Benign disease of the uterus is an important problem for many women and their gynaecologists. The commonest condition in this category is fibroids but adenomyosis and uterine polyps are also of importance. Both fibroids and endometrial polyps are very common and although asymptomatic in many women, they can cause considerable morbidity for others.

**Endometrial polyps**

Endometrial polyps are discreet outgrowths of the endometrium that contain a variable amount of gland, stroma and blood vessel. They are attached to the endometrium by a pedicle and they may be pedunculated or sessile.

**Epidemiology:**

The presence of endometrial polyps is being increasingly recognized since the widespread adoption of transvaginal ultrasound and outpatient hysteroscopy. It is probable that they are present in 25% of women with abnormal vaginal bleeding. At least 10% of asymptomatic women are also likely to have polyps. They are particularly common in women taking preparations such as tamoxifen.

**Presentation**

Unscheduled vaginal bleeding or spotting is the commonest presentation for endometrial polyps. They are frequently found in association with women experiencing abnormal bleeding while taking hormone replacement therapy (HRT) or tamoxifen.

**Diagnosis of endometrial polyp:**

1. Transvaginal ultrasound, Intrauterine injection of saline can markedly increase the diagnostic performance of transvaginal ultrasound.
2. Hysteroscopy, The best method for diagnosing polyps is hysteroscopy; so it is a possibility that they might then be treated at the sametime.

They can be distinguished from pedunculated fibroids since they have fewer vessels over the surface. Malignant polyps are more likely to be irregular, vascular or friable. Biopsy should be carried out to confirm the diagnosis since appearance is not sufficient.

**Treatment of end. Polyp:**

In the symptomatic women, treatment will normally be performed under general anaesthesia. They can also be treated in the outpatients setting either by removal under direct vision or by treatment with specially developed diathermy instrumentation.

**Uterine leiomyomata (fibroids):**

They are the most common neoplasm of the uterus, are clinically apparent in 20% of women of reproductive age and maybe present in as many as 70% of uteri removed at hysterectomy.

Their incidence is increased in women of Afro-Caribbean origin, while decreased with prolonged use of the oral contraceptive pill as well as with increasing numbers of term pregnancies.
**Malignant change:**

Although leiomyomas have the potential to grow to impressive sizes, their malignant potential is minimal. Sarcomatous changes occur in less than 1 per 1000 uteri with fibroids.

Fibroids consist of varying proportions of smooth muscle and fibroblasts. They may be single or multiple and can occur anywhere in the uterus.

**Risk factors for developing leiomyomas include:**

1- Increasing age during the reproductive years,
2- Ethnicity (African-American women have at least a 2- to 3-fold increased risk compared to Caucasian women),
3- Nulliparity,
4- Family history.
5- Higher body mass index is associated with a greater risk of leiomyomata.

Oral contraceptive pills and depot medroxyprogesterone acetate (DMPA) injections may be associated with reduced risk.

**Pathogenesis:**

Factors that initiate leiomyomata are not known, but ovarian sex steroids are important for their growth. Leiomyomas rarely develop before menarche and seldom develop or enlarge after menopause, unless stimulated by exogenous hormones. Leiomyomas can also enlarge dramatically during pregnancy. Leiomyomas have increased levels of estrogen and progesterone receptors compared to other smooth muscle cells.

Estrogen stimulates the proliferation of smooth muscle cell, whereas progesterone increases the production of proteins that interfere with programmed cell death (or apoptosis). Leiomyomas also have higher levels of growth factors that stimulate the production of fibronectin and collagen, major components of the extracellular matrix that characterizes these lesions.

**Characteristics:**

Leiomyomas are usually:

1- spherical,
2- well-circumscribed,
3- white,
4- firm lesions with a whorled appearance on cut section.

Although the leiomyoma appears discrete, it does not have a true cellular capsule. Compressed smooth muscle cells on the tumor's periphery provide the false impression of such a capsule.

