microscopic to huge masses filling the abdominal cavity. Generally, larger fibroids (greater than the size of a grapefruit) are felt by the patient herself. Thus diagnosis is often suspected on the basis of palpation of an enlarged irregular uterine contour on bimanual pelvic palpation.

The diagnosis of fibroids is based primarily on imaging, either ultrasound or MRI. Transvaginal ultrasound is typically the first line diagnostic measure. MRI, though not routinely done due to costs, is particularly useful in establishing the exact position, characteristics, number of fibroids and their associated relationship with the adjacent viscera.

Management – Is largely dependent on whether the woman requires contraceptive benefits or wishes to preserve her fertility.

Medical:

- **NSAIDs** for pain relief
- **Oral contraceptives** to reduce uterine bleeding
- **Iron supplements** for anaemia
- **The levonorgestrel intrauterine system (IUS)** is effective for reducing menstrual blood flow
- **Gonadotrophin-releasing hormone (GnRH)** agonists can cause regression by decreasing circulating oestrogen. However, it is only used temporarily (pre-op to shrink fibroids) due to risk of osteoporosis, although could be given alongside HRT to alleviate side effects. This is administered in the form of monthly injections known as Prostag.

- **Progesterone antagonists** have been shown to reduce size of fibroids but significant side effects have been noted. These are administered in oral form e.g. Ezmya and are only licensed for 3 month treatment due to their poor safety profile

Surgical:

- **Uterine artery embolisation (UAE)** – is a safe and effective radiological technique used in the management of symptomatic fibroids. It can significantly alleviate pain, menstrual loss and pressure effects from fibroids. The average decrease in fibroids volume is about 40%. This is similar to what is often achieved from GnRH agonists, but unlike with GnRH agonists, the fibroid does not re-grow after cessation of treatment. Despite good short and mid-term outcomes, a significant number of women will require repeat embolisation.
- The drawback to uterine artery embolization is that it leads to fibroid degeneration – which is when the blood supply to the fibroid is interrupted causing fibroid ischaemia. This presents as acute pelvic pain and loss of tissue type material through the vagina – this can be severe enough to require admission to hospital.
- **Endometrial ablation** – can be considered in women who have no fertility concerns and is suitable for those primarily with menstrual bleeding problems.
- **High intensity focussed ultrasound** – this non-invasive thermo-ablative technique focuses ultrasound waves on fibroid tissue, raising the temperature within the diseased tissue and so destroying it. This procedure is usually enhanced by the use of MRI to guide it.
- **Myomectomy** – removal of fibroids whilst maintaining the uterus. Usually recommended in patients who wish to preserve fertility and have not responded to medical treatment. Most often carried out through a laparotomy incision, though increasingly via laparoscopy.
- **Hysterectomy** – removal of the uterus. Remains a common treatment option in women who have completed their family and have failed to respond to medical treatment.

Prognosis

Fibroids are dependent on oestrogen and progesterone to grow and they tend to shrink after menopause. The malignant version of a fibroid is very uncommon and is termed a leiomyosarcoma. Women with these malignant tumours often have raised Ca125.⁹

References

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