



Uterine fibroids

Many options exist besides hysterectomy

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Fibroids are the most common tumours in women, affecting at least 30% of those in the 25-45 years age group. By the age of 50, they're present in 78% of African-American women and nearly 70% of Caucasian ones. Fibroids arise from a single uterine smooth muscle cell (monoclonal). They grow and proliferate under the influence of estrogen and progesterone, modulated by local growth factors. Red meat increases the risk of occurrence but not the symptoms once they occur.

These tumours appear after menarche, grow in number and size during the reproductive years and stabilize after induced or natural menopause. Hormone replacement therapy, however, may restart their growth. Fibroids account for approximately 30% of all hysterectomies. Malignant fibroids (sarcomas) are found in less than one per 100,000 women and in less than 0.5% of all hysterectomies performed for fibroids.

Most fibroids cause no symptoms and require no treatment. Depending on myoma size, location and number, 20-50% of affected individuals experience symptoms, the most common being menstrual abnormalities.

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Risk factors

- race: African-American > Caucasian
- diet: red meats increase risk
- hyperestrogenic states: endogenous, exogenous
- obesity: raises risk by 20% with each 10 kg increase over 55 kg

Protective factors

- parity: prevalence diminishes by 20% after every delivery
- diet: green vegetables
- smoking: induces hypoestrogenic state
- longer use of oral contraceptives
- levonorgestrel intrauterine device
- menopause

Signs and symptoms

- abnormal uterine bleeding
 - menorrhagia/hypermenorrhea
 - menometrorrhagia
 - polymenorrhea
- bulk effects
 - bloating — increased abdominal girth, pregnant-like abdomen
 - bowel dysfunction
 - pelvic/abdominal pressure
 - rarely, pain
 - bladder dysfunction — frequency, urgency, dysuria, anuria
 - renal dysfunction — hydronephrosis, loss of renal function
- reproductive dysfunction
 - infertility — occurs due to distortion of uterine cavity and fallopian tubes
 - early pregnancy loss
 - pregnancy complications — twice as likely

Differential diagnosis

- pregnancy
- adenomyosis of the uterus
- endometriosis
- malignant lesions of the uterus
- large intrauterine polyps
- adnexal tumours
- bladder and/or bowel tumours

Diagnosis

- history — high index of suspicion
- pelvic examination — irregular, enlarged uterus
- imaging
 - ultrasound — transabdominal, transvaginal, saline infusion
 - x-ray — hysterosalpingography
 - computed tomography scan
 - magnetic resonance imaging (MRI) — better visualization of fibroids and their perfusion
- surgical — excisional biopsy
 - hysteroscopy
 - laparoscopy
 - laparotomy

Treatment

Medical therapies with proven efficacy

- danazol and other androgenic steroids — offer carry-over effect after cessation of therapy
- gonadotropin-releasing hormone (GnRH) agonists — induce menopausal state and reduce fibroid volume up to 50% by three months of treatment
- GnRH agonists plus add-back therapy for long-term maintenance
- GnRH agonist followed by danazol for long-term maintenance
- mifepristone (RU486) with or without a GnRH agonist — mifepristone is a potent antiprogestosterone
- raloxifene after menopause
- levonorgestrel intrauterine device

Surgical therapies

- uterine artery occlusion — causes uterine and myoma ischemia — myometrium reperfuses and survives while fibroids necrose
 - transfemoral particle embolization
 - transfemoral artery occlusion
 - laparoscopic uterine artery occlusion
- hysteroscopic myomectomy
- laparoscopic myomectomy and repair of the uterus
- laparoscopic myolysis (fiberlaser, electrocoagulation, cryomyolysis)
- laparotomy
 - myolysis (fiberlaser, electrocoagulation, cryomyolysis)
 - myomectomy
 - hysterectomy — total or subtotal

Treatments undergoing evaluation

- transvaginal temporary Doppler-guided uterine artery occlusion
- MRI-guided focus high-intensity ultrasound
- MRI-guided percutaneous laser ablation
- regulation of growth factors
- GnRH antagonists
- selective progesterone receptor modulators

Complications if left untreated

- hemorrhage, anemia
- bulk effects
 - ureteral obstruction
 - loss of renal function