**Type of fibroid degeneration:**

Few blood vessels and lymphatics traverse pseudocapsule, leading to degenerative changes as the tumors enlarge. The most commonly observed degenerative change is that of hyaline acellularity, in which the fibrous and muscle tissues are replaced with hyaline tissue. If the hyaline substance breaks down from a further reduction in blood supply, cystic degeneration may occur.
Calcification may occur in degenerated fibroids, particularly after the menopause. Fatty degeneration may also occur but is rare.

During pregnancy, 5% to 10% of women with fibroids undergo a painful red or carneous degeneration caused by hemorrhage into the tumor.

**Site of uterine fibroids:**

Leiomyomas arise within:

1. the myometrium (intramural),
2. some migrate toward the serosal surface (subserosal).
3. toward the endometrium (submucosal).

Individual tumors may migrate further by developing large pedicles. The submucosal leiomyomas can extend through the endometrial canal and about from the cervical os.

4. Rarely, pedunculated subserosal myomata attach to the blood supply of the omentum or bowel mesentery and lose their uterine connection to become parasitic leiomyomas.
5. Leiomyomas can also arise in the cervix.
6. between the leaves of the broad ligament (intraligamentous), and in the various supporting ligaments (round or uterosacral) of the uterus.

**Symptoms associated with uterine fibroids:**

1. The majority of uterine leiomyomas cause no symptoms (50%) (Asymptomatic).
2. Uterine fibroids commonly present with menstrual problems particularly heavy menstrual bleeding.

Menorrhagia may be associated with intramural or submucosal tumor.

Menorrhagia has been associated with submucous myomas ulcerating through the endometrial lining. Excessive bleeding may result in anemia, weakness, dyspnea, and even congestive heart failure.

Recently it has been shown that Menorrhagia is not just confined to those who have submucous fibroids but can also be associated with subserosal lesions.

3. Dysmenorrhoea can be an additional problem leading to misery for the women affected.

There is an increased incidence of secondary dysmenorrhea in women with uterine myomas, generally caused by the increased blood loss.

4. Symptoms related purely to the size of the fibroid.

This may be a feeling of dragging or pressure in the pelvis or simply that of abdominal swelling.
She may complain of:

- pelvic pressure,
- congestion,
- bloating,
- a feeling of heaviness in the lower abdomen, or lower back pain.

She may note frequency of urination. Urinary retention and hydronephrosis are rare but result from the fact that the bladder and large leiomyomas compete for space within the pelvis.

In addition, pressure pains may occur in the lower abdomen and pelvis if a myomatous uterus becomes incarcerated within the pelvis.

5. Dyspareunia is also common with incarceration.
6. Subfertility, Difficulty in conceiving, Pregnancy loss, Intrapartum bleeding (particularly Caesarian section), are other problems that may be caused by fibroid.

**Sign of uterine fibroid:**

Very large fibroids can be palpated abdominally. Those smaller than a 12- to 14-week gestational size are usually confined to the pelvis.

The bladder should be emptied before examination to avoid the confusion of urinary retention. Although submucous fibroids may not be palpable.

on bimanual pelvic examination a firm, irregularly enlarged uterus with smoothly rounded or bosselated protrusions may be felt if the tumors are subserosal or intramural.

The tumors are usually non tender.

Their consistency may vary from rock hard, as in the case of a calcified postmenopausal leiomyoma, to soft or even cystic, as in the case of cystic degeneration of the tumor.

**Sign:**

In general, the myomatous masses are in the midline, but sometimes a large portion of the tumor lies in the lateral aspect of the pelvis and may be indistinguishable from an adnexal mass.

*If the mass moves with the cervix, it is suggestive of a leiomyoma.*

**Diagnosis:**

1 – Ultrasonography is very useful as first line investigation.

2 – MRI scan can give excellent visualization of the uterus and ovaries. In addition, enhancement with gadolinium gives an indication of the vascularity of the uterus.

Biopsy of the fibroid is not commonly undertaken.
Pregnancy Complications Due to Leiomyoma

1- Abortion  
2- Premature labor  
3- Disturbances in labor  
4- Postpartum hemorrhage  
5- Ectopic pregnancy  
6- Premature rupture of membrane  
7- Dystocia secondary low segment myoma  
8- Increase operative deliveries  
9- Inversion of uterus

Differential Diagnosis:

The most common differential diagnoses are

1- An ovarian neoplasm,  
2- A tubo-ovarian inflammatory mass,  
3- A pelvic kidney,  
4- A diverticular or inflammatory bowel mass, or cancer of the colon.

Treatment of uterine fibroids:

In general, if a small asymptomatic fibroid is detected, a repeat ultrasonic examination within 6 months is prudent to rule out a rapidly growing uterine sarcoma. If menorrhagia is the chief complaint, it is imperative that an endometrial aspiration or a fractional dilatation and curettage (D&C) be performed to rule out related pathology.

Medical Management:

Menorrhagia caused by fibroids may be managed hormonally in many cases.

- Progestin-only therapies (oral or injected medroxyprogesterone acetate, progestin-only oral contraceptive pills, or levonorgestrel-releasing intrauterine devices) or
- Combination hormonal contraceptive methods (oral contraceptive pills, vaginal rings, or patches) are usually a first therapeutic option.

The goal of hormonal treatment may be to reduce monthly menstrual blood loss with cyclic hormonal methods or to eliminate menses with extended or continuous use of these methods.

GnRH agonists have demonstrated considerable efficacy in blocking ovarian steroidogenesis, which halts endometrial proliferation.

GnRH agonists reduce the volume of the myometrium and the leiomyomas. This allows for correction of anemia and reduces intraoperative blood loss.

The effects of GnRH-agonist therapy disappear soon after the drug is stopped.

because of the intense vasomotor symptoms and the deleterious effect the on bone mineral density, only short courses of these agonists can be administered, usually in preparation for myomectomy or hysterectomy.

Intermittent GnRH- agonist administration has been shown to reduce side effects while achieving therapeutic goals longer term.
Combining GnRH agonists with hormonal agents, such as low-dose progesterone or estrogen/progestin combinations, may minimize some adverse effects of hypoestrogenism (such as osteoporosis), but long-term data are not available.

Clinical trials using:

the selective antiprogesterone receptor antagonist, mifepristone (RU 486), to reduce the size of uterine myomas have shown a reduction of 50% over a 3-month period.

Surgical Management:

Medical therapy is of limited value in treating the other problems posed by leiomyoma.

Surgical interventions are important to treat these problems as well as to treat leiomyoma that are not responsive to medical management.

1. Myomectomy is the preferred surgical procedure for women with a limited number of tumors who desire uterine preservation.

Myomectomy occasionally can be performed hysteroscopically for submucous masses or transabdominally (either laparoscopically or with laparotomy) for other leiomyomas.

Pretreatment for 3 months with GnRH agonists and the use of vasoconstrictive agents intraoperatively may improve surgical outcomes whatever surgical approach is used. Myomectomy may not be successful in avoiding hysterectomy. Not all the tumors may be removed, and new leiomyomata may grow in the future. About 25% of women will require a subsequent operation.

2. Hysterectomy provides definitive therapy. If the uterus is large (>12 to 14 cm), laparotomy is generally the preferred approach.

Vaginal hysterectomy is generally preferred if the uterus is not bulky and the vagina is not constricted. Laparoscopically assisted vaginal hysterectomy permits excellent visualization of the adnexae and controlled dissection from above without a large abdominal incision. Rapid growth of a uterus caused by leiomyoma (doubling in size in <6 months) may be the result of leiomyosarcoma, and hysterectomy is generally recommended.

Other therapies are emerging, especially for women who desire uterine preservation.

3. Embolization of the uterine arteries supplying the leiomyomas has been found to be effective, at least in the short term, for controlling leiomyoma-induced bleeding and to shrink the myomas.

4. Endometrial ablation with hysteroscopic resection, laser ablation, or roller ball may be technically difficult if the leiomyomata distort the cavity. This approach may be appropriate for women who are poor candidates for more extensive surgery.

5. Laser ablation of fibroids can be carried out at surgery either using a hysteroscope or a laparoscope depending on the position of the fibroids. Laser can also be used with MRI or ultrasound guidance. Alternatively MRI guidance can be used to focus ultrasound and fibroid necrosis occurs without significant adverse outcomes.